

2017 ACCESSORIES & EQUIPMENT

Vehicle Access - Encore, Trax

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 Door Lock Striker Screw	22 N.m (16 lb ft)
Front Side Door Latch Screw	10 N.m (89 lb in)
Front Side Door Lock Cylinder Clamp Screw	5 N.m (44 lb in)
Front Side Door Outside Handle Bracket Screw	4 N.m (35 lb in)
Front Side Door Outside Handle Lock Cylinder Screw	9 N.m (80 lb in)
Liftgate Latch Screw	22 N.m (16 lb ft)
Liftgate Latch Striker Fastener	22 N.m (16 lb ft)
Liftgate Outside Handle Bolt	9 N.m (80 lb in)
Rear Side Door Latch Screw	10 N.m (89 lb in)
Rear Side Door Lock Striker Screw	22 N.m (16 lb ft)
Rear Side Door Outside Handle Bracket Screw	4 N.m (35 lb in)

SCHEMATIC WIRING DIAGRAMS

DOOR LOCK/INDICATOR WIRING SCHEMATICS (BUICK)

Switches and Ajar Indicator Front and Liftgate (Buick)

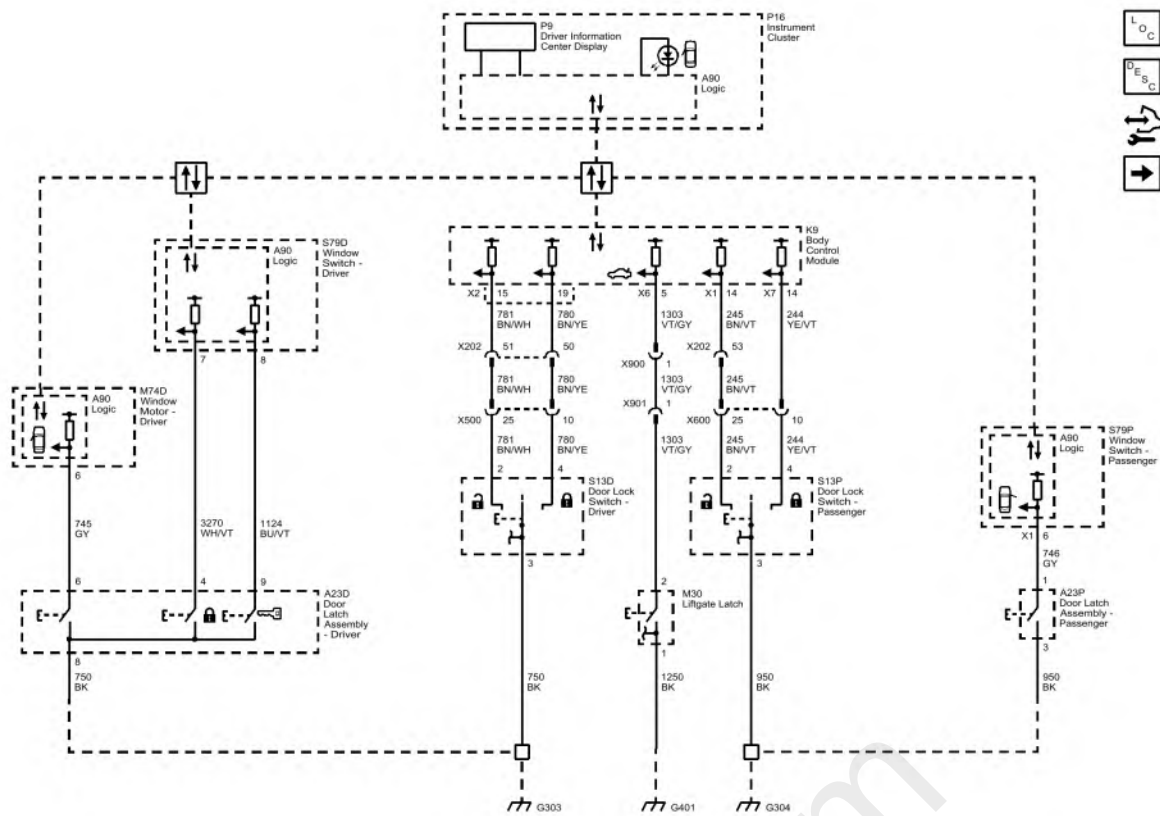


Fig. 1: Switches and Ajar Indicator Front and Liftgate (Buick)
 Courtesy of GENERAL MOTORS COMPANY

Switches and Ajar Indicator Rear (Buick)

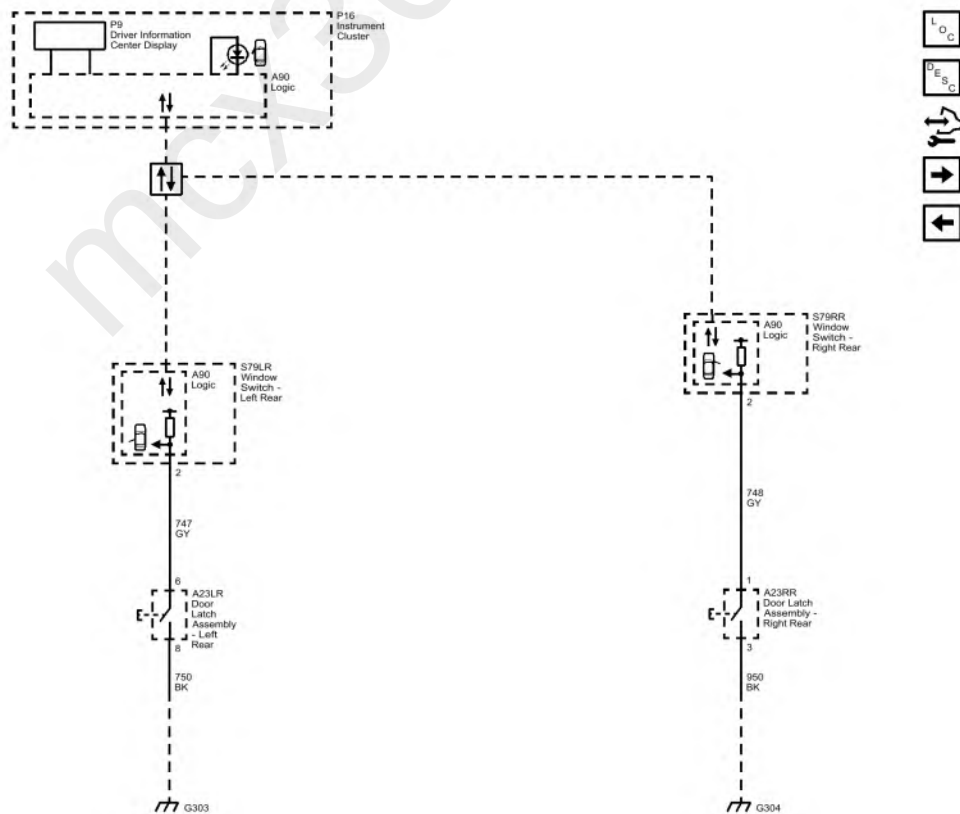


Fig. 2: Switches and Ajar Indicator Rear (Buick)
 Courtesy of GENERAL MOTORS COMPANY

Actuators (Buick)

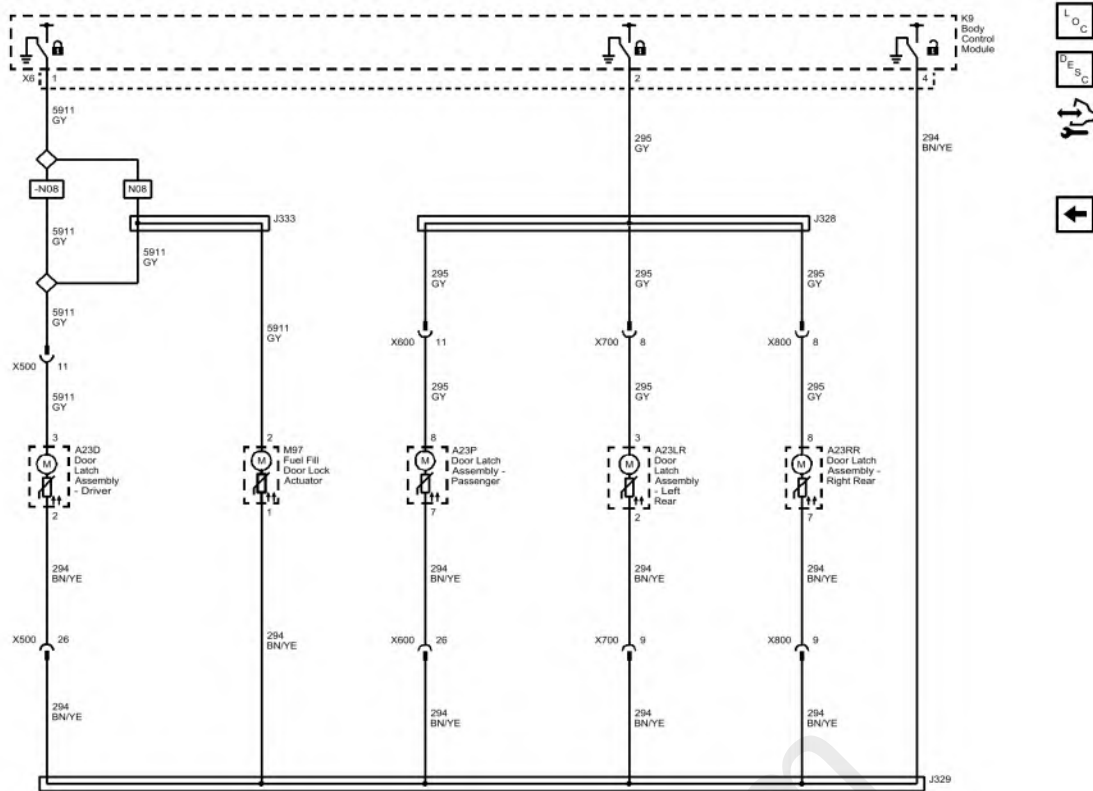


Fig. 3: Actuators (Buick)

Courtesy of GENERAL MOTORS COMPANY

DOOR LOCK/INDICATOR WIRING SCHEMATICS (CHEVROLET)

Front Door Switches, Ajar Indicators, and Rear Door Switches (Chevrolet)

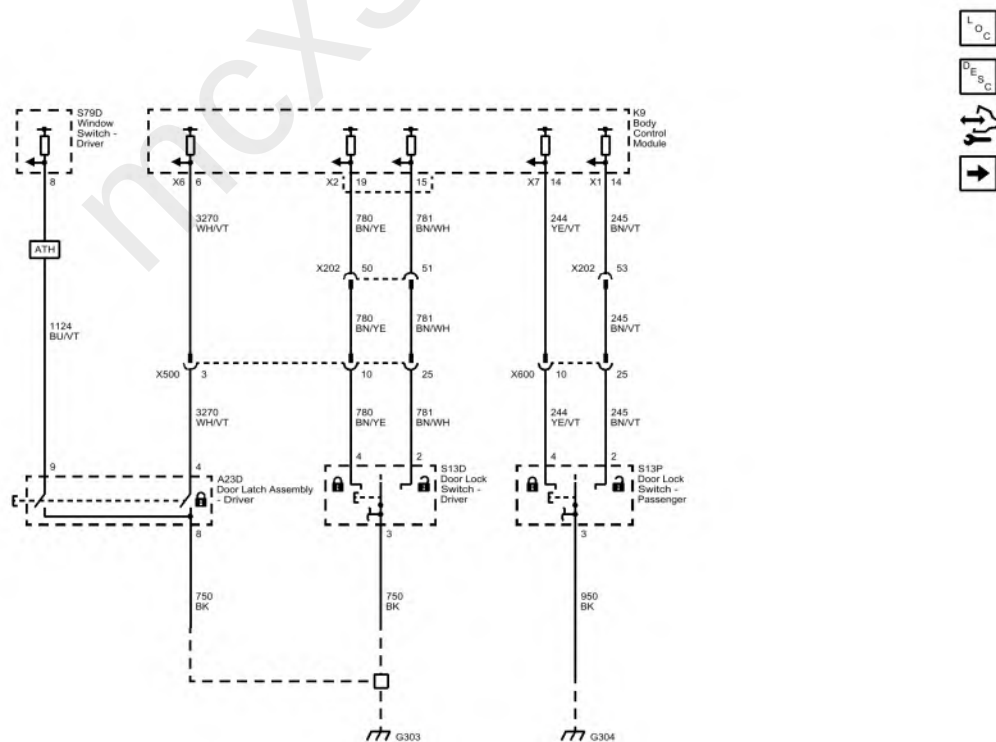


Fig. 4: Front Door Switches, Ajar Indicators, and Rear Door Switches (Chevrolet)

Courtesy of GENERAL MOTORS COMPANY

Rear Door Switches and Child Lock Indicator (Chevrolet)

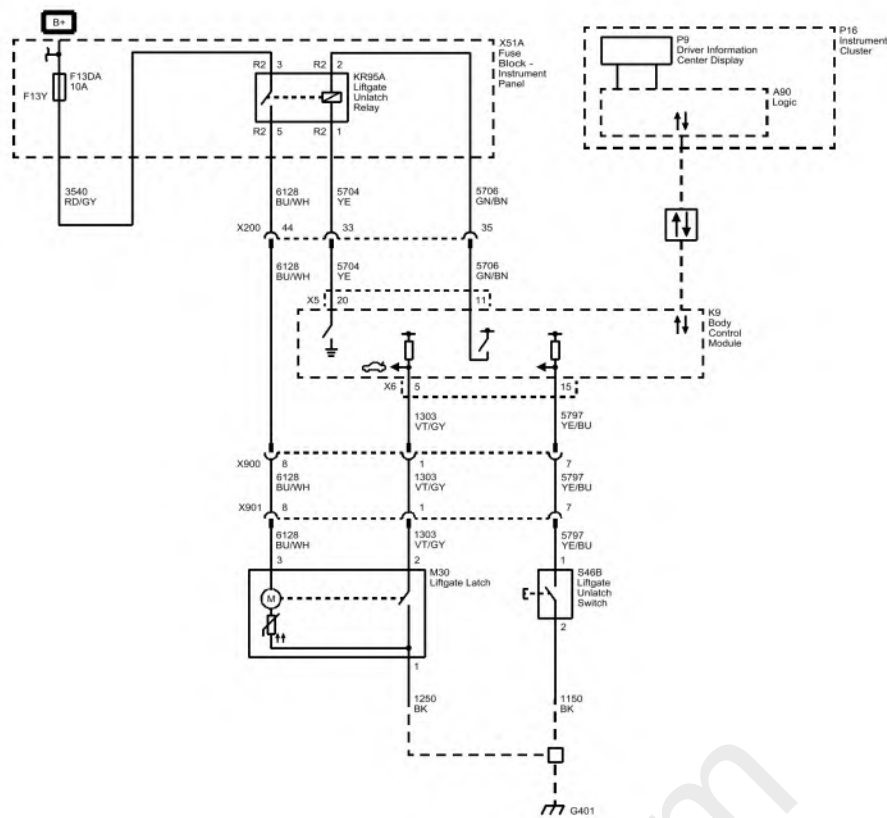


Fig. 7: Liftgate Release (Buick)

Courtesy of GENERAL MOTORS COMPANY

RELEASE SYSTEMS WIRING SCHEMATICS (CHEVROLET)

Liftgate Release (Chevrolet)

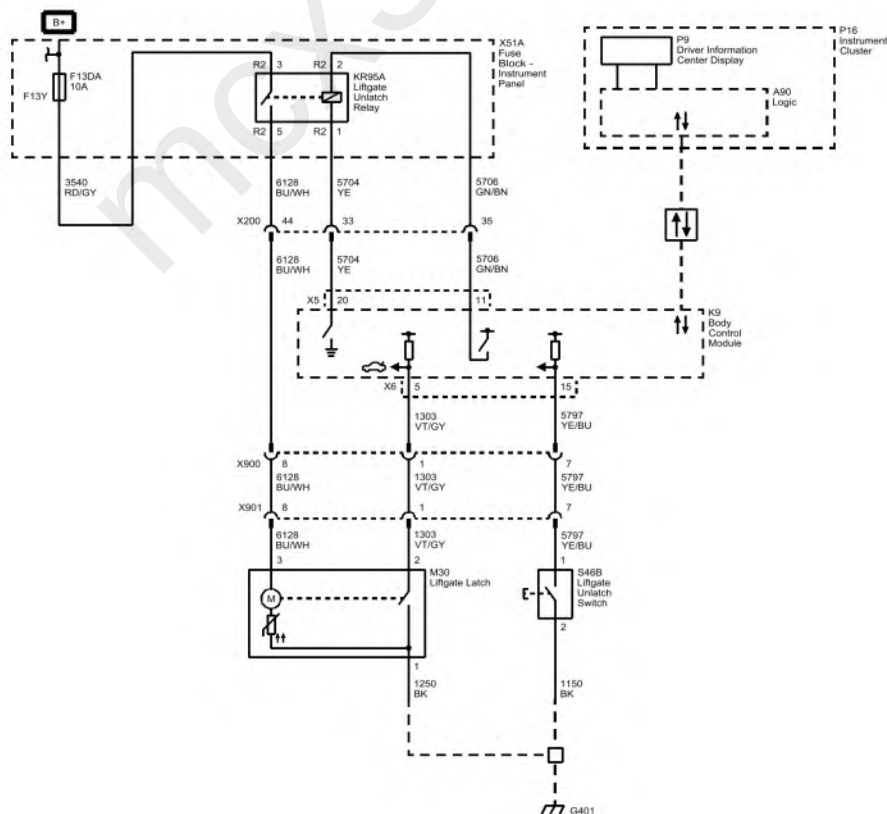


Fig. 8: Liftgate Release (Chevrolet)

Courtesy of GENERAL MOTORS COMPANY

DIAGNOSTIC INFORMATION AND PROCEDURES

DTC B1474 OR B3849: EXTERIOR DOOR HANDLE SWITCH

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 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 - Exterior Driver Door Handle Switch	B3849 02	1	1	-
Signal - Exterior Passenger Door Handle Switch	B1474 02	2	2	-
Ground - A24D Door Handle Assembly - Driver Exterior	-	2	-	-
Ground - A24P Door Handle Assembly - Passenger Exterior	-	2	-	-
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/Vehicle $\hat{\Lambda}$ On

Conditions for Setting the DTC

B1474 02 - Passenger Door Handle Switch Signal=Short to Ground-For greater than 60 s

B3849 02 - Driver Door Handle Switch Signal=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 Schematics \(Buick\)](#) [Door Lock/Indicator Schematics \(Chevrolet\)](#)
- [Remote Function Schematics \(Buick\)](#) [Remote Function Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Door Component Views \(Buick\)](#) [Door Component Views \(Chevrolet\)](#)

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
 - **If the specified state**
3. Verify the scan tool parameter:Exterior Passenger Door Handle Switch=Inactive
 - **If not the specified state**

Refer to: Circuit/System Testing
 - **If the specified state**

4. Operate the component:B27D Door Handle Switch - Driver ExteriorÂ»Pressed

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

- **If not the specified state**

Refer to: Circuit/System Testing

- **If the specified state**

5. Operate the component:B27P Door Handle Switch - Passenger ExteriorÂ»Pressed

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

- **If not the specified state**

Refer to: Circuit/System Testing

- **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 Off and all vehicle systems Off.

2. Disconnect the appropriate electrical connector:A24D Door Handle Assembly - Driver ExteriororA24P Door Handle Assembly - Passenger Exterior

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

- **If 10 Ω or greater**

1. Ground ConnectionÂ»Disconnect

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

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

- **If less than X2**

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 3 @Component harness & Ground

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

- **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:Exterior Door Handle Switch Circuit=Active

- **If not the specified state**

1. Ignition/Vehicle Â» Off & Remove Â» 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 3 @Component harness & Ground

- If 1 V or greater $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle Off.
 6. Test for less than 2 Ω between the test points:
 - A24D Door Handle Assembly - Driver ExteriorSignal circuit terminal 3 @Component harness & Terminal 12 X2 @Control module harness
 - A24P Door Handle Assembly - Passenger ExteriorSignal circuit terminal 3 @Component harness & Terminal 11 X2 @Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Replace the component:K84 Keyless Entry Control Module
 - **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 ExteriororA24P Door Handle Assembly - Passenger Exterior
3. Test for infinite resistance between the test points:Signal terminal 3 & Ground terminal 4 - Not Pressed
 - **If less than infinite resistance**
Replace the component:A24 Door Handle Assembly
 - **If infinite resistance**
4. Test for less than 3 Ω between the test points:Signal terminal 3 & Ground terminal 4 - Pressed
 - **If 3 Ω or greater**
Replace the component:A24 Door Handle Assembly
 - **If less than 3 Ω**
5. All OK.

Repair Instructions

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

- [Front Side Door Outside Handle Replacement \(Without ATH\)](#)[Front Side Door Outside Handle Replacement \(With ATH\)](#)
- 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

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

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 - Exterior Left Rear Door Handle Switch	B1534 02	1	1	-
Signal - Exterior Right Rear Door Handle Switch	B1535 02	2	2	-
Ground - A24LR Door Handle Assembly - Left Rear Exterior	-	1	-	-
Ground - A24RR Door Handle Assembly - Right Rear Exterior	-	2	-	-
1. A24LR Door Handle Assembly - Left Rear Exterior=Disabled 2. A24RR Door Handle Assembly - 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
A24LR Door Handle Assembly - Left Rear Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
A24RR Door Handle Assembly - 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 $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode

Conditions for Setting the DTC

B1534 02

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

B1535 02

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

Actions Taken When the DTC Sets

B1534 02

B1535 02

A24RR Door Handle Assembly - 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

[Remote Function Schematics \(Buick\)](#), [Remote Function Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#), [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Door Component Views \(Buick\)](#), [Door Component Views \(Chevrolet\)](#)

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. A24LR Door Handle Assembly - Left Rear Exterior⬆Not Pressed

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

- **If not the specified state**

Refer to: Circuit/System Testing

- **If the specified state**

3. A24RR Door Handle Assembly - Right Rear Exterior⬆Not Pressed

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

- **If not the specified state**

Refer to: Circuit/System Testing

- **If the specified state**

4. Operate the component:A24LR Door Handle Assembly - 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

- **If the specified state**

5. Operate the component:A24RR Door Handle Assembly - 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

- **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 ExteriororA24RR Door Handle Assembly - Right Rear Exterior

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

- **If 10 Ω or greater**

1. Ground Connection»Disconnect

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

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

- **If less than 10 Ω**

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

- **If the specified state**

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

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 Ω between the test points:

- A24LR Door Handle Assembly - Left Rear ExteriorSignal circuit terminal 1 @Component harness & Terminal 2 X2 @Control module harness
- A24RR Door Handle Assembly - Right Rear ExteriorSignal circuit terminal 1 @Component harness & Terminal 1 X2 @Control module harness
- If $2\ \Omega$ or greater $\hat{\Lambda}$ » Repair the open/high resistance in the circuit.
- If less than $2\ \Omega\ \hat{\Lambda}$ » Replace the component:K84 Keyless Entry Control Module

- **If the specified state**

8. Test or replace the component:A24 Door Handle Assembly

Component Testing

1. Ignition/Vehicle $\hat{\Lambda}$ » Off
2. Disconnect the appropriate electrical connector:A24LR Door Handle Assembly - Left Rear ExteriororA24RR Door Handle Assembly - Right Rear Exterior
3. Test for infinite resistance between the test points:Signal terminal 1 & Ground terminal 4 - The switch is in the open position.
 - **If less than infinite resistance**
Replace the component:A24 Door Handle Assembly
 - **If infinite resistance**
4. Test for less than $3\ \Omega$ between the test points:Signal terminal 1 & Ground terminal 4 - The switch is in the closed position.
 - **If $3\ \Omega$ or greater**
Replace the component:A24 Door Handle Assembly
 - **If less than $3\ \Omega$**
5. All OK.

Repair Instructions

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

- [Rear Side Door Outside Handle Replacement \(Without ATH\)](#)[Rear Side Door Outside Handle Replacement \(With ATH\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

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	B297B 5A	B297B 5A	B297B 5A	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ground	-	1	-	-
1. Door Ajar Indicator»Driver Door=Always Off				

Typical Scan Tool Data

Body 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	-

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: [Steering Wheel and Column Description and Operation](#)

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:

- Driver Door Open Switch Circuit=Open/High Resistance & Left Front Door Ajar Circuit=Normal
- Driver Door Open Switch Circuit=Short to Ground & Left Front Door Ajar Circuit=Normal
- Left Front Door Ajar Circuit=Open/High Resistance & Driver Door Open Switch Circuit=Normal

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

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 Schematics \(Buick\)](#) [Door Lock/Indicator Schematics \(Chevrolet\)](#)
- [Remote Function Schematics \(Buick\)](#) [Remote Function Schematics \(Chevrolet\)](#)
- [Column Lock Schematics \(Buick\)](#) [Column Lock Schematics \(Chevrolet\)](#)

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX (ENCORE) **COMPONENT CONNECTOR END VIEWS - INDEX (TRAX)**

Component View Reference

Door Component Views (Buick) **Door Component Views (Chevrolet)**

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](#)

- **If the specified state**

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

- **If not the specified state**

Refer to: Circuit/System Testing

- **If the specified state**

4. 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](#)

- **If the specified state**

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

- **If not the specified state**

Refer to: Circuit/System Testing

- **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.

2. Ignition/Vehicle & All vehicle systems » Off

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

4. Test for less than 10 Ω between the test points:Ground circuit terminal 8 & Ground

- **If 10 Ω or greater**

1. Ground Connection»Disconnect

2. Test for less than 2 Ω between the test points:Ground circuit terminal 8 @Component harness & Ground Connection

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

- **If less than 10 Ω**

5. Ignition » On / Vehicle » In Service Mode

6. 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 7 @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

- **If the specified state**

7. Connect a 3 A fused jumper wire between the test points:Signal circuit terminal 7 & Ground circuit terminal 8

8. 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 7 @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 Ω between the test points: Signal circuit terminal 7 @ & Signal circuit terminal 9 X1 @Control module harness

- If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
- If less than 2 Ω $\hat{A}$ » Replace the component:K84 Keyless Entry Control Module

- **If the specified state**

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

Component Testing

1. Ignition/Vehicle $\hat{A}$ » Off

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

3. Test for infinite resistance between the test points:Signal terminal 7 & Ground terminal 8 - The switch is in the open position.

- **If less than infinite resistance**

Replace the component:A23D Door Latch Assembly - Driver

- **If infinite resistance**

4. Test for less than 3 Ω between the test points:Signal terminal 7 & Ground terminal 8 - The switch is in the closed position.

- **If 3 Ω or greater**

Replace the component:A23D Door Latch Assembly - Driver

- **If less than 3 Ω**

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: ALL DOORS UNLOCK/LOCK 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 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+ - Body Control Module	B3125 02, B3130 02, B3135 02	B3125 02, B3130 02, B3135 02	-	-
Ground - 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+ - Body Control Module	Supplied from a fuse.
Ground - Body Control Module	Chassis Ground
ControlDriver Door Unlock	The output circuit is switched from ground to 12 V to activate the component.
ControlAll Doors Lock	The output circuit is switched from ground to 12 V to activate the component.
ControlPassenger Door Unlock	The output circuit is switched from ground to 12 V to activate the component.

Component	Description
A23D Door Latch Assembly - Driver	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).
A23P Door Latch Assembly - Passenger	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).
A23LR Door Latch Assembly - Left Rear	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).
A23RR Door Latch Assembly - Right Rear	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).

Component	Description
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 $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode

Conditions for Setting the DTC

- B3125 01, B3130 01, B3135 01 $\hat{A}$ »Control Circuit=Short to Voltage
- B3125 02, B3130 02, B3135 02 $\hat{A}$ »Control Circuit=Short to Ground
- B3125 02, B3130 02, B3135 02 $\hat{A}$ »B+ circuit@K9 Body Control Module=Short to Ground/Open/High Resistance

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 Schematics \(Buick\)](#) [Door Lock/Indicator Schematics \(Chevrolet\)](#)
- [Body Control System Schematics \(Buick\)](#) [Body Control System Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Door Component Views \(Buick\)](#) [Door Component Views \(Chevrolet\)](#)

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 $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
2. Operate the component:S13D Door Lock Switch - Driver $\hat{A}$ »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](#)

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

- **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

- **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 2 & Control circuit terminal 3
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

- **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 Ω between the test points:

- Control circuit terminal 3 @A23D Door Latch Assembly - Driver & Terminal 1 X6 @Control module harness
- Control circuit terminal 2 @A23D Door Latch Assembly - Driver & Terminal 4 X6@Control module harness
- If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
- **If less than 2 Ω**

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

Test 2

1. Ignition/Vehicle & All vehicle systems $\hat{A}$ » 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 - PassengerControl circuit terminal 7 & Control circuit terminal 8
- A23LR Door Latch Assembly - Left RearControl circuit terminal 2 & Control circuit terminal 3
- A23RR Door Latch Assembly - Right RearControl circuit terminal 7 & Control circuit terminal 8

4. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode

5. Operate the component:S13D Door Lock Switch - Driver $\hat{A}$ »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

- **If the test lamp does not turn On and Off**

7. Ignition/Vehicle $\hat{A}$ » Off

8. Disconnect the electrical connector:X6 K9 Body Control Module

9. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode

10. Test for less than 2 Ω between the test points:

- Control circuit terminal 3 @A23LR Door Latch Assembly - Left Rear & Terminal 2 X6 @Control module harness
- Control circuit terminal 2 @A23LR Door Latch Assembly - Left Rear & Terminal 4 X6@Control module harness
- Control circuit terminal 7 @A23P Door Latch Assembly - Passenger & Terminal 4 X6 @Control module harness
- Control circuit terminal 8 @A23P Door Latch Assembly - Passenger & Terminal 2 X6 @Control module harness
- Control circuit terminal 7 @A23RR Door Latch Assembly - Right Rear & Terminal A X6 @Control module harness
- Control circuit terminal 8 @A23RR Door Latch Assembly - Right Rear & Terminal 2 X6 @Control module harness
- If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
- **If less than 2 Ω**

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 $\hat{A}$ » Off
2. Disconnect the electrical connector: X2 & X6 K9 Body Control Module
3. Test for less than 10 Ω between the test points: Ground circuit terminal 3 X6 & Ground
 - **If 10 Ω or greater**
 1. Ground Connection $\hat{A}$ » Disconnect
 2. Test for less than 2 Ω between the test points: Ground circuit terminal 3 X6 & Ground Connection
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
4. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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 $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Test for less than 2 Ω between the test points: B+ circuit terminal 4 X2 & Output terminal @Fuse
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω ; $\hat{A}$ » 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 $\hat{A}$ » Off & Remove $\hat{A}$ » 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 $\hat{A}$ » Repair the short to ground on the circuit.
 - If infinite resistance $\hat{A}$ » Replace the component: A23 Door Latch Assembly
 - **If the test lamp turns On**
6. Ignition/Vehicle $\hat{A}$ » Off
7. Connect the electrical connector: X2 K9 Body Control Module
8. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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.
 - **If 1 V or less**
10. Ignition/Vehicle $\hat{A}$ » 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.

- **If infinite resistance**

12. Replace the component:K9 Body Control Module

Component Testing

1. Ignition/Vehicle Â» 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 2 & B+
 - A23P Door Latch Assembly - Passenger:Control terminal 7 & B+
 - A23LR Door Latch Assembly - Left Rear:Control terminal 2 & B+
 - A23RR Door Latch Assembly - Right Rear:Control terminal 7 & 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 3 & Ground
 - A23P Door Latch Assembly - Passenger:Control terminal 8 & Ground
 - A23LR Door Latch Assembly - Left Rear:Control terminal 3 & Ground
 - A23RR Door Latch Assembly - Right Rear:Control terminal 8 & 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

- **If not 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 DOOR UNLOCK/LOCK SWITCH

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 B3140 00

Driver Door Unlock Switch Circuit

DTC B3145 00

Passenger Door Unlock Switch Circuit

DTC B3150 00

Driver Door Lock Switch Circuit

DTC B3155 00

Passenger Door Lock Switch Circuit

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Signal terminal 4 @S13D Door Lock Switch - Driver	B3150 00	2	2	-
Signal terminal 2 @S13D Door Lock Switch - Driver	B3140 00	3	3	-
Signal terminal 4 @S13P Door Lock Switch - Passenger	B3155 00	4	4	-
Signal terminal 2 @S13P Door Lock Switch - Passenger	B3145 00	5	5	-
S13D Door Lock Switch - Driver - Ground	-	1	-	-
S13P Door Lock Switch - Passenger - Ground	-	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

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

Vehicle On

Conditions for Setting the DTC

B3140 00 Å»Driver Door Lock Switch Circuit=Short to Ground - For greater than 60 s

B3145 00Å»Passenger Door Unlock Switch Circuit=Short to Ground - For greater than 60 s

B3150 00Å»Driver Door Unlock Switch Circuit=Short to Ground - For greater than 60 s

B3155 00Å»Passenger Door Lock Switch Circuit=Short to Ground - For greater than 60 s

Actions Taken When the DTC Sets

B3140 00Å»Driver Door Lock Switch=Disabled

B3145 00Å»Passenger Door Unlock Switch=Disabled

B3150 00Å»Driver Door Unlock Switch=Disabled

B3155 00Å»Passenger Door 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 Schematics \(Buick\)](#)[Door Lock/Indicator Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Door Component Views \(Buick\)](#) [Door Component Views \(Chevrolet\)](#)

Electrical Information Reference

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

Scan Tool Reference

Circuit/System Verification

1. Ignition $\hat{\mathbf{A}}$ On / Vehicle $\hat{\mathbf{A}}$ 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
 - **If the specified state**
3. Operate the component:S13D Door Lock Switch - Driver $\hat{\mathbf{A}}$ 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
 - **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
 - **If the specified state**
5. Operate the component:S13P Door Lock Switch - Passenger $\hat{\mathbf{A}}$ 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
 - **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 $\hat{\mathbf{A}}$ Off
2. Disconnect the electrical connector:S13D Door Lock Switch - Driver
3. Test for less than 10 Ω between the test points:Ground circuit terminal 3 & Ground
 - **If 10 Ω or greater**
 1. Ground Connection $\hat{\mathbf{A}}$ Disconnect
 2. Test for less than 2 Ω between the test points:Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 Ω ; or greater $\hat{\mathbf{A}}$ Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{\mathbf{A}}$ Repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
4. Ignition $\hat{\mathbf{A}}$ On / Vehicle $\hat{\mathbf{A}}$ In Service Mode
5. Verify the scan tool parameter:Driver Door Lock Switch=Inactive
 - **If not the specified state**

1. Ignition/Vehicle $\hat{A}$ » 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 4 @Component harness & Ground
 - If less than infinite resistance $\hat{A}$ » Repair the short to ground on the circuit.
 - If infinite resistance $\hat{A}$ » Replace the component:K9 Body Control Module
- **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 Lock Switch=Lock
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Jumper wire(s)
 2. Disconnect the electrical connector: X2K9 Body Control Module
 3. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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 $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle $\hat{A}$ » Off
 6. Test for less than 2 Ω between the test points:Signal circuit terminal 2 @Component harness & Terminal 15 X2@Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Replace the component:K9 Body Control Module
 - **If the specified state**
8. Connect a 3 A fused jumper wire between the test points:Signal circuit terminal 2 & Ground circuit terminal 3
9. Verify the scan tool parameter:Driver Door Lock Switch=Unlock
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Jumper wire(s)
 2. Disconnect the electrical connector: X2 K9 Body Control Module
 3. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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 $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle $\hat{A}$ » Off
 6. Test for less than 2 Ω between the test points:Signal circuit terminal 2 @Component harness & Terminal 15 X2@Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Replace the component:K9 Body Control Module
 - **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 $\hat{A}$ » Off
2. Disconnect the electrical connector:S13P Door Lock Switch - Passenger

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

- **If 10 Ω or greater**

1. Ground Connection Â» Disconnect

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

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

- **If less than 10 Ω**

4. Ignition Â» On / Vehicle Â» In Service Mode

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

- **If not the specified state**

1. Ignition/Vehicle Â» Off

2. Disconnect the electrical connector: X1 or X7 @K9 Body Control Module

3. Test for infinite resistance between the test points:

- Signal circuit terminal 2 @Component harness & Ground
- Signal circuit terminal 4 @Component harness & Ground
- If less than infinite resistance Â» Repair the short to ground on the circuit.
- If infinite resistance Â» Replace the component:K9 Body Control Module

- **If the specified state**

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

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

- **If not the specified state**

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

2. Disconnect the electrical connector: X7K9 Body Control Module

3. Ignition Â» On / Vehicle Â» 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 Â» Repair the short to voltage on the circuit.
- If less than 1 V

5. Ignition/Vehicle Â» Off

6. Test for less than 2 Ω between the test points:Signal circuit terminal 4 @Component harness & Terminal 14 X7@Control module harness

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

- **If the specified state**

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

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

- **If not the specified state**

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

2. Disconnect the electrical connector: X1 K9 Body Control Module

3. Ignition Â» On / Vehicle Â» 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 Â» Repair the short to voltage on the circuit.
- If less than 1 V

5. Ignition/Vehicle Â» Off

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

- If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
- If less than 2 Ω $\hat{A}$ » Replace the component:K9 Body Control Module

- **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 $\hat{A}$ » 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 3 - Switch $\hat{A}$ »Not Pressed
 - Signal terminal 4 & Ground terminal 3 - Switch $\hat{A}$ »Not Pressed
 - **If less than infinite resistance**

Replace the component:S13 Door Lock Switch
 - **If infinite resistance**
4. Test for less than 3 Ω between the test points:Signal terminal 4 & Ground terminal 3 - Lock Switch $\hat{A}$ »Pressed
 - **If 3 Ω or greater**

Replace the component:S13 Door Lock Switch
 - **If less than 3 Ω**
5. Test for less than 3 Ω between the test points:Signal terminal 2 & Ground terminal 3 - Unlock Switch $\hat{A}$ »Pressed
 - **If 3 Ω or greater**

Replace the component:S13 Door Lock Switch
 - **If less than 3 Ω**
6. All OK.

Repair Instructions

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

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

DTC B3245: REAR CARGO DOOR LOCK 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

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Control - Relay Coil - Terminal 2	B3245 02	1	B3245 01	-
Control - Relay Coil - Terminal 1	-	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 Terminal R2 - 2	The output circuit is switched to 12 V to activate the component.
Control - Relay Coil Terminal R2 - 1	The output circuit is switched to ground to activate the component.

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.

Conditions for Running the DTC

KR95A Liftgate Unlatch Relay»The component is commanded On.

Conditions for Setting the DTC

- B3245 »Control Circuit=Short to Battery
- B3245 »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 R2 - 2 consecutive malfunction-free ignition cycles.

Reference Information

Schematic Reference

[Release Systems Schematics \(Buick\)](#)[Release Systems Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Front of Vehicle/Engine Compartment Component Views \(Buick\)](#) [Front of Vehicle/Engine Compartment Component Views \(Chevrolet\)](#)

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

Scan Tool Reference

[Control Module References](#)

[Circuit/System Verification](#)

1. Ignition $\hat{\mathbf{A}}$ On / Vehicle $\hat{\mathbf{A}}$ In Service Mode
2. Perform the scan tool control function:Liftgate Unlatch $\hat{\mathbf{A}}$ Unlatch

Verify the component produces a clicking sound:M30 Liftgate Latch

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

Refer to: Circuit/System Testing

- **If the component produces a sound**

3. All OK.

[Circuit/System Testing](#)

1. Ignition/Vehicle $\hat{\mathbf{A}}$ Off
2. Remove the component:KR95A Liftgate Unlatch Relay
3. Connect a test lamp between the test points:Control circuit terminal R2 - 2 & Ground
4. Ignition $\hat{\mathbf{A}}$ On / Vehicle $\hat{\mathbf{A}}$ In Service Mode
5. Perform the scan tool control function:Liftgate Unlatch $\hat{\mathbf{A}}$ Unlatch

Verify the test lamp turns On and Off.

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

1. Ignition/Vehicle $\hat{\mathbf{A}}$ Off & Remove $\hat{\mathbf{A}}$ Test lamp
2. Disconnect the electrical connector: X5 @K9 Body Control Module
3. Test for infinite resistance between the test points:Control circuit terminal R2 - 2@Relay Socket & Ground
 - If less than infinite resistance $\hat{\mathbf{A}}$ Repair the short to ground on the circuit.
 - If infinite resistance
4. Test for less than 2 Ω between the test points:Control circuit terminal R2 - 2 @Relay Socket & Terminal 11 X5 @Control module harness
 - If 2 Ω or greater $\hat{\mathbf{A}}$ Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{\mathbf{A}}$ Replace the component:K9 Body Control Module

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

1. Ignition/Vehicle $\hat{\mathbf{A}}$ Off & Remove $\hat{\mathbf{A}}$ Test lamp
2. Disconnect the electrical connector: X5 @K9 Body Control Module
3. Ignition $\hat{\mathbf{A}}$ On / Vehicle $\hat{\mathbf{A}}$ In Service Mode
4. Test for less than 1 V between the test points:Control circuit terminal R2 - 2 @Relay Socket & Ground
 - If 1 V or greater $\hat{\mathbf{A}}$ Repair the short to voltage on the circuit.
 - If less than 1 V $\hat{\mathbf{A}}$ Replace the component:K9 Body Control Module

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

6. Connect a test lamp between the test points: B+ circuit terminal R2 - 3 & Control circuit terminal R2 - 1

7. Perform the scan tool control function: Liftgate Unlatch » Unlatch

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: X5 @ 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 R2 - 1 @ Relay Socket & 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 Ω between the test points: Control circuit terminal R2 - 1 @ Relay Socket & Terminal 20 X5 @ Control module harness
 - If 2 Ω or greater » Repair the open/high resistance in the circuit.
 - If less than 2 Ω » 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: X5 @ K9 Body Control Module
3. Test for infinite resistance between the test points: Control circuit terminal R2 - 1 @ Relay Socket & Ground
 - If less than infinite resistance » Repair the short to ground on the circuit.
 - If infinite resistance » Replace the component: K9 Body Control Module

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

8. 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 and 110 Ω between the test points: Component terminal 85 and 86

- **If not between 70 and 110 Ω**

Replace the component: KR95A Liftgate Unlatch Relay

- **If between 70 and 110 Ω**

4. Test for infinite resistance between the test points:

- Component terminal 30 & 85
- Component terminal 30 & 86
- Component terminal 30 & 87
- Component terminal 30 & 87
- **If less than infinite resistance**

Replace the component: KR95A Liftgate Unlatch Relay

- **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 Ω between the test points: Component terminal 30 & 37

- **If 2 Ω or greater**

Replace the component: KR95A Liftgate Unlatch Relay

- **If less than 2 Ω**

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](#)

SYMPTOMS - VEHICLE ACCESS

Important Preliminary Checks Before Starting

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 following description and operations below in order to familiarize yourself with the system functions:

- [Power Door Locks Description and Operation](#)
- [Rear Hatch/Gate Description and Operation](#)
- [Door 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:

- [Power Door Locks Malfunction](#)
- [Door Ajar Indicator Malfunction](#)
- [Liftgate Release Malfunction](#)

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 - Exterior Driver Door Handle Switch	B3849 02	1	1	-
Signal - Exterior Passenger Door Handle Switch	B1474 02	2	2	-
Signal - Exterior Left Rear Door Handle Switch	B1534 02	3	3	-
Signal - Exterior Right Rear Door Handle Switch	B1535 02	4	4	-
Ground - A24D Door Handle Assembly - Driver Exterior	-	1	-	-
Ground - A24P Door Handle Assembly - Passenger Exterior	-	2	-	-
Ground - A24LR Door Handle Assembly - Left Rear Exterior	-	3	-	-
Ground - A24RR Door Handle Assembly - Right Rear Exterior	-	4	-	-
1. A24D Door Handle Assembly - Driver Exterior=Disabled 2. A24P Door Handle Assembly - Passenger Exterior=Disabled 3. A24LR Door Handle Assembly - Left Rear Exterior=Disabled 4. A24RR Door Handle Assembly - 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
A24D Door Handle Assembly - Driver Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
A24P Door Handle Assembly - Passenger Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
A24LR Door Handle Assembly - Left Rear Exterior	The switch has a normally open contact. When the switch is activated, the signal circuit to the control module is grounded.
A24RR Door Handle Assembly - 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.

Reference Information

Schematic Reference

[Door Lock/Indicator Schematics \(Buick\)](#)[Door Lock/Indicator Schematics \(Chevrolet\)](#)

COMPONENT CONNECTOR END VIEWS - INDEX (ENCORE), COMPONENT CONNECTOR END VIEWS - INDEX (TRAX)

Door Component Views (Buick) Door Component Views (Chevrolet)

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

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 - Test 1
 - **If the specified state**
3. Verify the scan tool parameter:Exterior Passenger Door Handle Switch=Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **If the specified state**
4. Operate the component:A24D Door Handle Assembly - Driver Exterior»Pressed
Verify the scan tool parameter:Exterior Driver Door Handle Switch=Active
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **If the specified state**
5. Operate the component:A24P Door Handle Assembly - Passenger Exterior»Pressed
Verify the scan tool parameter:Exterior Passenger Door Handle Switch=Active
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 1
 - **If the specified state**
6. Verify the scan tool parameter:Exterior Left Rear Door Handle Switch=Inactive
 - **If not the specified state**
Refer to: Circuit/System Testing - Test 2
7. Verify the scan tool parameter:Exterior Right Rear Door Handle Switch=Inactive
 - **If not the specified state**

- **If the specified state**

8. Operate the component:A24LR Door Handle Assembly - Left Rear ExteriorÂ»Pressed

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

- **If not the specified state**

Refer to: Circuit/System Testing - Test 2

- **If the specified state**

9. Operate the component:A24RR Door Handle Assembly - Right Rear ExteriorÂ»Pressed

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

- **If not the specified state**

Refer to: Circuit/System Testing - Test 2

- **If the specified state**

10. 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 Off and all vehicle systems Off.

2. Disconnect the appropriate electrical connector:A24D Door Handle Assembly - Driver ExteriororA24P Door Handle Assembly - Passenger Exterior

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

- **If 10 Ω or greater**

1. Ground ConnectionÂ»Disconnect

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

- If 2 Ω or greater Â» Repair the open/high resistance in the circuit.

- If less than 2 Ω Â» Repair the open/high resistance in the ground connection.

- **If less than 10 Ω**

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 3 @Component harness & Ground

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

- If infinite resistance Â» Replace the component:K84 Keyless Entry Control Module

- **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:Exterior Door Handle Switch Circuit=Active

- **If not the specified state**

1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » 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 $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle Off.
6. Test for less than 2 Ω between the test points:
 - Signal circuit terminal 3 @A24D Door Handle Assembly - Driver Exterior & Terminal 12 X2@Control module harness
 - Signal circuit terminal 3 @A24P Door Handle Assembly - Passenger Exterior & Terminal 11 X2@Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Replace the component:K84 Keyless Entry Control Module
- **If the specified state**
8. Test or replace the component:A24 Door Handle Assembly

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 $\hat{A}$ » Off
2. Disconnect the appropriate electrical connector:A24LR Door Handle Assembly - Left Rear ExteriororA24RR Door Handle Assembly - Right Rear Exterior
3. Test for less than 10 Ω between the test points:Ground circuit terminal 4 & Ground
 - **If 10 Ω or greater**
 1. Ground Connection $\hat{A}$ »Disconnect
 2. Test for less than 2 Ω between the test points:Ground circuit terminal 4 @Component harness & Ground Connection
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
4. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
5. Verify the scan tool parameter:Exterior Door Handle Switch Circuit=Inactive
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » 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 $\hat{A}$ » Repair the short to ground on the circuit.
 - If infinite resistance $\hat{A}$ » Replace the component:K84 Keyless Entry Control Module
 - **If the specified state**
6. Connect a 3 A fused jumper wire between the test points:Signal circuit terminal 1 & Ground circuit terminal 4
7. Verify the scan tool parameter:Exterior Door Handle Switch Circuit=Active
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » 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 Â» Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle Â» Off
6. Test for less than 2 Ω 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 Ω or greater Â» Repair the open/high resistance in the circuit.
 - If less than 2 Ω Â» Replace the component:K84 Keyless Entry Control Module
- **If the specified state**
8. Test or replace the component:A24 Door Handle Assembly

Component Testing

1. Ignition/Vehicle Â» Off
2. Disconnect the appropriate electrical connector:A24 Door Handle Assembly
3. Test for infinite resistance between the test points:
 - A24D Door Handle Assembly - Driver Exterior:Signal terminal 3 & Ground terminal 4 - Not Pressed
 - A24P Door Handle Assembly - Passenger Exterior:Signal terminal 3 & Ground terminal 4 - Not Pressed
 - A24LR Door Handle Assembly - Left Rear Exterior:Signal terminal 1 & Ground terminal 4 - Not Pressed
 - A24RR Door Handle Assembly - Right Rear Exterior:Signal terminal 1 & Ground terminal 4 - Not Pressed
 - **If less than infinite resistance**

Replace the component:A24 Door Handle Assembly
 - **If infinite resistance**
4. Test for less than 3 Ω between the test points:
 - A24D Door Handle Assembly - Driver Exterior:Signal terminal 3 & Ground terminal 4 - Pressed
 - A24P Door Handle Assembly - Passenger Exterior:Signal terminal 3 & Ground terminal 4 - Pressed
 - A24LR Door Handle Assembly - Left Rear Exterior:Signal terminal 1 & Ground terminal 4 - Pressed
 - A24RR Door Handle Assembly - Right Rear Exterior:Signal terminal 1 & Ground terminal 4 - Pressed
 - **If 3 Ω or greater**

Replace the component:A24 Door Handle Assembly
 - **If less than 3 Ω**
5. All OK.

Repair Instructions

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

- [Front Side Door Outside Handle Replacement \(Without ATH\)](#)[Front Side Door Outside Handle Replacement \(With ATH\)](#)

- [Rear Side Door Outside Handle Replacement \(Without ATH\)](#)[Rear Side Door Outside Handle Replacement \(With ATH\)](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

FUEL FILLER DOOR RELEASE MALFUNCTION (NO8)

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 - Terminal 1	B3125 02, B3130 02, B3135 02	1	B3125 01, B3130 01, B3135 01	-
Control Circuit - Terminal 2	B3125 02, B3130 02, B3135 02	1	B3125 01, B3130 01, B3135 01	-
1. M97 Fuel Fill Door Lock Actuator=Inoperative				

Circuit/System Description

For an overview of the component/system, refer to: [Fuel Fill Door Description and Operation \(NO8 Only\)](#).

Circuit	Description
Control - Terminal 1	The output circuit is switched from ground to 12 V to activate the component.
Control - Terminal 2	The output circuit is switched from ground to 12 V to activate the component.

Component	Description
M97 Fuel Fill Door Lock Actuator	The fuel fill door lock actuator is a bidirectional DC motor that locks/unlocks the door.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

Reference Information

Schematic Reference

[Door Lock/Indicator Schematics \(Buick\)](#)[Door Lock/Indicator Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Luggage Compartment/Rear of Vehicle Component Views \(Buick\)](#) [Luggage Compartment/Rear of Vehicle Component Views \(Chevrolet\)](#)

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 $\hat{\mathbf{A}}$ » On / Vehicle $\hat{\mathbf{A}}$ » In Service Mode
2. Operate the component:S13D Door Lock Switch - Driver $\hat{\mathbf{A}}$ »Lock

Verify the component works as specified: M97 Fuel Fill Door Lock Actuator =Locked

- **If not the specified state**

Refer to: Circuit/System Testing

- **If the specified state**

3. Operate the component:S13D Door Lock Switch - Driver $\hat{\mathbf{A}}$ »Unlock

Verify the component works as specified: M97 Fuel Fill Door Lock Actuator = Unlocked

- **If not the specified state**

Refer to: Circuit/System Testing

- **If the specified state**

4. All OK.

[Circuit/System Testing](#)

1. Ignition/Vehicle $\hat{\mathbf{A}}$ » Off
2. Disconnect the electrical connector: M97 Fuel Fill Door Lock Actuator
3. Connect a test lamp between the test points: Control circuit terminal 1 & Control circuit terminal 2
4. Ignition $\hat{\mathbf{A}}$ » On / Vehicle $\hat{\mathbf{A}}$ » In Service Mode
5. Perform the scan tool control function:All Doors Lock/Unlock $\hat{\mathbf{A}}$ »Driver Door Unlock/Passenger Door(s) Unlock

Verify the test lamp state:

Driver Door Unlock $\hat{\mathbf{A}}$ » Unlocked=Test lamp On

Passenger Door(s) Unlock $\hat{\mathbf{A}}$ » Locked=Test lamp On

- **If not the specified state**

1. Ignition/Vehicle $\hat{\mathbf{A}}$ » Off & Remove $\hat{\mathbf{A}}$ » Test lamp
2. Disconnect the electrical connector: X6 @K9 Body Control Module
3. Ignition $\hat{\mathbf{A}}$ » On / Vehicle $\hat{\mathbf{A}}$ » In Service Mode
4. Test for less than 1 V between the test points:
 - Control circuit terminal 1 @Component harness & Ground
 - Control circuit terminal 2 @Component harness & Ground
 - If 1 V or greater $\hat{\mathbf{A}}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
5. Ignition/Vehicle $\hat{\mathbf{A}}$ » Off
6. Test for infinite resistance between the test points:

- Control circuit terminal 1 @Component harness & Ground
- Control circuit terminal 2 @Component harness & Ground
- If less than infinite resistance $\hat{A}$ » Repair the short to ground on the circuit.
- If infinite resistance

7. Test for less than 2 Ω between the test points:

- Control circuit terminal 1 @Component harness & Terminal 1 @ Control module harness
- Control circuit terminal 2 @Component harness & Terminal 4 @ Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - Refer to: **Power Door Locks Malfunction**

- **If the specified state**

6. Test or replace the component: M97 Fuel Fill Door Lock Actuator

Component Testing

1. Ignition/Vehicle $\hat{A}$ » Off
2. Disconnect the electrical connector: M97 Fuel Fill Door Lock Actuator
3. Connect a 20 A fused jumper wire between the test points: Control terminal 1 & 12 V

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: Control terminal 2 & Ground

Reverse the jumper wires 2 times between the terminals.

Verify the component works as specified: M97 Fuel Fill Door Lock Actuator = Lock/Unlock

- **If not the specified state**

Replace the component: M97 Fuel Fill Door Lock Actuator

- **If not the specified state**

5. All OK.

Repair Instructions

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

Fuel Tank Filler Door Latch Housing Replacement (Buick) **Fuel Tank Filler Door Latch Housing Replacement (Chevrolet)**

LIFTGATE RELEASE 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
B+ - Relay Switch	2	2	-	-
Signal - S46B Liftgate Unlatch Switch	1	1	1	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Control - M30 Liftgate Latch	2	2	2	-
Control - Relay Coil - Terminal R2 - 1	B3245 02	2	B3245 01	-
Control - Relay Coil - Terminal R2 - 2	-	2	-	-
Ground - M30 Liftgate Latch	-	2	-	-
Ground - S46B Liftgate Unlatch Switch	-	1	-	-
1. S46B Liftgate Unlatch Switch - Disabled 2. M30 Liftgate Latch - Inoperative				

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.

Reference Information

Schematic Reference

[Release Systems Schematics \(Buick\)](#) [Release Systems Schematics \(Chevrolet\)](#)

Connector End View Reference

- [COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)
- [Inline Harness Connector End Views \(Buick\)](#) [Inline Harness Connector End Views \(Buick\)](#) [Inline Harness Connector End Views \(Chevrolet\)](#) [Inline Harness Connector End Views \(Chevrolet\)](#) [Inline Harness Connector End Views \(Chevrolet\)](#)

Component View Reference

- [Front of Vehicle/Engine Compartment Component Views \(Buick\)](#) [Front of Vehicle/Engine Compartment Component Views \(Chevrolet\)](#)

- [Luggage Compartment/Rear of Vehicle Component Views \(Buick\)](#), [Luggage Compartment/Rear of Vehicle Component Views \(Chevrolet\)](#).

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 $\hat{\mathbf{A}}$ » On / Vehicle $\hat{\mathbf{A}}$ » 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
 - **If the specified state**
3. Operate the component:S46B Liftgate Unlatch Switch $\hat{\mathbf{A}}$ »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
 - **If the specified state**
4. Perform the scan tool control function:Liftgate Unlatch $\hat{\mathbf{A}}$ »Unlatch
Verify the component produces a clicking sound:M30 Liftgate Latch
 - **If the component does not produce a sound**
Refer to: Circuit/System Testing - Test 2
 - **If the component produces a sound**
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 $\hat{\mathbf{A}}$ » Off
2. Disconnect the electrical connector:S46B Liftgate Unlatch Switch
3. Test for less than 10 Ω between the test points:Ground circuit terminal 2 & Ground
 - **If 10 Ω or greater**
 1. Ground Connection $\hat{\mathbf{A}}$ »Disconnect
 2. Test for less than 10 Ω between the test points:Ground circuit terminal 2 @Component harness & Ground Connection

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

Test 2

1. Ignition/Vehicle $\hat{A}$ » Off
2. Remove the component:KR95A Liftgate Unlatch Relay
3. Connect a test lamp between the test points:Control circuit terminal R2-1 & Ground
4. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
5. Perform the scan tool control function:Liftgate Unlatch $\hat{A}$ »Unlatch

Verify the test lamp turns On and Off.

- **If the test lamp is always Off**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Disconnect the electrical connector: X5 @K9 Body Control Module
 3. Test for infinite resistance between the test points:Control circuit terminal R2-1 @Relay Socket & Ground
 - If less than infinite resistance $\hat{A}$ » Repair the short to ground on the circuit.
 - If infinite resistance
 4. Test for less than 2 Ω between the test points:Control circuit terminal R2-1@Relay Socket & Terminal 20 X5 @Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.

- If less than 2 Ω $\hat{A}$ » Replace the component:K9 Body Control Module
 - **If the test lamp is always On**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Disconnect the electrical connector: X5 @K9 Body Control Module
 3. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
 4. Test for less than 1 V between the test points:Control circuit terminal R2-1 @Relay Socket & Ground
 - If 1V or greater $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V $\hat{A}$ » Replace the component:K9 Body Control Module
 - **If the test lamp turns On and Off**
6. Connect a test lamp between the test points:Control circuit terminal R2-2 & B+
 7. Perform the scan tool control function:Liftgate Unlatch $\hat{A}$ »Unlatch

Verify the test lamp turns On and Off.

- **If the test lamp is always Off**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Disconnect the electrical connector: X5 @K9 Body Control Module
 3. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
 4. Test for less than 1 V between the test points: Control circuit terminal R2-2 @ Relay Socket & Ground
 - If 1 V or greater $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle $\hat{A}$ » Off
 6. Test for less than 2 Ω between the test points:Control circuit terminal R2-2 @Relay Socket & Terminal 11 X5 @Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Replace the component:K9 Body Control Module
 - **If the test lamp is always On**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Disconnect the electrical connector: X5 @K9 Body Control Module
 3. Test for infinite resistance between the test points:Control circuit terminal R2-2 @Relay Socket & Ground
 - If less than infinite resistance $\hat{A}$ » Repair the short to ground on the circuit.
 - If infinite resistance $\hat{A}$ » Replace the component:K9 Body Control Module
 - **If the test lamp turns On and Off**
8. Verify a test lamp turns On between the test points:B+ circuit terminal R2-3 & Ground
 - **If the test lamp does not turn On and the circuit fuse is OK**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Test for less than 2 Ω between the test points:B+ circuit terminal R2-3 @Relay Socket & Output terminal@ F13DAFuse
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » 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 $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Test for infinite resistance between the test points:B+ circuit terminal R2-3 & Ground
 - If less than infinite resistance $\hat{A}$ » 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 R2-3 @Relay Socket & Ground

- If less than infinite resistance Â» 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 R2-5 & Ground circuit terminal
 8. Ignition Â» On / Vehicle Â» In Service Mode
 9. Perform the scan tool control function:Liftgate UnlatchÂ»Unlatch

Verify the test lamp turns On and Off.

- If the test lamp does not turn On and Off Â» Test or replace the component:KR95A Liftgate Unlatch Relay
 - If the test lamp turns On and Off Â» Test or replace the component:M30 Liftgate Latch
- **If the test lamp turns On**
9. Momentarily connect a 10 A fused jumper wire between the test points:B+ circuit terminal R2-3 & Control circuit terminal R2-5

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

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

10. Ignition/Vehicle & All vehicle systems Â» Off
11. Install the component:KR95A Liftgate Unlatch Relay
12. Disconnect the electrical connector:M30 Liftgate Latch
13. Test for less than 10 Ω between the test points:Ground circuit terminal 1 & Ground
 - **If 10 Ω or greater**
 1. Ground ConnectionÂ»Disconnect
 2. Test for less than 2 Ω between the test points:Ground circuit terminal 1 @Component harness & Ground Connection
 - If 2 Ω or greater Â» Repair the open/high resistance in the circuit.
 - If less than 2 Ω Â» Repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
14. Connect a test lamp between the test points:Control circuit terminal 1 & Ground circuit terminal 3
15. Ignition Â» On / Vehicle Â» In Service Mode
16. Perform the scan tool control function:Liftgate UnlatchÂ»Unlatch

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

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

17. Test or replace the component:M30 Liftgate Latch

Relay Test

1. Ignition/Vehicle $\hat{A}$ » Off
2. Remove the component:KR95A Liftgate Unlatch Relay
3. Test for 70 and 110 Ω between the test points:Component terminal 85 & 86

- **If not between 70 and 110 Ω**

Replace the component:KR95A Liftgate Unlatch Relay

- **If between 70 and 110 Ω**

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

- **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 Ω between the test points:Component terminal 30 & 87

- **If 2 Ω or greater**

Replace the component:KR95A Liftgate Unlatch Relay

- **If less than 2 Ω**

7. All OK.

M30 Liftgate Latch-Test

1. Ignition/Vehicle $\hat{A}$ » 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 10 A fused jumper wire between the test points:Control terminal 3 & 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

- **If the component turns On and Off**

5. All OK.

S46B Liftgate Unlatch Switch-Test

1. Ignition/Vehicle $\hat{A}$ » Off
2. Disconnect the electrical connector:S46B Liftgate Unlatch Switch
3. Test for infinite resistance between the test points:Signal terminal 1 & Ground terminal 2 - SwitchNot Pressed

- **If less than infinite resistance**

Replace the component:S46B Liftgate Unlatch Switch

- If infinite resistance

4. Test for less than 3 Ω between the test points: Signal terminal 1 & Ground terminal 2 - Switch $\hat{A}$ » Pressed

- If 3 Ω or greater

Replace the component: S46B Liftgate Unlatch Switch

- If less than 3 Ω

5. All OK.

Repair Instructions

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

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

DOOR AJAR INDICATOR 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
Driver Door Ajar Switch Signal	1	2	2	-
Driver Door Latch Ground	-	2	-	-
Left Rear Door Ajar Switch Signal	1	4	4	-
Left Rear Door Latch Ground	-	4	-	-
Liftgate Ajar Switch Signal	1	6	6	-
Liftgate Latch Ground	-	6	-	-
Passenger Door Ajar Switch Signal	1	3	3	-
Passenger Door Latch Ground	-	3	-	-
Right Rear Door Ajar Switch Signal	1	5	5	-
Right Rear Door Latch Ground	-	5	-	-
1. Ajar Indicator Always Illuminated 2. Ajar Indicator Inoperative When Driver Door Is Open 3. Ajar Indicator Inoperative When Passenger Door Is Open 4. Ajar Indicator Inoperative When Left Rear Door Is Open 5. Ajar Indicator Inoperative When Right Rear Door Is Open 6. Ajar Indicator Inoperative When Liftgate Is Open				

Circuit/System Description

If the vehicle is equipped with power windows without the express features or with manual crank windows, the body control module (BCM) will provide a 12 V signal to each door ajar switch via the door ajar switch signal circuit. The door ajar switches are normally open when the door is fully closed. When a door is opened, the door ajar switch contacts close providing a path to ground. The instrument cluster receives a serial data message from the BCM indicating the door ajar status, the instrument cluster will then display the door ajar icon.

If the vehicle is equipped with express power windows, the window motors or the 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 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 or the window switch 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 icon.

Reference Information

Schematic Reference

Door Lock/Indicator Schematics (Buick)Door Lock/Indicator Schematics (Chevrolet)

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX (ENCORE) COMPONENT CONNECTOR END VIEWS - INDEX (TRAX)

Description and Operation

Door Ajar Indicator Description and Operation

Electrical Information Reference

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

Scan Tool Reference

Control Module References for scan tool information

Circuit/System Verification

1. Ignition ON.
2. Verify the appropriate scan tool Door Ajar Switch parameter changes between Inactive and Active when opening and closing the driver door, the passenger door, the left rear door and right rear door.
 - **If any parameter does not change**

Refer to Circuit/System Testing - Door Ajar Malfunction.
 - **If all the parameters change**
3. Verify the scan tool Rear Closure Ajar Switch parameter changes between Inactive and Active when opening and closing the liftgate.
 - **If the parameter does not change**

Refer to Circuit/System Testing - Liftgate Ajar Malfunction.
 - **If the parameter changes**
4. All OK.

Circuit/System Testing

Door Ajar Malfunction

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the appropriate A23 Door 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 ground circuit terminal listed below and ground.
 - A23D Door Latch Assembly-Driver - ground circuit terminal 8
 - A23P Door Latch Assembly-Passenger - ground circuit terminal 3
 - A23LR Door Latch Assembly-Left Rear - ground circuit terminal 8
 - A23RR Door Latch Assembly-Right Rear - ground circuit terminal 3
 - **If 10 Ω or greater**
 1. Ignition OFF.
 2. Test for less than 2 Ω in the ground circuit end to end.
 - If 2 Ω or greater, repair the open/high resistance in the circuit.
 - If less than 2 Ω , repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
3. Ignition ON.
4. Verify the appropriate scan tool Door Ajar Switch parameter is Inactive.
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the appropriate component listed below:
 - M74D Window Motor-Driver (AXG)
 - S79D Window Switch-Driver (AEC)
 - M74P Window Motor-Passenger (AEF)
 - S79P Window Switch-Passenger (AED)
 - M74LR Window Motor-Left Rear (AER)
 - S79LR Window Switch-Left Rear (AEQ)
 - M74RR Window Motor-Right Rear (AER)
 - S79RR Window Switch-Right Rear (AEQ)
 - K9 Body Control Module (A55, A66, A33 or crank windows)
 2. Test for infinite resistance between the signal circuit terminal listed below and ground.
 - A23D Door Latch Assembly-Driver - signal circuit terminal 6
 - A23P Door Latch Assembly-Passenger - signal circuit terminal 1
 - A23LR Door Latch Assembly-Left Rear - signal circuit terminal 6
 - A23RR Door Latch Assembly-Right Rear - signal circuit terminal 1
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the appropriate component.
 - **If Inactive**
5. Install a 3 A fused jumper wire between the signal circuit terminal listed below and ground.
 - A23D Door Latch Assembly-Driver - signal circuit terminal 6
 - A23P Door Latch Assembly-Passenger - signal circuit terminal 1
 - A23LR Door Latch Assembly-Left Rear - signal circuit terminal 6
 - A23RR Door Latch Assembly-Right Rear - signal circuit terminal 1
6. Verify the scan tool Door Ajar Switch parameter is Active.
 - **If not Active**
 1. Ignition OFF, remove the fused jumper wire, disconnect the harness connector at the appropriate component listed below, ignition ON.
 - M74D Window Motor-Driver (AXG)
 - S79D Window Switch-Driver (AEC)
 - M74P Window Motor-Passenger (AEF)
 - S79P Window Switch-Passenger (AED)

- M74LR Window Motor-Left Rear (AER)
 - S79LR Window Switch-Left Rear (AEQ)
 - M74RR Window Motor-Right Rear (AER)
 - S79RR Window Switch-Right Rear (AEQ)
 - K9 Body Control Module (A55, A66, A33 or crank windows)
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 appropriate component.
 - **If Active**
7. Test or replace the A23 Door Latch Assembly.

Liftgate Ajar Switch

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the M30 Liftgate Latch. 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.
 - **If less than 10 Ω**
3. Ignition ON.
4. Verify the scan tool Rear Closure Ajar Switch parameter is Inactive.
 - **If not Inactive**
 1. Ignition OFF, disconnect the harness connector at the K9 Body 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 K9 Body Control Module.
 - **If Inactive**
5. Install a 3 A fused jumper wire between the signal circuit terminal 2 and ground circuit terminal 1.
6. Verify the scan tool Rear Closure Ajar Switch parameter is Active.
 - **If not Active**
 1. Ignition OFF, remove the fused jumper wire, disconnect the harness connector at the K9 Body 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 K9 Body Control Module.
 - **If Active**
7. Test or replace the M30 Liftgate Latch.

Component Testing

1. Ignition OFF, disconnect the harness connector at the appropriate A23 Door Latch Assembly.
2. Test for infinite resistance between the terminals listed below with the switch in the open position.

- A23D Door Latch Assembly-Driver - signal terminal 6 and ground terminal 8
- A23P Door Latch Assembly-Passenger - signal terminal 1 and ground terminal 3
- A23LR Door Latch Assembly-Left Rear - signal terminal 6 and ground terminal 8
- A23RR Door Latch Assembly-Right Rear - signal terminal 1 and ground terminal 3
- **If less than infinite resistance**

Replace the A23 Door Latch Assembly.

- **If infinite resistance**

3. Test for less than 3 Ω between the terminals listed below with the switch in the closed position.

- A23D Door Latch Assembly-Driver - signal terminal 6 and ground terminal 8
- A23P Door Latch Assembly-Passenger - signal terminal 1 and ground terminal 3
- A23LR Door Latch Assembly-Left Rear - signal terminal 6 and ground terminal 8
- A23RR Door Latch Assembly-Right Rear - signal terminal 1 and ground terminal 3
- **If 3 Ω or greater**

Replace the A23 Door Latch Assembly.

- **If less than 3 Ω**

4. All OK

Repair Instructions

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

- [Front Side Door Latch Replacement](#)
- [Rear Side Door Latch Replacement](#)
- [Front Side Door Window Switch Replacement \(Driver Side, Buick\)](#), [Front Side Door Window Switch Replacement \(Passenger Side, Buick\)](#), [Front Side Door Window Switch Replacement \(Driver Side, Chevrolet\)](#), [Front Side Door Window Switch Replacement \(Passenger Side, Chevrolet\)](#)
- [Rear Side Door Window Switch Replacement](#)
- [Front Side Door Window Regulator Motor Replacement](#)
- [Rear Side Door Window Regulator Motor Replacement](#)
- [Liftgate Latch Replacement](#)
- [Control Module References](#) for body control module replacement, programming and setup

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	1	1	1	-
Ground	-	1	-	-
1. B29D Door Lock Key Cylinder Switch - Driver=Disabled				

Circuit/System Description

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). The assembly also contains a normally open door ajar switch that closes as soon as the door is not fully closed.
S79D Window Switch - Driver	The assembly on the driver side has one switch for the driver window and one switch for the passenger window. Each switch has 2 outputs, one for window down and one for window up. The motors contain electronics that interpret the up/down signals and actuate the motors accordingly. The circuits for the motor in the driver door are directly wired to the motor. The circuits for the window in the passenger door first go to the passenger window switch and then to the motor. In the inactive position the switch on the passenger side passes on the two control signals as they are. When actuated, it switches one of the control circuits to 12 V.
K9 Body Control Module	The module controls various vehicle functions like lighting, central door locking, power windows, etc.

Reference Information

Schematic Reference

[Door Lock/Indicator Schematics \(Buick\)](#) [Door Lock/Indicator Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#), [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Door Component Views \(Buick\)](#) [Door Component Views \(Chevrolet\)](#)

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. Operate the component: S13D Door Lock Switch - Driver » Unlock
2. Operate the component: B29D Door Lock Key Cylinder Switch - Driver » Lock

3. Verify the component activates: A23LR Door Latch Assembly - Left Rear/A23P Door Latch Assembly - Passenger/A23RR Door Latch Assembly - Right Rear

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

Refer to: Circuit/System Testing

- **If all functions work properly**

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.
2. Ignition/Vehicle & All vehicle systems $\hat{\text{A}}$ » Off
3. Disconnect the electrical connector: A23D Door Latch Assembly - Driver
4. Test for less than 10 Ω between the test points: Ground circuit terminal 8 & Ground
 - **If 10 Ω or greater**
 1. Ground Connection $\hat{\text{A}}$ » Disconnect
 2. Test for less than 2 Ω between the test points: Ground circuit terminal 8 @Component harness & Ground Connection
 - If 2 Ω or greater $\hat{\text{A}}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{\text{A}}$ » Repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
5. Ignition $\hat{\text{A}}$ » On / Vehicle $\hat{\text{A}}$ » In Service Mode
6. Test for greater than 10 V between the test points: Signal circuit terminal 4 & Ground circuit terminal 8
 - **If 10 V or less**
 1. Ignition/Vehicle $\hat{\text{A}}$ » Off
 2. Disconnect the electrical connector:
 - S79D Window Switch - Driver
 - K9 Body Control Module
 3. Test for infinite resistance between the test points: Signal circuit terminal 4 @Component harness & Ground
 - If less than infinite resistance $\hat{\text{A}}$ » Repair the short to ground on the circuit.
 - If infinite resistance
 4. Test for less than 2 Ω between the test points:
 - Signal circuit terminal 4 @Component harness & Signal circuit terminal 7 @S79D Window Switch - Driver
 - Signal circuit terminal 4 @Component harness & Signal circuit terminal 6 X6@K9 Body Control Module
 - If 2 Ω or greater $\hat{\text{A}}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{\text{A}}$ » Replace the component: S79D Window Switch - Driver/K9 Body Control Module
 - **If greater than 10 V**
7. Test or replace the component: A23D Door Latch Assembly - Driver

Component Testing

1. Ignition/Vehicle $\hat{\text{A}}$ » 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 8 - The switch is in the open position.

- **If less than infinite resistance**

Replace the component:A23D Door Latch Assembly - Driver

- **If infinite resistance**

4. Test for less than 3 Ω between the test points:Signal terminal 4 & Ground terminal 8 - The switch is in the closed position.

- **If 3 Ω or greater**

Replace the component:A23D Door Latch Assembly - Driver

- **If less than 3 Ω**

5. All OK.

Repair Instructions

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

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

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+ - Body Control Module	B3125 02, B3130 02, B3135 02	B3125 02, B3130 02, B3135 02	-	-
Signal terminal 4 @S13D Door Lock Switch - Driver	B3150 00	2	2	-
Signal terminal 2 @S13D Door Lock Switch - Driver	B3140 00	3	3	-
Signal terminal 4 @S13P Door Lock Switch - Passenger	B3155 00	4	4	-
Signal terminal 2 @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	-

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Short to Voltage
Control - A23RR Door Latch Assembly - Right Rear	B3125 02, B3130 02, B3135 02	10	B3125 01, B3130 01, B3135 01	-
S13P Door Lock Switch - Passenger - Ground	-	6	-	-
Ground - S13D Door Lock Switch - Driver	-	1	-	-
Ground - 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+ - Body Control Module	Supplied from a fuse.
Signal	The control module input circuit has an internal resistance connected to 12 V.
ControlDriver Door Unlock	The output circuit is switched from ground to 12 V to activate the component.
ControlAll Doors Lock	The output circuit is switched from ground to 12 V to activate the component.
ControlPassenger 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 - Body Control Module	Chassis Ground

Component	Description
A23D Door Latch Assembly - Driver	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).
A23P Door Latch Assembly - Passenger	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).
A23LR Door Latch Assembly - Left Rear	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).
A23RR Door Latch Assembly - Right Rear	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).

Component	Description
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 Schematics \(Buick\)](#) [Door Lock/Indicator Schematics \(Chevrolet\)](#)
- [Body Control System Schematics \(Buick\)](#) [Body Control System Schematics \(Chevrolet\)](#)

Connector End View Reference

[COMPONENT CONNECTOR END VIEWS - INDEX \(ENCORE\)](#) [COMPONENT CONNECTOR END VIEWS - INDEX \(TRAX\)](#)

Component View Reference

[Door Component Views \(Buick\)](#) [Door Component Views \(Chevrolet\)](#)

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 $\hat{A}$ » On / Vehicle $\hat{A}$ » 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
 - **If the specified state**
3. Operate the component:S13D Door Lock Switch - Driver $\hat{A}$ »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
 - **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

- **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

- **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

- **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 Ω between the test points: Ground circuit terminal 3 & Ground

- **If 10 Ω or greater**

1. Ground Connection » Disconnect

2. Test for less than 2 Ω between the test points:Ground circuit terminal 3 @Component harness & Ground Connection
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Repair the open/high resistance in the ground connection.
- **If less than 10 Ω**
4. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
5. Verify the scan tool parameter:Driver Door Lock SwitchorPassenger Door Lock Switch=Inactive
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » Off
 2. Disconnect the electrical connector: X1 /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 4 @Component harness & Ground
 - If less than infinite resistance $\hat{A}$ » Repair the short to ground on the circuit.
 - If infinite resistance $\hat{A}$ » Replace the component:K9 Body Control Module
 - **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 Lock SwitchorPassenger Door Lock Switch=Unlock
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Jumper wire(s)
 2. Disconnect the electrical connector: X1 or X2 @K9 Body Control Module
 3. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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 $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle $\hat{A}$ » Off
 6. Test for less than 2 Ω between the test points:
 - Signal circuit terminal 2 @S13D Door Lock Switch - Driver & Terminal 15 X2 @Control module harness
 - Signal circuit terminal 2 @S13P Door Lock Switch - Passenger & Terminal 14 X1 @Control module harness
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Replace the component:K9 Body Control Module
 - **If the specified state**
8. Connect a 3 A fused jumper wire between the test points:Signal circuit terminal 4 & Ground circuit terminal 3
9. Verify the scan tool parameter:Driver Door Lock SwitchorPassenger Door Lock Switch=Lock
 - **If not the specified state**
 1. Ignition/Vehicle $\hat{A}$ » Off & Remove $\hat{A}$ » Jumper wire(s)
 2. Disconnect the electrical connector:X2 or X7@K9 Body Control Module
 3. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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 $\hat{A}$ » Repair the short to voltage on the circuit.
 - If less than 1 V
 5. Ignition/Vehicle $\hat{A}$ » Off
 6. Test for less than 2 Ω between the test points:

- Signal circuit terminal 4 @S13D Door Lock Switch - Driver & Terminal 19 X2 @Control module harness
- Signal circuit terminal 4 @S13P Door Lock Switch - Passenger & Terminal 14 X7 @Control module harness
- If $2\ \Omega$ or greater $\hat{\wedge}$ » Repair the open/high resistance in the circuit.
- If less than $2\ \Omega$ $\hat{\wedge}$ » Replace the component:K9 Body Control Module

- **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 $\hat{\wedge}$ » Off
2. Disconnect the electrical connector:A23D Door Latch Assembly - Driver
3. Connect a test lamp between the test points:Control circuit terminal 2 & Control circuit terminal 3
4. Ignition $\hat{\wedge}$ » On / Vehicle $\hat{\wedge}$ » In Service Mode
5. Operate the component:S13D Door Lock Switch - Driver $\hat{\wedge}$ »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

- **If the test lamp does not turn On and Off**

7. Ignition/Vehicle $\hat{\wedge}$ » Off
8. Disconnect the electrical connector: X6 @K9 Body Control Module
9. Test for less than $2\ \Omega$ between the test points:
 - Control circuit terminal 3 @A23D Door Latch Assembly - Driver & Terminal 1 X6 @Control module harness
 - Control circuit terminal 2 @A23D Door Latch Assembly - Driver & Terminal 4 X6 @Control module harness
 - If $2\ \Omega$ or greater $\hat{\wedge}$ » Repair the open/high resistance in the circuit.
 - **If less than $2\ \Omega$**

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

Test 3

1. Ignition/Vehicle & All vehicle systems $\hat{\wedge}$ » 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 - PassengerControl circuit terminal 7 & Control circuit terminal 8
 - A23LR Door Latch Assembly - Left RearControl circuit terminal 2 & Control circuit terminal 3
 - A23RR Door Latch Assembly - Right RearControl circuit terminal 7 & Control circuit terminal 8
4. Ignition $\hat{\wedge}$ » On / Vehicle $\hat{\wedge}$ » In Service Mode
5. Operate the component:S13D Door Lock Switch - Driver $\hat{\wedge}$ »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

- **If the test lamp does not turn On and Off**

7. Ignition/Vehicle $\hat{A}$ » Off
8. Disconnect the electrical connector: X6 @K9 Body Control Module
9. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » In Service Mode
10. Test for less than 2 Ω between the test points:
 - Control circuit terminal 3 @A23LR Door Latch Assembly - Left Rear & Terminal 2 X6 @Control module harness
 - Control circuit terminal 2 @A23LR Door Latch Assembly - Left Rear & Terminal 4 X6 @Control module harness
 - Control circuit terminal 7 @A23P Door Latch Assembly - Passenger & Terminal 4 X6 @Control module harness
 - Control circuit terminal 8 @A23P Door Latch Assembly - Passenger & Terminal 2 X6 @Control module harness
 - Control circuit terminal 7 @A23RR Door Latch Assembly - Right Rear & Terminal 4 X6 @Control module harness
 - Control circuit terminal 8 @A23RR Door Latch Assembly - Right Rear & Terminal 2 X6 @Control module harness
 - If 2 or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - **If less than 10 Ω**
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 $\hat{A}$ » Off
2. Disconnect the electrical connector: X2 & X6 @K9 Body Control Module
3. Test for less than 10 Ω between the test points:Ground circuit terminal 3 X6 & Ground
 - **If 10 Ω or greater**
 1. Ground Connection $\hat{A}$ »Disconnect
 2. Test for less than 2 Ω between the test points:Ground circuit terminal 3 X6 & Ground Connection
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » Repair the open/high resistance in the ground connection.
 - **If less than 10 Ω**
4. Ignition $\hat{A}$ » On / Vehicle $\hat{A}$ » 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 $\hat{A}$ » Off & Remove $\hat{A}$ » Test lamp
 2. Test for less than 2 Ω between the test points: B+ circuit terminal 4 X2 & Output terminal @Fuse
 - If 2 Ω or greater $\hat{A}$ » Repair the open/high resistance in the circuit.
 - If less than 2 Ω $\hat{A}$ » 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 $\hat{A}$ » Off & Remove $\hat{A}$ » 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 $\hat{\wedge}$ » Repair the short to ground on the circuit.
- If infinite resistance $\hat{\wedge}$ » Replace the component:A23 Door Latch Assembly

• **If the test lamp turns On**

6. Ignition/Vehicle $\hat{\wedge}$ » Off

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

8. Ignition $\hat{\wedge}$ » On / Vehicle $\hat{\wedge}$ » 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.

• **If 1 V or less**

10. Ignition/Vehicle $\hat{\wedge}$ » 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.

• **If infinite resistance**

12. Replace the component:K9 Body Control Module

Component Testing

S13 Door Lock Switch - Test

1. Ignition/Vehicle $\hat{\wedge}$ » 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 3 - Switch $\hat{\wedge}$ »Not Pressed
- Signal terminal 4 & Ground terminal 3 - Switch $\hat{\wedge}$ »Not Pressed
- **If less than infinite resistance**

Replace the component:S13 Door Lock Switch

• **If infinite resistance**

4. Test for less than 3 Ω between the test points:Signal terminal 4 & Ground terminal 3 - LockSwitch $\hat{\wedge}$ »Pressed

- **If 3 Ω or greater**

Replace the component:S13 Door Lock Switch

• **If less than 3 Ω**

5. Test for less than 3 Ω between the test points:Signal terminal 2 & Ground terminal 3 - UnlockSwitch $\hat{\wedge}$ »Pressed

- **If 3 Ω or greater**

Replace the component:S13 Door Lock Switch

- **If less than 3 Ω**

6. All OK.

A23 Door Latch Assembly

1. Ignition/Vehicle $\hat{A}$ » 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 2 & B+
 - A23P Door Latch Assembly - Passenger:Control terminal 7 & B+
 - A23LR Door Latch Assembly - Left Rear:Control terminal 2 & B+
 - A23RR Door Latch Assembly - Right Rear:Control terminal 7 & 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 3 & Ground
 - A23P Door Latch Assembly - Passenger:Control terminal 8 & Ground
 - A23LR Door Latch Assembly - Left Rear:Control terminal 3 & Ground
 - A23RR Door Latch Assembly - Right Rear:Control terminal 8 & 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

- **If not 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 \(Buick\)](#)[Door Lock Switch Replacement - Driver Side \(Chevrolet\)](#)
- [Door Lock Switch Replacement - Passenger Front \(Buick\)](#)[Door Lock Switch Replacement - Passenger Front \(Chevrolet\)](#)
- [Rear Side Door Latch Replacement](#)
- [Front Side Door Latch Replacement](#)
- For control module replacement, programming, and setup refer to: [Control Module References](#)

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.			

Step	Action	Yes	No
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 Access
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
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

Step	Action	Yes	No
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
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

Step	Action	Yes	No
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
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

Step	Action	Yes	No
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
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.

Step	Action	Yes	No
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

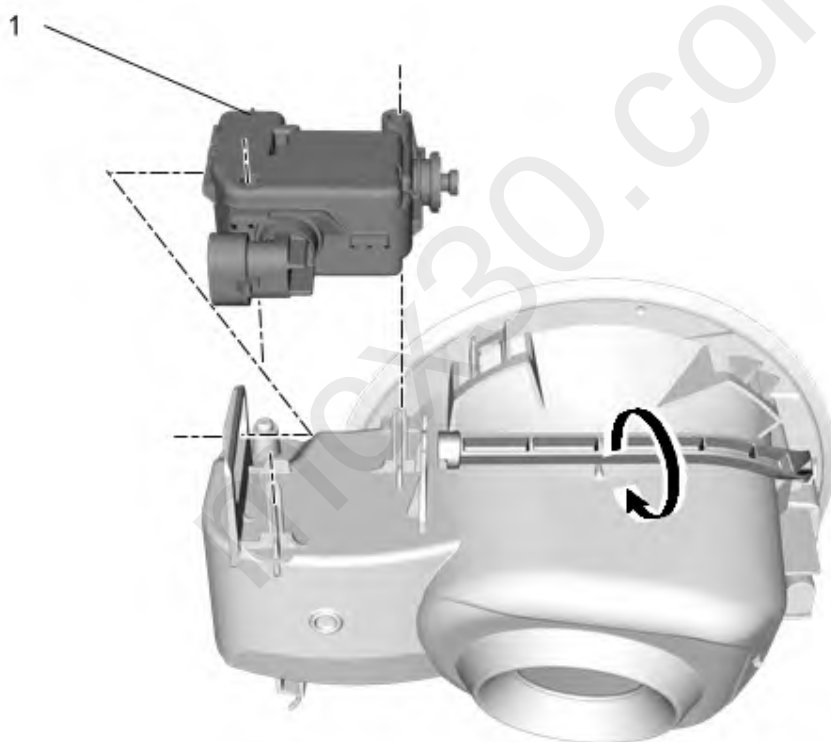


Fig. 9: Fuel Tank Filler Door Lock Actuator
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure <u>Fuel Tank Filler Door Latch Housing Replacement (Buick) Fuel Tank Filler Door Latch Housing Replacement (Chevrolet)</u>	

Callout	Component Name
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 retainers while using light outward pressure on the actuator.

FRONT SIDE DOOR INSIDE HANDLE CABLE REPLACEMENT

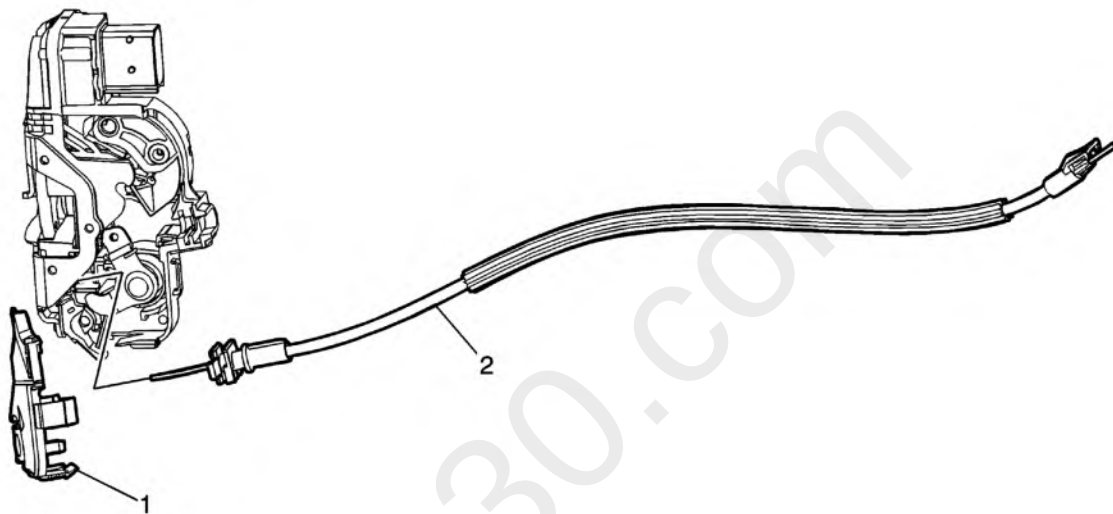


Fig. 10: Rear Side Door Inside Handle Cable And Cover
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door latch. Refer to Front Side Door Latch Replacement .	
1	Front Side Door Inside Handle Cable Cover NOTE: Open the inside handle cable cover to access the release.
2	Front Side Door Inside Handle Cable NOTE: Inspect the door lock system for proper operation before installing the door trim.

REAR SIDE DOOR INSIDE HANDLE CABLE REPLACEMENT

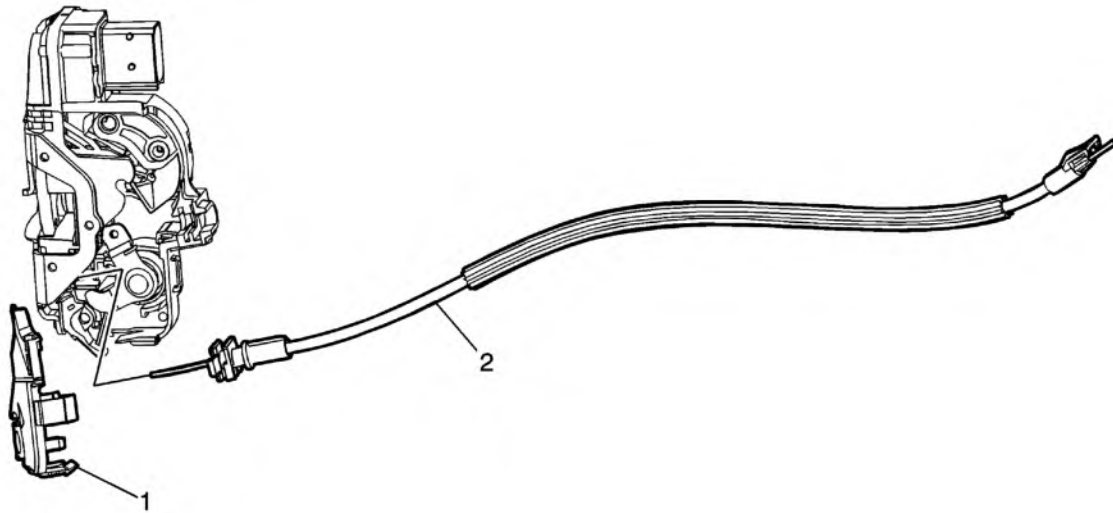


Fig. 11: Rear Side Door Inside Handle Cable And Cover

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the rear side door latch. Refer to Rear Side Door Latch Replacement .	
1	Rear Side Door Inside Handle Cable Cover NOTE: Open the inside handle cable cover to access the release.
2	Rear Side Door Inside Handle Cable NOTE: Inspect the door lock system for proper operation before installing the door trim.

FRONT SIDE DOOR LOCK CYLINDER REPLACEMENT

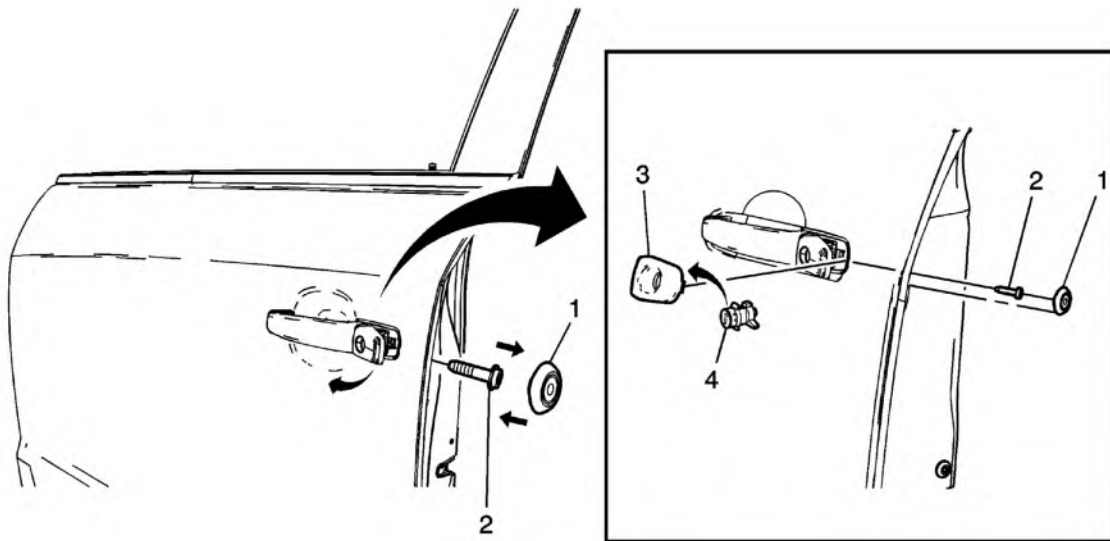


Fig. 12: Front Side Door Lock Cylinder & Components
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Front Side Door Lock Cylinder Screw Access Plug NOTE: Use the appropriate tool, remove the plug.
2	Front Side Door Lock Cylinder Clamp Screw CAUTION: Refer to Fastener Caution . Procedure 1. Pull and hold the door handle in the open position. 2. Do Not remove the cylinder clamp screw completely from the housing, unscrew the screw to a hard stop, releasing the cylinder from the housing. 3. Release the handle, at this point the handle should stay in the open position. 4. Remove the lock cylinder assembly. 5. While screwing in the screw for the lock cylinder hold the handle in the open position, this will avoid the door handle from snapping once the spring pressure is relieved and the door handle returns to the closed position. NOTE: It is not necessary to remove the outside door handle or housing to replace the lock cylinder. Tighten 5 N.m (44 lb in)
3	Front Side Door Lock Cylinder Bezel Procedure Remove the lock cylinder bezel. Refer to Front Side Door Lock Cylinder Bezel Replacement .

Callout	Component Name
4	Front Side Door Lock Cylinder Procedure 1. Ensure that the lock cylinder gasket is in place when installing the lock cylinder to the handle. 2. Code the New lock cylinder. Refer to Front Side Door Lock Cylinder Coding (Free Wheeling) Front Side Door Lock Cylinder Coding (Non Free Wheeling) . 3. Inspect the lock cylinder for proper operation.

OPENING THE LIFTGATE WITHOUT ELECTRICAL POWER

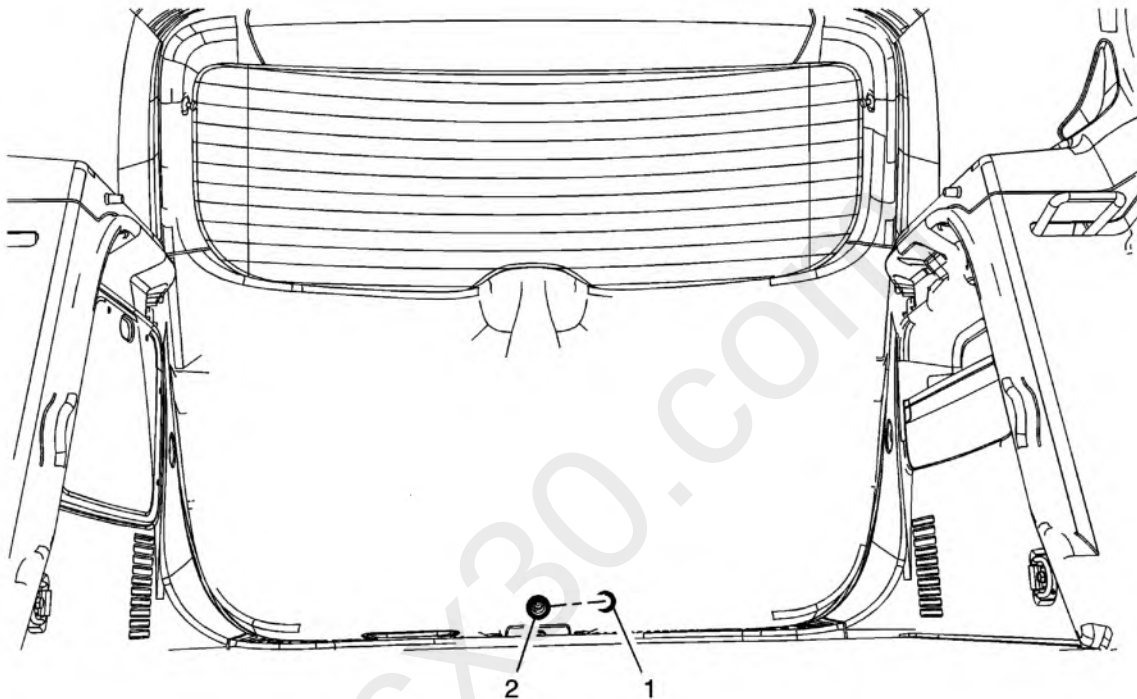


Fig. 13: Opening Liftgate Without Electrical Power
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Liftgate Access Cover
2	Liftgate Latch Procedure 1. Insert a flat-bladed tool into the hole, rotate slightly counterclockwise. 2. Push open the liftgate from the inside. 3. Install the access cover.

FRONT SIDE DOOR OUTSIDE HANDLE REPLACEMENT (WITHOUT ATH)

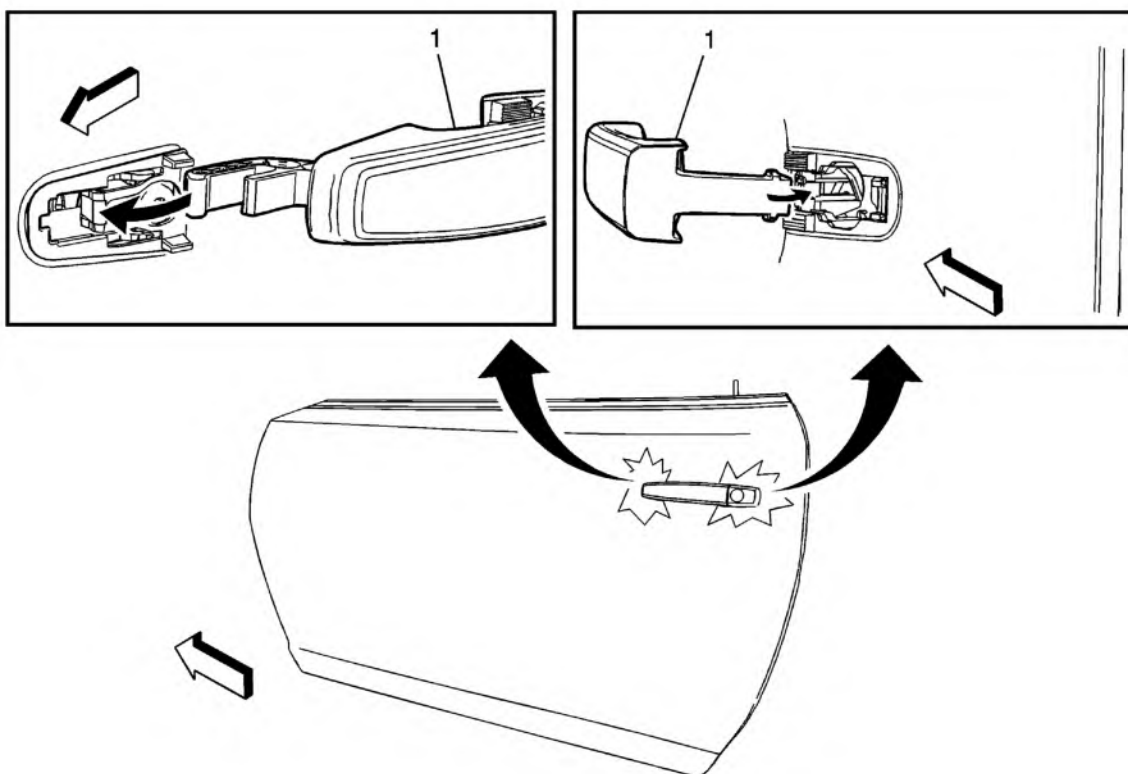


Fig. 14: View Of Front Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the front side door lock cylinder. Refer to Front Side Door Lock Cylinder Replacement .	
1	Front Side Door Outside Handle Procedures 1. Pull the outside door handle outward and hold it in the open position. 2. Sliding the outside door handle rearwards and then out in a swinging motion releasing it from it from the door. 3. Install the rear side door outside handle into the handle guide. 4. While screwing in the screw for the lock cylinder hold the handle in the open position, this will avoid the door handle from snapping once the spring pressure is relieved and the door handle returns to the close position. 5. Turn fastener to the right and to the mechanical stop. NOTE: Inspect the door locking system for proper operation before installing the door trim.

FRONT SIDE DOOR OUTSIDE HANDLE REPLACEMENT (WITH ATH)

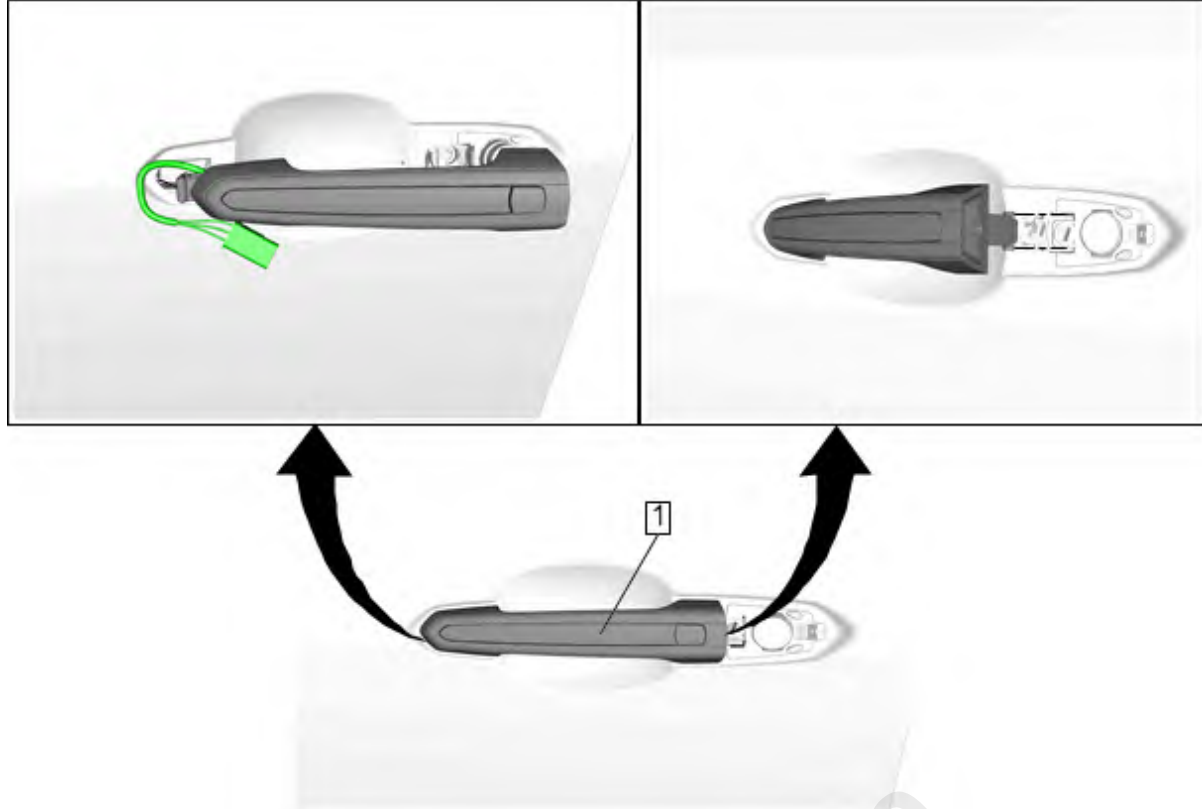


Fig. 15: Front Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures <u>Front Side Door Lock Cylinder Bezel Replacement</u> <u>Front Side Door Trim Replacement (Buick) Front Side Door Trim Replacement (Chevrolet)</u> - Front Side Door Water Deflector»Remove - Disconnect the electrical connector.	
1	Front Side Door Outside Handle - Pull the front side door outside handle molding outward and hold it in the open position. - Slide the front side door outside handle molding rearward and then outwards in a swinging motion releasing the handle from the front side door outside handle bracket. - Install the front side door outside handle molding into the handle bracket. - While screwing in the screw for the lock cylinder opening cover, hold the handle in the open position, this will avoid the door handle from snapping once the spring pressure is relieved and the door handle returns to the close position.

FRONT SIDE DOOR OUTSIDE HANDLE BRACKET REPLACEMENT

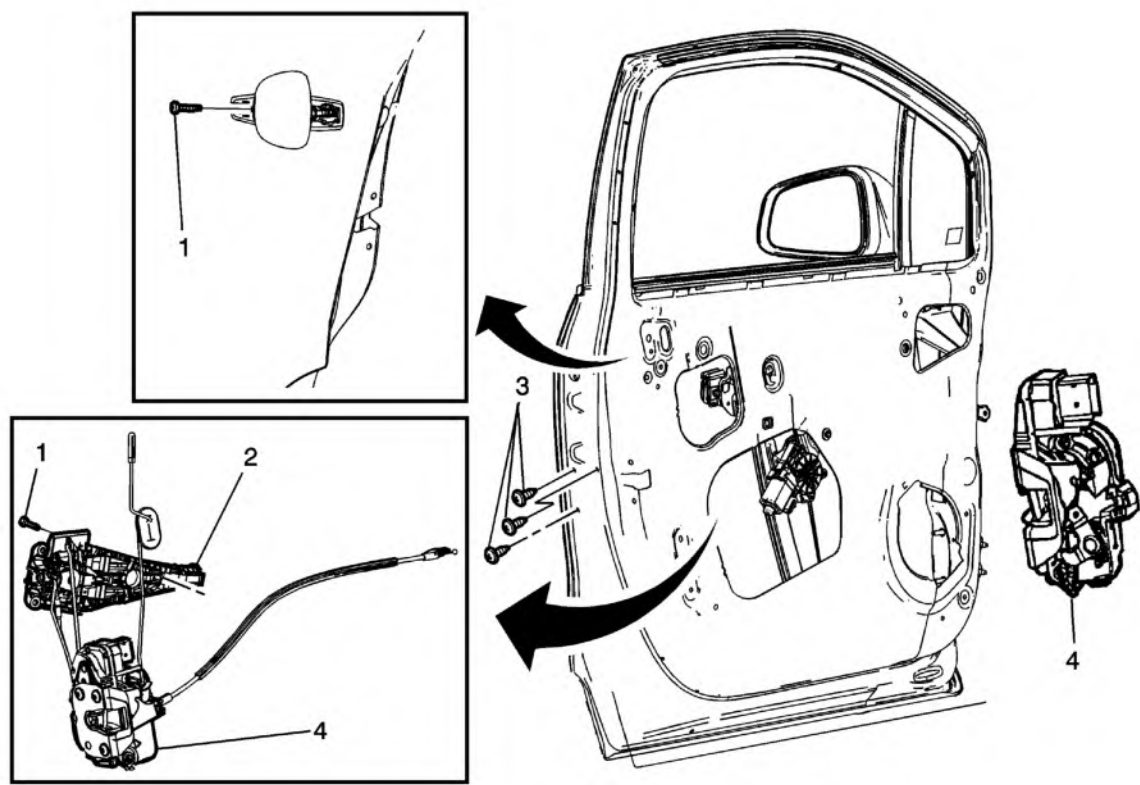


Fig. 16: Front Side Door Outside Handle Bracket
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door outside handle. Refer to Front Side Door Outside Handle Replacement (Without ATH) Front Side Door Outside Handle Replacement (With ATH) .	
1	Front Side Door Outside Handle Bracket Screw CAUTION: Refer to Fastener Caution . Tighten 4 N.m (35 lb in)
2	Front Side Door Outside Handle Bracket
3	Front Side Door Latch Screws (Qty: 3) Procedure Remove the front side door latch, housing bracket and rods as assembly. Refer to Front Side Door Latch Replacement . Tighten 10 N.m (89 lb in)
4	Front Side Door Latch and Bracket Assembly Procedure 1. Transfer components as necessary. 2. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Front Side Door Outside Handle Rod Adjustment. NOTE: Inspect the door lock system for proper operation before installing the door trim.

REAR SIDE DOOR OUTSIDE HANDLE BRACKET REPLACEMENT

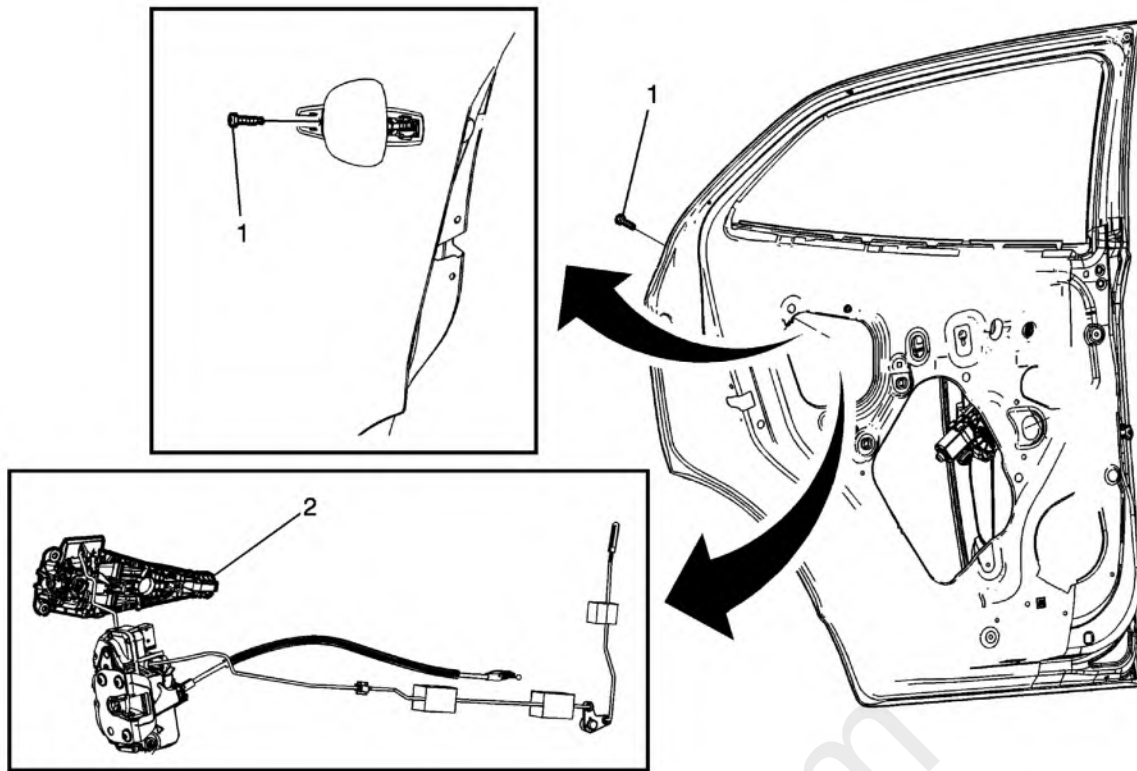


Fig. 17: Rear Side Door Outside Handle Bracket

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the rear side door outside handle. Refer to Rear Side Door Outside Handle Replacement (Without ATH) Rear Side Door Outside Handle Replacement (With ATH) .	
1	Rear Side Door Outside Handle Bracket Screw CAUTION: Refer to Fastener Caution . Procedure 1. Release the rear outside door handle rod clip so that the handle rod can be free from the door latch assembly 2. Remove the rear outside door handle bracket and handle rods as assembly. Tighten 4 N.m (35 lb in)

Callout	Component Name
2	Rear Side Door Outside Handle Bracket Procedure 1. Transfer components as necessary. 2. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Rear Side Door Outside Handle Rod Adjustment. NOTE: Inspect the door lock system for proper operation before installing the door trim.

LIFTGATE OUTSIDE HANDLE REPLACEMENT

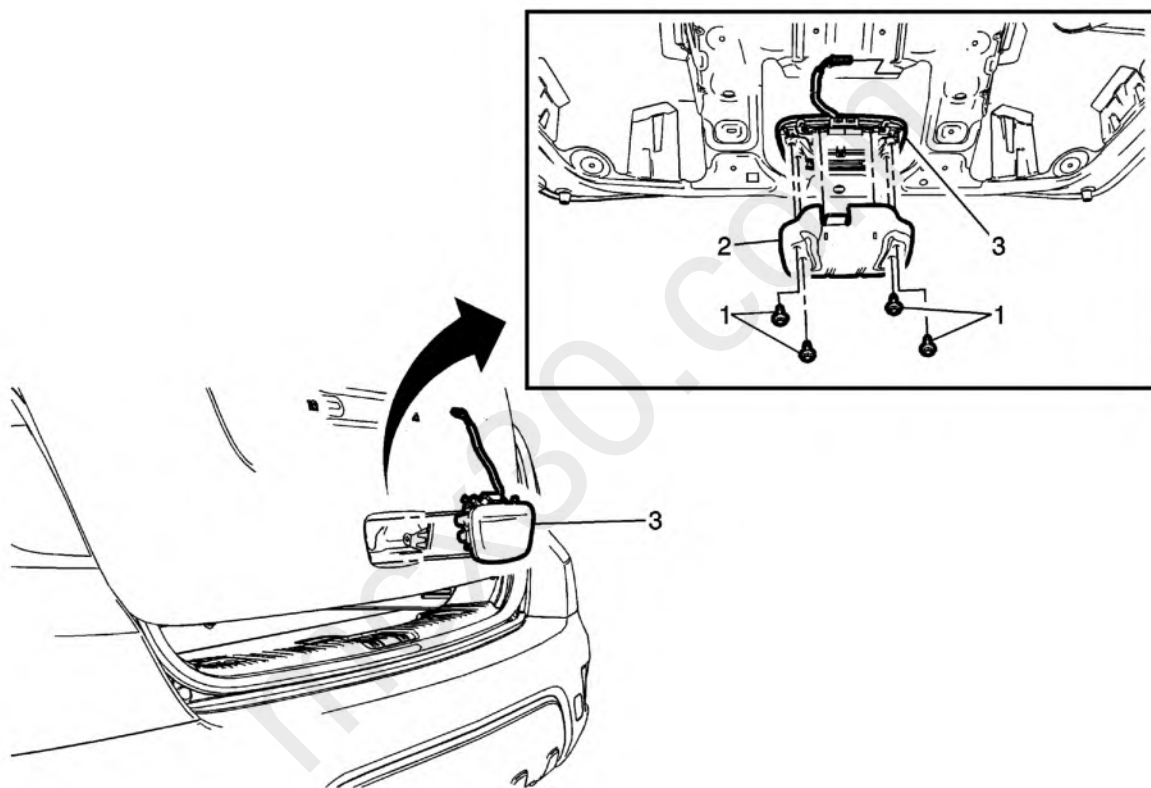


Fig. 18: Liftgate Outside Handle
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the liftgate lower trim finish panel. Refer to Liftgate Lower Trim Finish Panel Replacement.	
1	Liftgate Outside Handle Bolt (Qty: 4) CAUTION: Refer to Fastener Caution. Tighten 9 N.m (80 lb in)
2	Liftgate Outside Handle Seal

Callout	Component Name
3	Liftgate Outside Handle Procedure 1. Support the liftgate outside handle. 2. Disconnect the electrical connector. 3. Remove the liftgate outside handle.

LIFTGATE LATCH REPLACEMENT

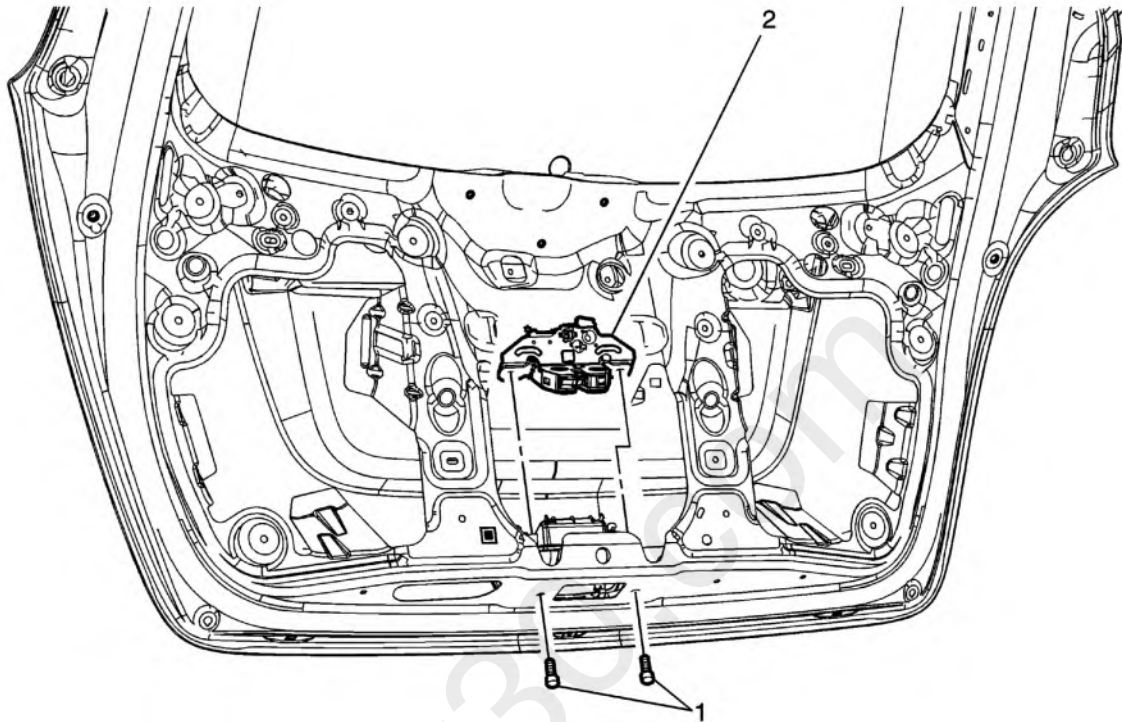


Fig. 19: Liftgate Latch

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the liftgate lower trim panel. Refer to Liftgate Lower Trim Finish Panel Replacement .	
1	Liftgate Latch Screw (Qty: 2) CAUTION: Refer to Fastener Caution . Tighten 22 N.m (16 lb ft)
2	Liftgate Latch Assembly Procedure 1. Disconnect the electrical connector. 2. Adjust the liftgate if needed. Refer to Liftgate Adjustment (Chevrolet) Liftgate Adjustment (Buick) .

REAR SIDE DOOR OUTSIDE HANDLE REPLACEMENT (WITHOUT ATH)

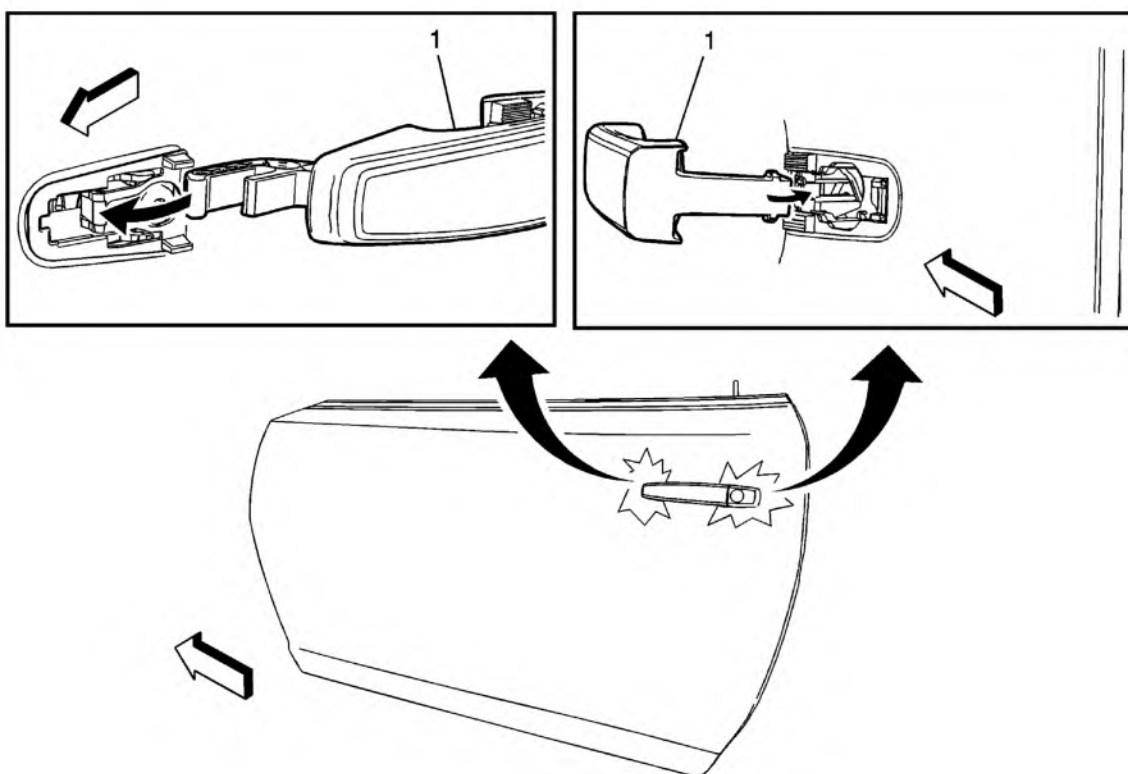


Fig. 20: View Of Front Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the rear side door lock cylinder/blank opening cover. Refer to Rear Side Door Lock Cylinder Opening Cover Replacement .	
1	Rear Side Door Outside Handle Procedures 1. Check the handle should stay in the open position. 2. Remove the outside door handle by sliding rearwards and then out in a swinging motion. 3. While screwing in the screw for the lock cylinder hold the handle in the open position, this will avoid the door handle from snapping once the spring pressure is relieved and the door handle returns to the close position. NOTE: Inspect the door locking system for proper operation before installing the door trim.

REAR SIDE DOOR OUTSIDE HANDLE REPLACEMENT (WITH ATH)

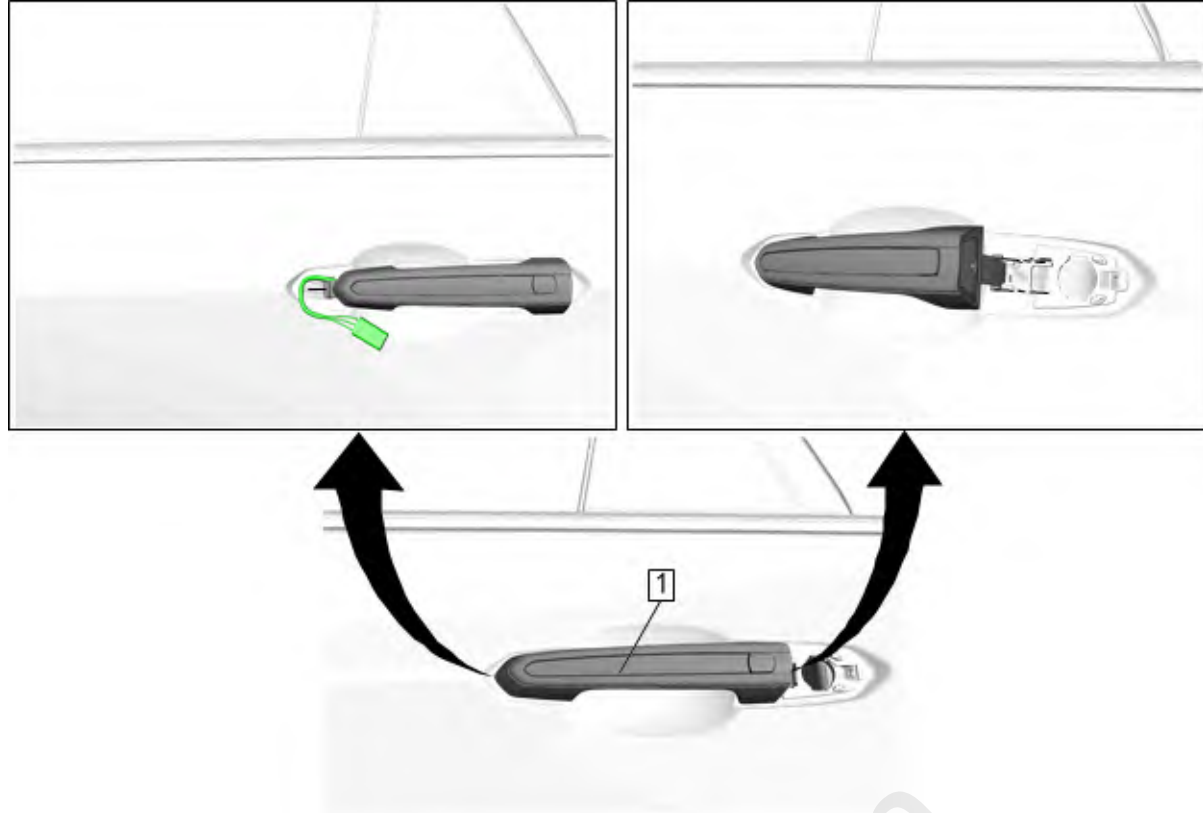


Fig. 21: Rear Side Door Outside Handle
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures 1. <u>Rear Side Door Lock Cylinder Opening Cover Replacement</u> 2. <u>Rear Side Door Trim Replacement</u> 3. Remove the rear side door water deflector. 4. Disconnect the electrical connector.	
1	Rear Side Door Outside Handle Procedure 1. Pull the rear side door outside handle molding outward and hold it in the open position. 2. Slide the rear side door outside handle molding rearward and then outwards in a swinging motion releasing the handle from the rear side door outside handle bracket. 3. Install the rear side door outside handle molding into the handle bracket. 4. While screwing in the screw for the lock cylinder opening cover, hold the handle in the open position, this will avoid the door handle from snapping once the spring pressure is relieved and the door handle returns to the close position.

FRONT SIDE DOOR LATCH REPLACEMENT

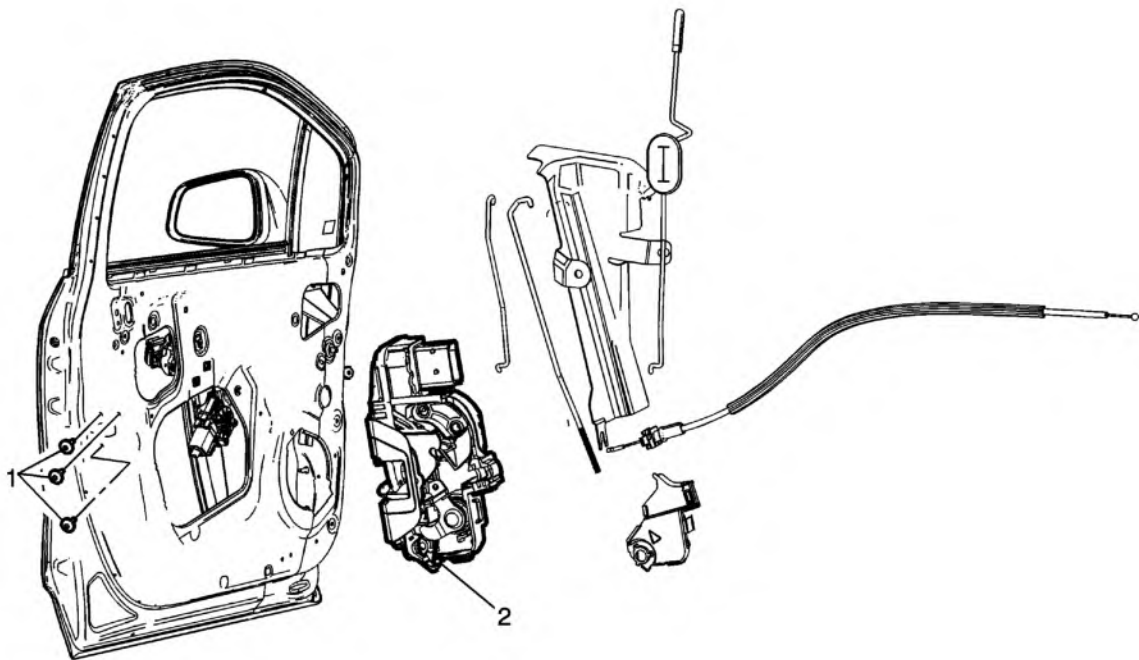


Fig. 22: Front Side Door Latch

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure 1. Remove the front side door outside handle bracket. Refer to Front Side Door Outside Handle Bracket Replacement. 2. Remove the front side door window rear guide. Refer to Front Side Door Window Rear Guide Replacement.	
1	Front Side Door Latch Screw (Qty: 3) CAUTION: Refer to Fastener Caution. Procedures 1. Release the inside door handle cable from the retainers. 2. Remove the front side door lock rod theft cover, if equipped 3. Disconnect the front side door latch electrical connector. Tighten 10 N.m (89 lb in)
2	Front Side Door Latch Assembly Procedure 1. Transfer the front side door lock rods and cable. 2. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Front Side Door Outside Handle Rod Adjustment.

REAR SIDE DOOR LATCH REPLACEMENT

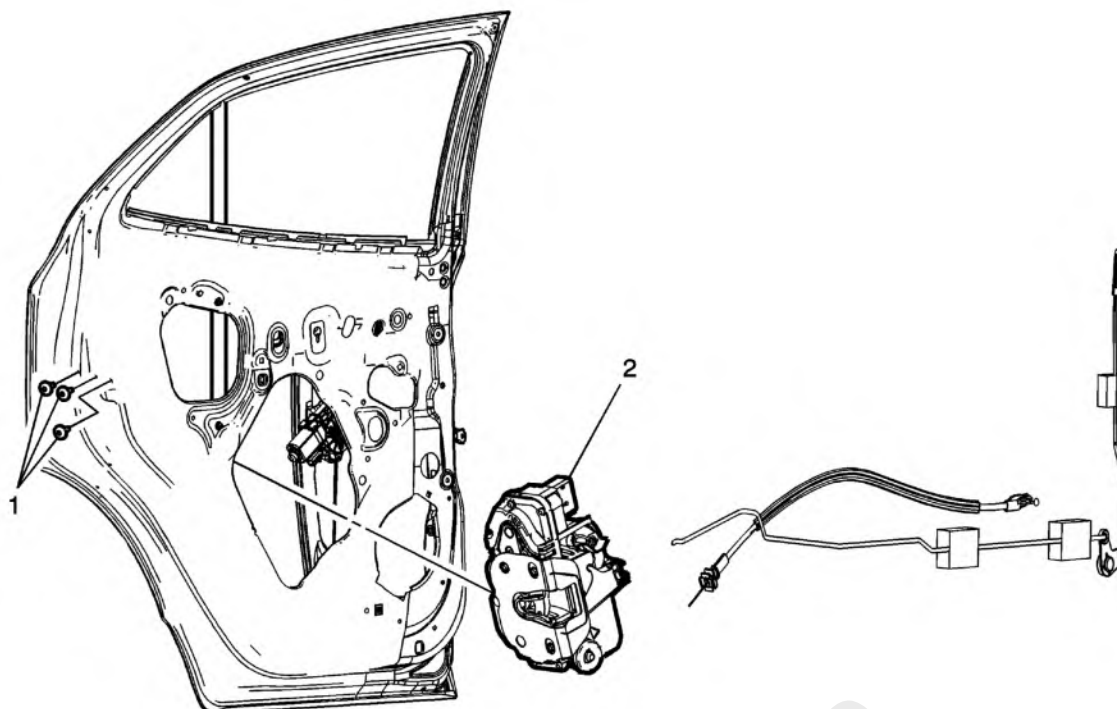


Fig. 23: Rear Side Door Latch

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the rear side door window rear guide. Refer to Rear Side Door Window Rear Guide Replacement .	
1	Rear Side Door Latch Screw (Qty: 3) CAUTION: Refer to Fastener Caution. Procedures 1. Release the rear inside door handle cable from the retainers. 2. Release the rear outside door handle rod clip so that the handle rod can be free from the door latch assembly 3. Disconnect the rear side door latch electrical connector. Tighten 10 N.m (89 lb in)
2	Rear Side Door Latch Assembly Procedure 1. Transfer the rear side door lock rods. 2. Rear outside door handle rod adjustment. Refer to Rear Side Door Outside Handle Rod Adjustment. NOTE: Inspect the door lock system for proper operation before installing the door trim.

REAR SIDE DOOR LOCK CYLINDER OPENING COVER REPLACEMENT

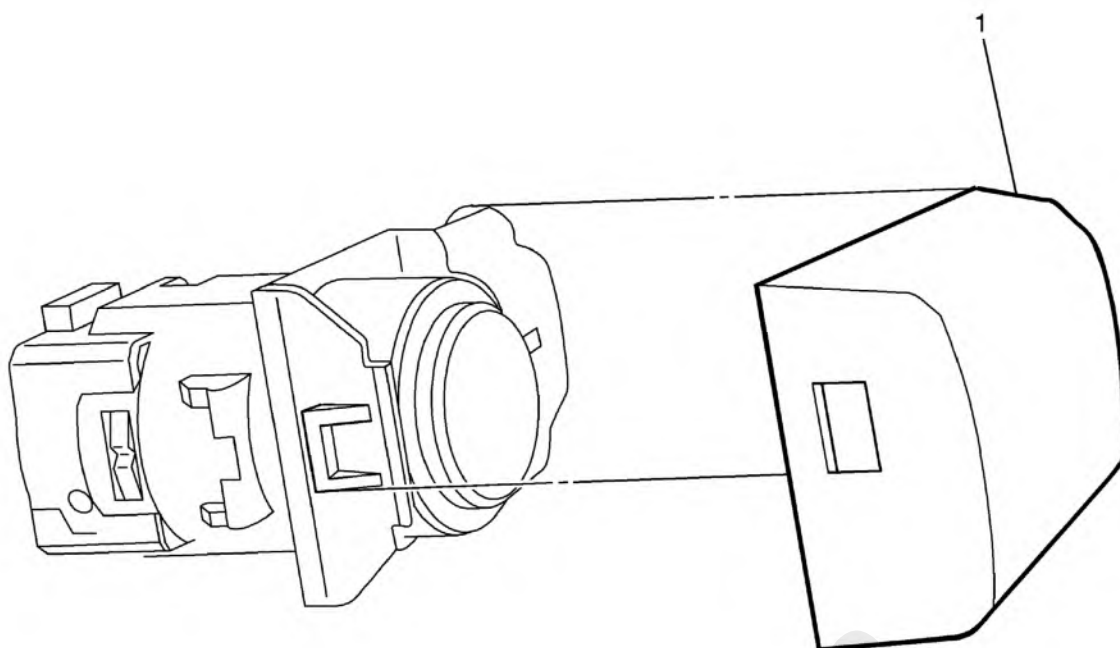


Fig. 24: Rear Side Door Lock Cylinder Opening Cover

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Rear Side Door Lock Cylinder Opening Cover Procedure 1. Remove the front side door lock cylinder/blank screw access plug. 2. Pull and hold the door handle in the open position. 3. Do Not remove the door lock cylinder/blank screw completely from the housing. Unscrew the screw to a hard stop, remove the cylinder/blank. 4. Release the door handle, at this point the door handle should stay in the open position. 5. Remove the door lock cylinder/blank assembly. 6. Remove the door lock cylinder/blank cover (1) NOTE: 1. Remove the rear side door lock cylinder/blank, it not necessary to remove the outside door handle. 2. Use a small flat-bladed tool to release the door lock cylinder opening cover retainers location on both sides.

FRONT SIDE DOOR LOCK CYLINDER BEZEL REPLACEMENT

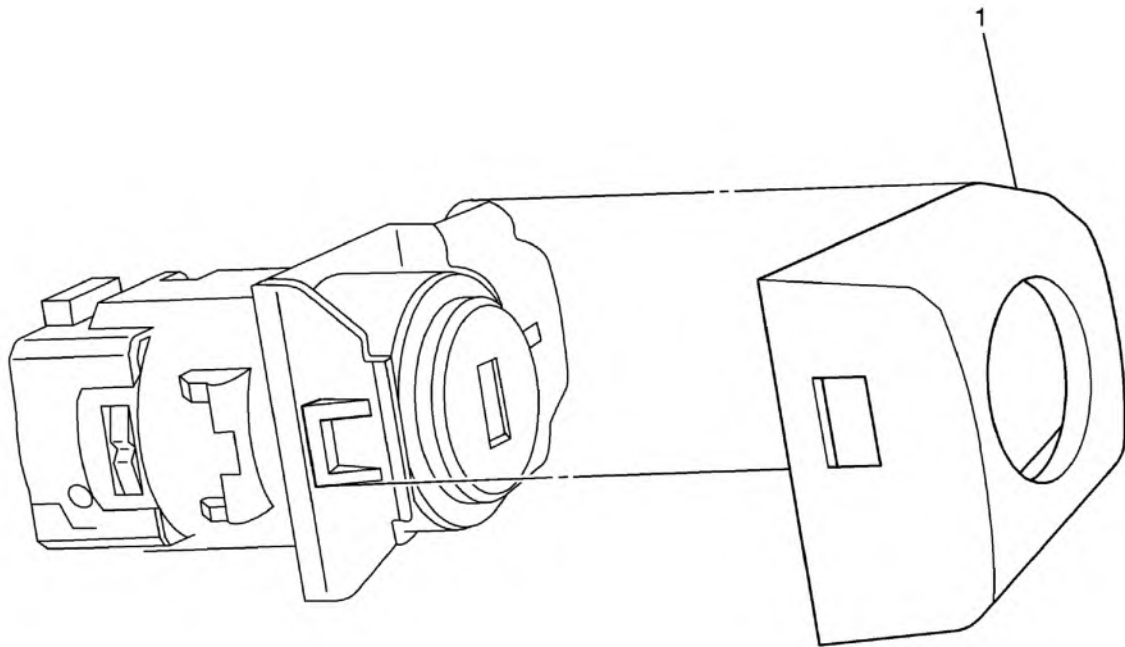


Fig. 25: View Of Front Side Door Lock Cylinder Opening Cover
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Front Side Door Lock Cylinder Bezel Procedure 1. Remove the front side door lock cylinder, Do Not remove the outside door handle. Refer to Front Side Door Lock Cylinder Replacement. 2. Do Not remove the door lock cylinder screw completely from the housing. Unscrew the screw to a hard stop, remove the cylinder. NOTE: Use a small flat-bladed tool to release the door lock cylinder bezel retainers location on both sides.

FRONT SIDE DOOR LOCKING ROD REPLACEMENT

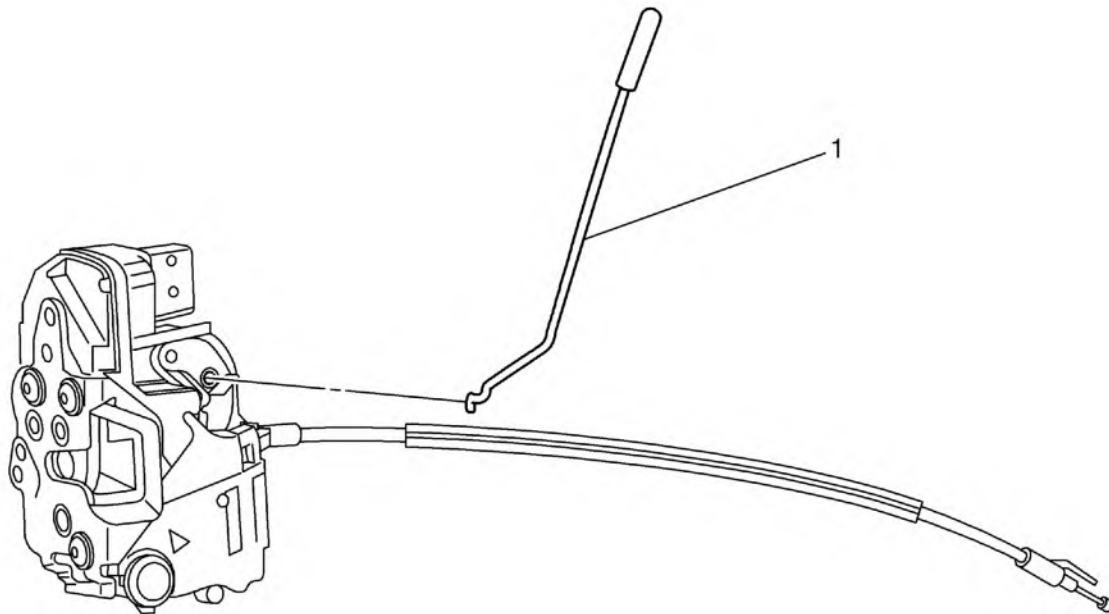


Fig. 26: Rear Side Door Locking Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door latch. Refer to Front Side Door Latch Replacement .	
1	Front Side Door Lock Rod Procedure 1. Place the window in the full up position. 2. Remove the water deflector. 3. Transfer components as necessary. 4. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Front Side Door Outside Handle Rod Adjustment. NOTE: Inspect the door lock system for proper operation before installing the door trim.

FRONT SIDE DOOR LOCK CYLINDER ROD REPLACEMENT

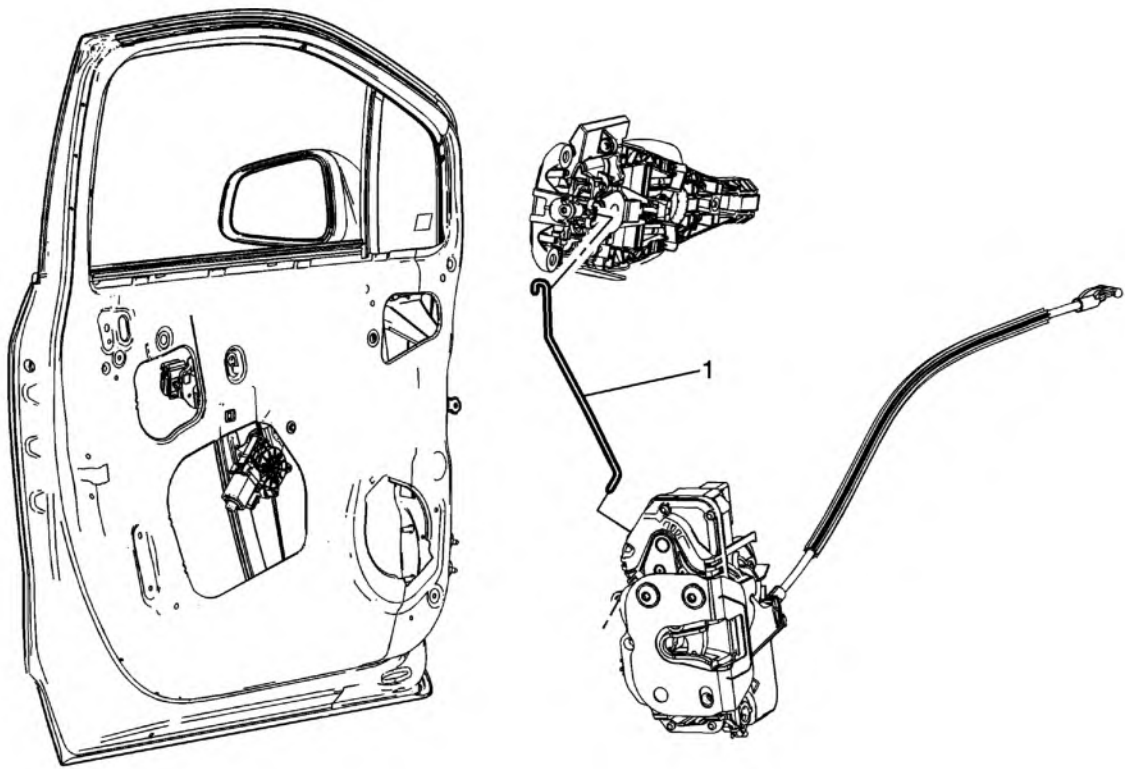


Fig. 27: Front Side Door Lock Cylinder Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door latch. Refer to Front Side Door Latch Replacement .	
1	Rear Side Door Lock Cylinder Rod Procedure 1. Place the window in the full up position. 2. Remove the water deflector. 3. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Front Side Door Outside Handle Rod Adjustment. NOTE: Inspect the door lock system for proper operation before installing the door trim.

FRONT SIDE DOOR OUTSIDE HANDLE ROD ADJUSTMENT

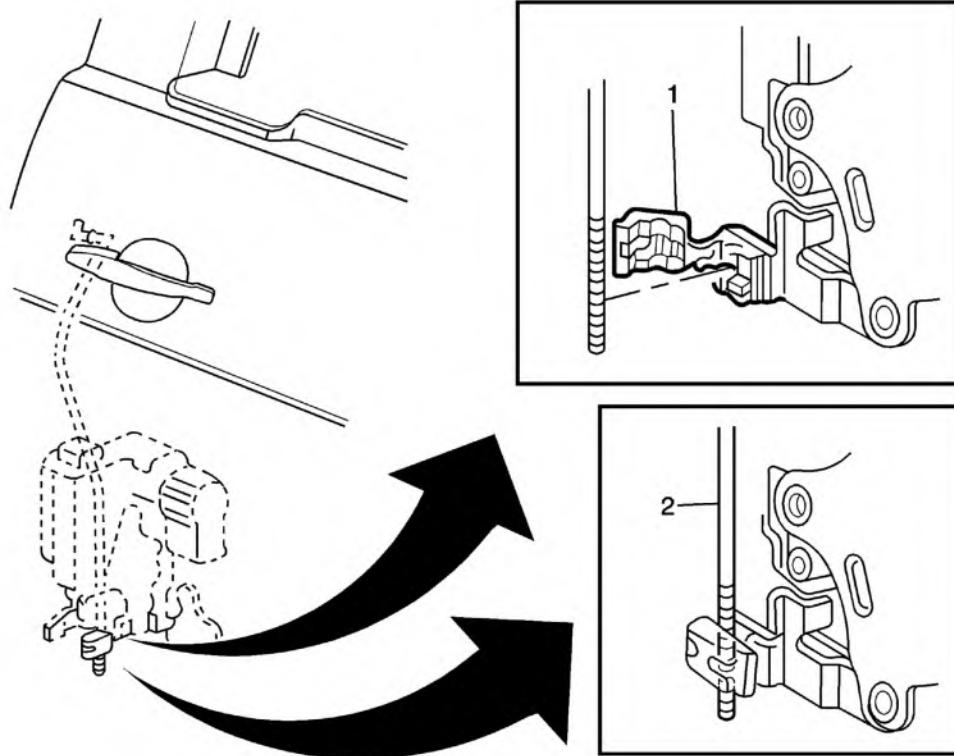


Fig. 28: Side Door Outside Handle Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the front side door trim. Refer to Front Side Door Trim Replacement (Buick) , Front Side Door Trim Replacement (Chevrolet) .	
1	Front Side Door Outside Handle Rod Retainer Procedure Remove the front side door water deflector.
2	Front Side Door Outside Handle Rod Procedure 1. Position the front side door outside handle rod in the retainer in order to eliminate any free play in the outside door handle. 2. Adjust the travel of the handle by removing the threaded rod from the retainer. 3. Install the retainer cover closed over the threaded front side door outside handle rod. 4. Inspect the door lock system for proper operation before installing the door trim. NOTE: Use a flat-head tool to open the retainer from the threaded rod connecting the lock to the outside handle.

FRONT SIDE DOOR OUTSIDE HANDLE ROD REPLACEMENT

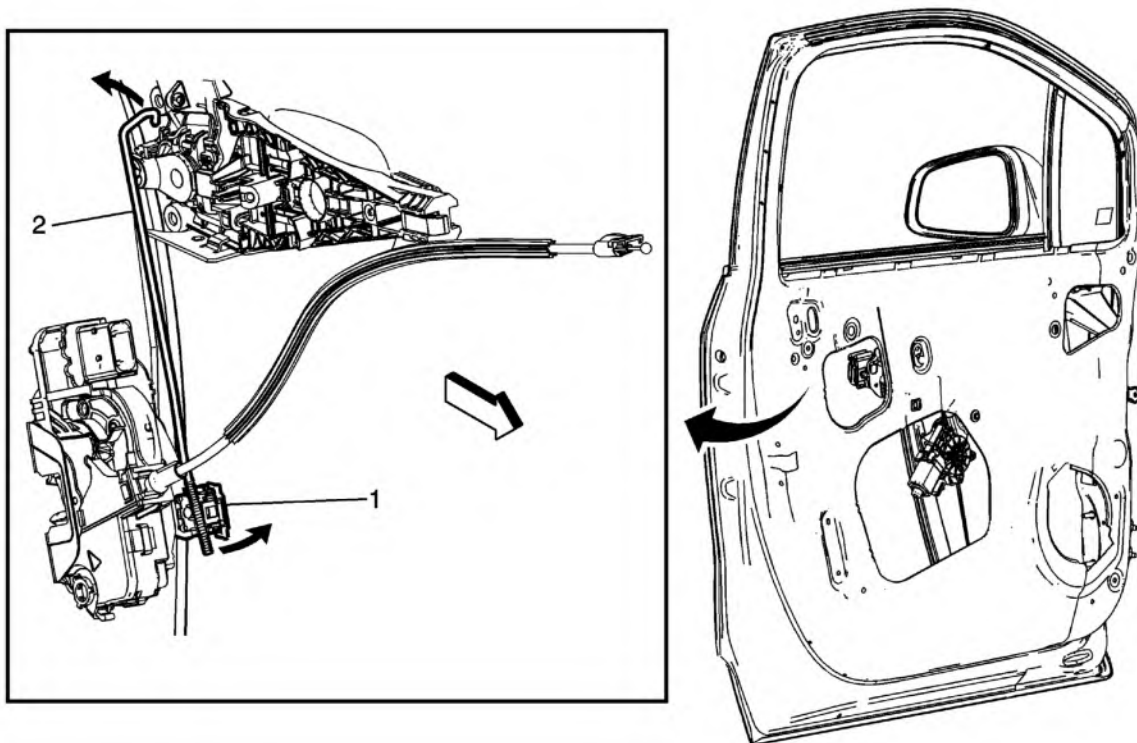


Fig. 29: Front Side Door Outside Handle Rod
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door trim. Refer to Front Side Door Trim Replacement (Buick) , Front Side Door Trim Replacement (Chevrolet) .	
1	Front Side Door Outside Handle Rod Clip Procedure 1. Place the window in the full up position. 2. Remove the water deflector. 3. Open the handle rod by releasing the clip at the end of the handle rod.
2	Front Side Door Outside Handle Rod Procedure 1. Lift and turn handle rod until it releases the handle bracket. 2. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Front Side Door Outside Handle Rod Adjustment. NOTE: Inspect the door lock system for proper operation before installing the door trim.

REAR SIDE DOOR LOCKING ROD REPLACEMENT

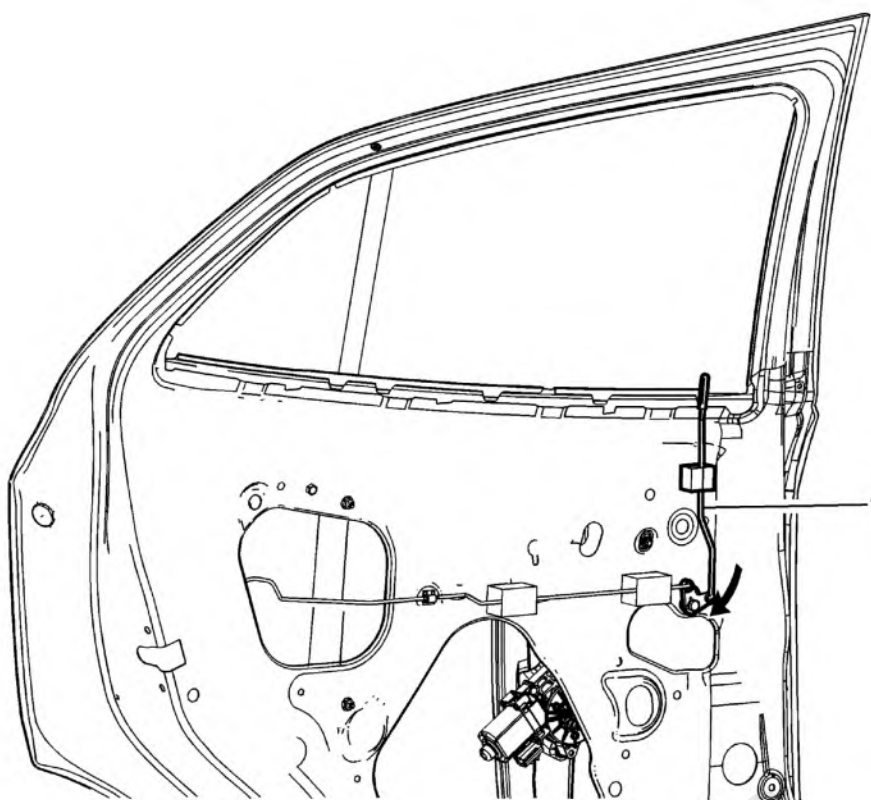


Fig. 30: Rear Side Door Locking Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the rear side door trim. Refer to Rear Side Door Trim Replacement .	
1	Rear Side Door Locking Rod Procedure 1. Remove the water deflector. 2. Transfer components as necessary. NOTE: Inspect the door lock system for proper operation before installing the door trim.

REAR SIDE DOOR LOCKING ROD BELLCRANK ROD REPLACEMENT

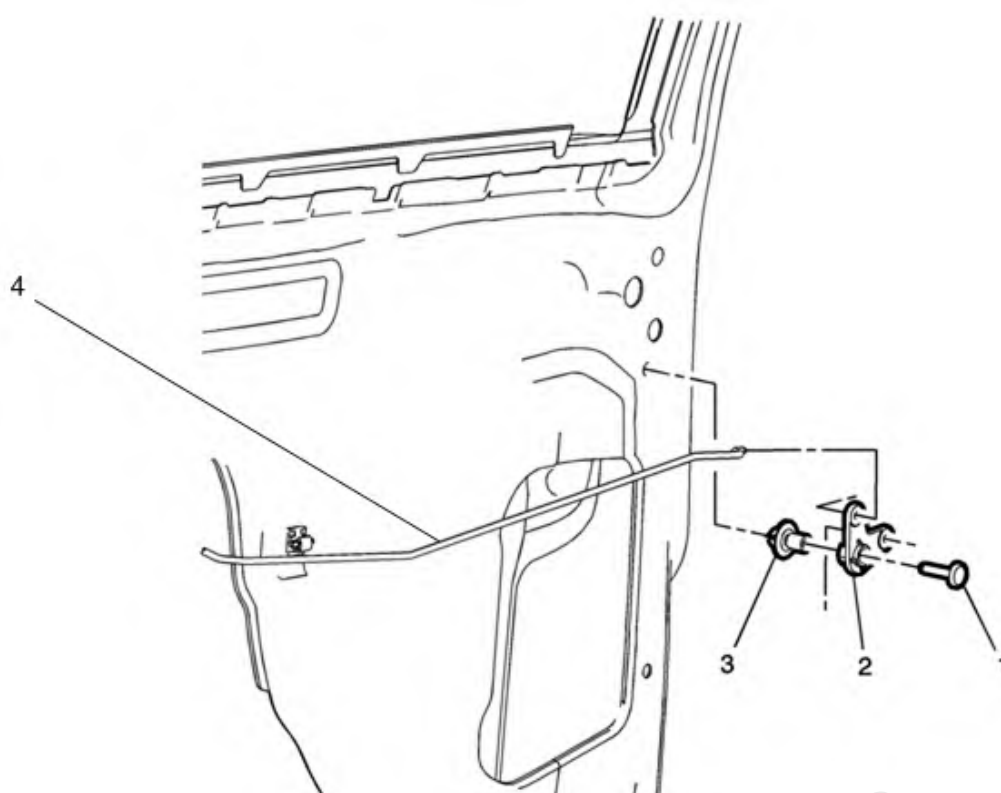


Fig. 31: Rear Side Door Locking Rod Bellcrank

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the rear side door trim. Refer to Rear Side Door Trim Replacement .	
1	Rear Side Door Locking Rod Bellcrank Center Retainer Procedure 1. Place the window in the full up position. 2. Remove the water deflector. NOTE: Use a small flat-bladed tool to release the retainer from the center of the bellcrank.
2	Rear Side Door Locking Rod Bellcrank Center
3	Rear Side Door Locking Rod Bellcrank Retainer to Door NOTE: Inspect the door lock system for proper operation before installing the door trim.
4	Rear Side Door Locking Rod Bellcrank Rod

REAR SIDE DOOR OUTSIDE HANDLE ROD ADJUSTMENT

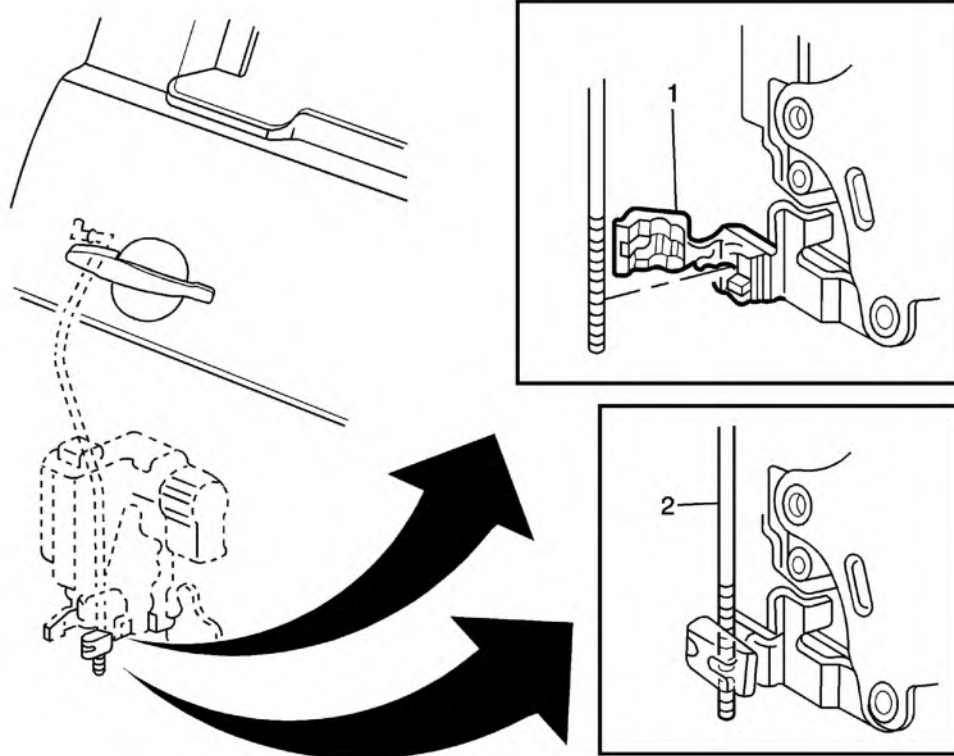


Fig. 32: Side Door Outside Handle Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the rear side door trim. Refer to Rear Side Door Trim Replacement .	
1	Rear Side Door Outside Handle Rod Retainer Procedure Remove the rear side door water deflector.
2	Rear Side Door Outside Handle Rod Procedure 1. Position the rear side door outside handle rod in the retainer in order to eliminate any free play in the outside door handle. 2. Adjust the travel of the handle by removing the threaded rod from the retainer. 3. Install the retainer cover closed over the threaded front side door outside handle rod. 4. Inspect the door locking system for proper operation before installing the door trim. NOTE: Use a flat-head tool to open the retainer from the threaded rod connecting the lock to the outside handle.

REAR SIDE DOOR OUTSIDE HANDLE ROD REPLACEMENT

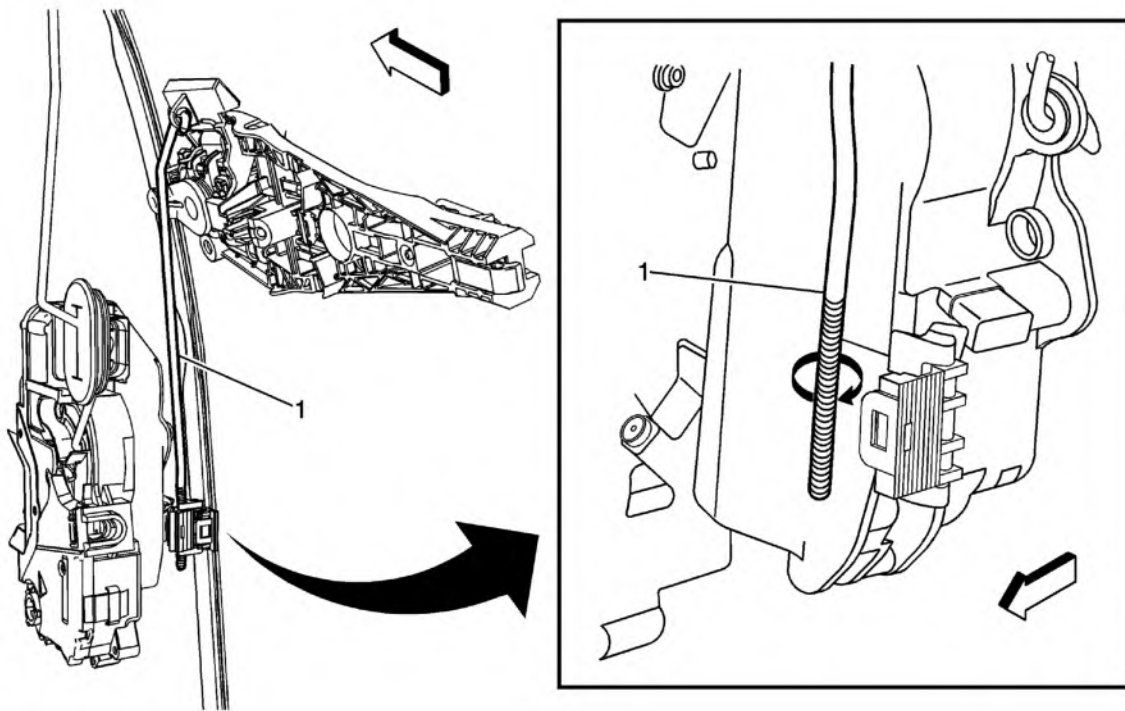


Fig. 33: Rear Side Door Outside Handle Rod
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedures Remove the rear side door window rear guide. Refer to Rear Side Door Window Rear Guide Replacement .	
1	Rear Side Door Outside Handle Rod Procedure 1. Place the window in the full up position. 2. Remove the water deflector. 3. Release the handle rod retaining clip that attaches the rod to latch. 4. Lift and turn handle rod until it releases the handle bracket. 5. In order to prevent outside handle lever pre-load, lock, outside handle, handle bracket and cover/cap shall be fully secured to the door prior to securing integral lock clip to outside handle rod. Integral lock clip shall be in the full up position while securing to outside handle rod. Refer to Rear Side Door Outside Handle Rod Adjustment NOTE: Inspect the door lock system for proper operation before installing the door trim.

FRONT SIDE DOOR LOCK STRIKER ADJUSTMENT

To determine if striker adjustment is required, proceed as follows:

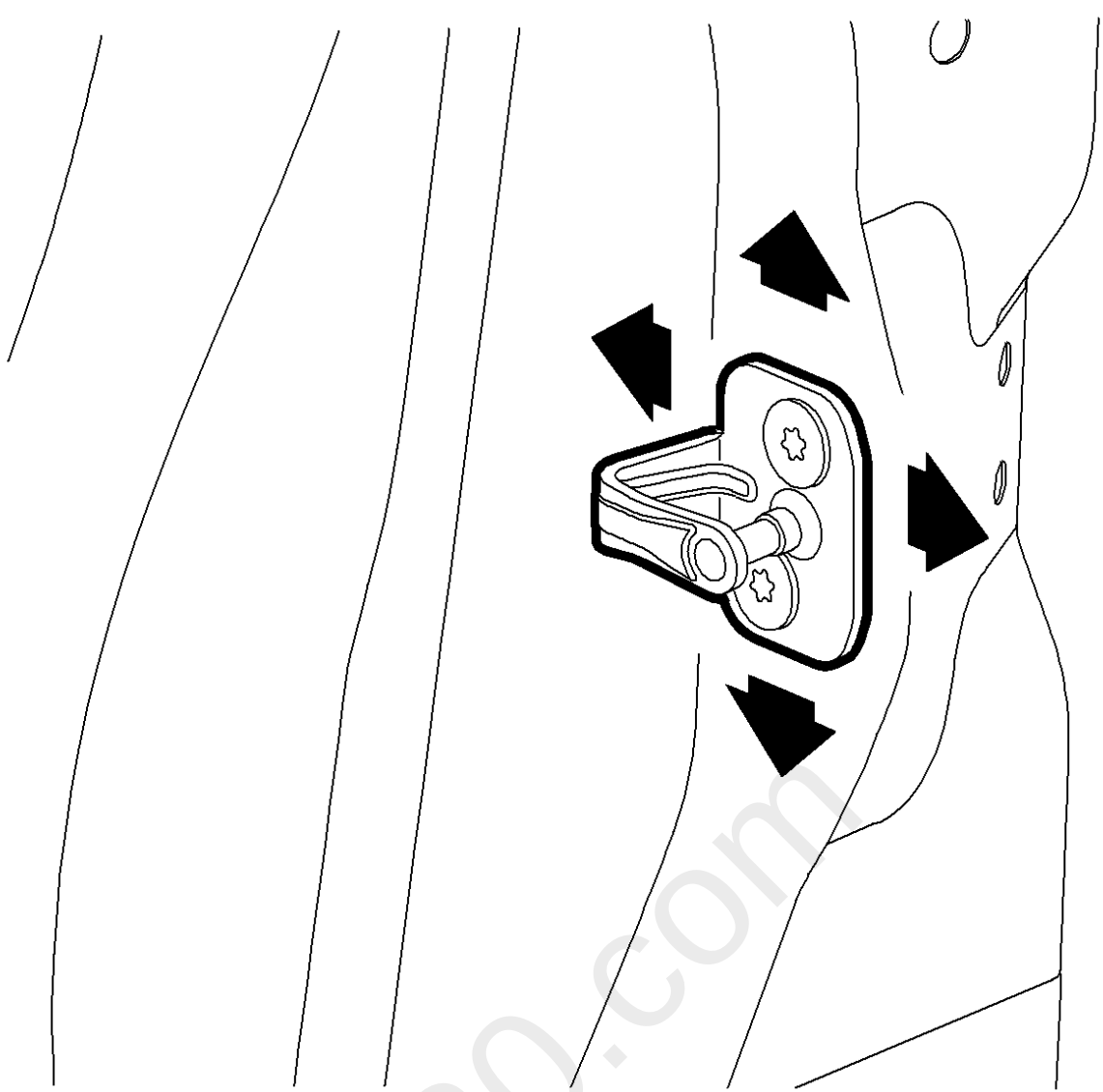


Fig. 34: View Of Door Striker

Courtesy of GENERAL MOTORS COMPANY

1. Ensure the door is properly aligned within the door opening before proceeding with the 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 striker bolts. Tighten the front side door striker screws to 22 N.m (16 lb ft).

FRONT SIDE DOOR LOCK STRIKER REPLACEMENT

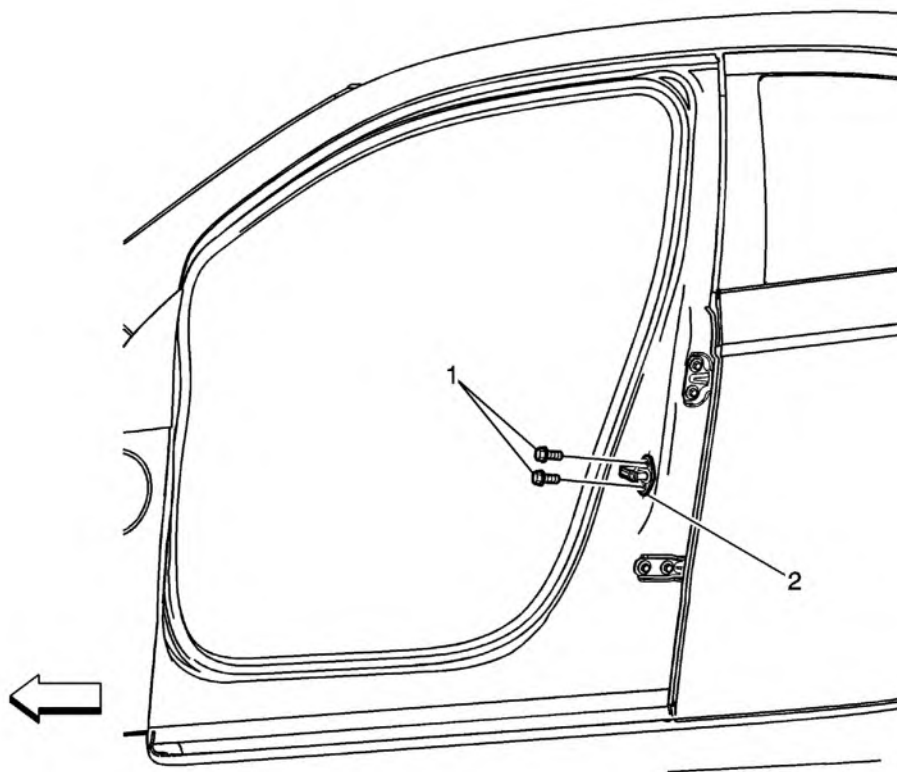


Fig. 35: Front Side Door Lock Striker

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Front Door Lock Striker Screws (Qty: 2) CAUTION: Refer to Fastener Caution . Procedure Unclip the door lock striker cover from the striker to expose the screws, if equipped. Tighten 22 N.m (16 lb ft)
2	Front Door Lock Striker Procedure Ensure the alignment of the striker. Refer to Front Side Door Lock Striker Adjustment.

LIFTGATE LATCH STRIKER REPLACEMENT

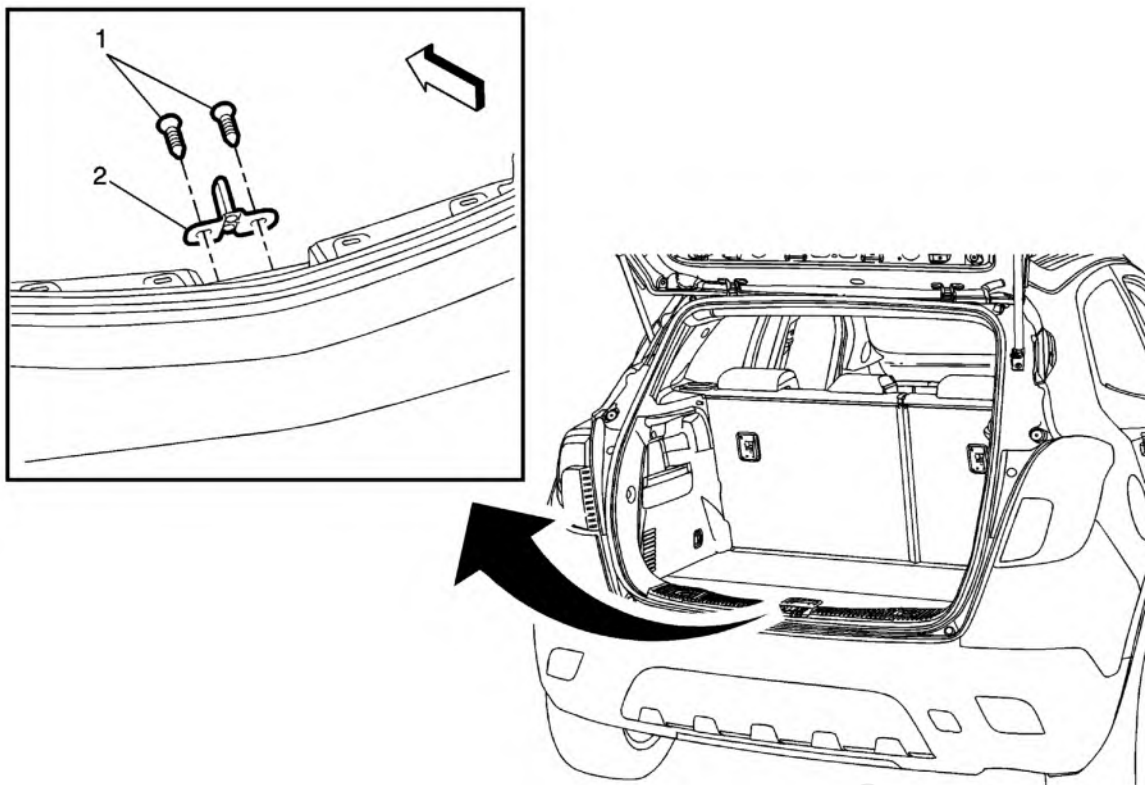


Fig. 36: Liftgate Latch Striker

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the load floor panel rear extension panel. Refer to Load Floor Panel Rear Extension Panel Replacement (Buick) Load Floor Panel Rear Extension Panel Replacement (Chevrolet) .	
1	Liftgate Latch Striker Fastener (Qty: 2) CAUTION: Refer to Fastener Caution . Procedure Use a grease pencil to outline the striker before removing the fasteners. Tighten 22 N.m (16 lb ft)
2	Liftgate Latch Striker Procedure Adjust the liftgate, if needed. Refer to Liftgate Adjustment (Chevrolet) Liftgate Adjustment (Buick) .

REAR SIDE DOOR LOCK STRIKER ADJUSTMENT

To determine if striker adjustment is required, proceed as follows:

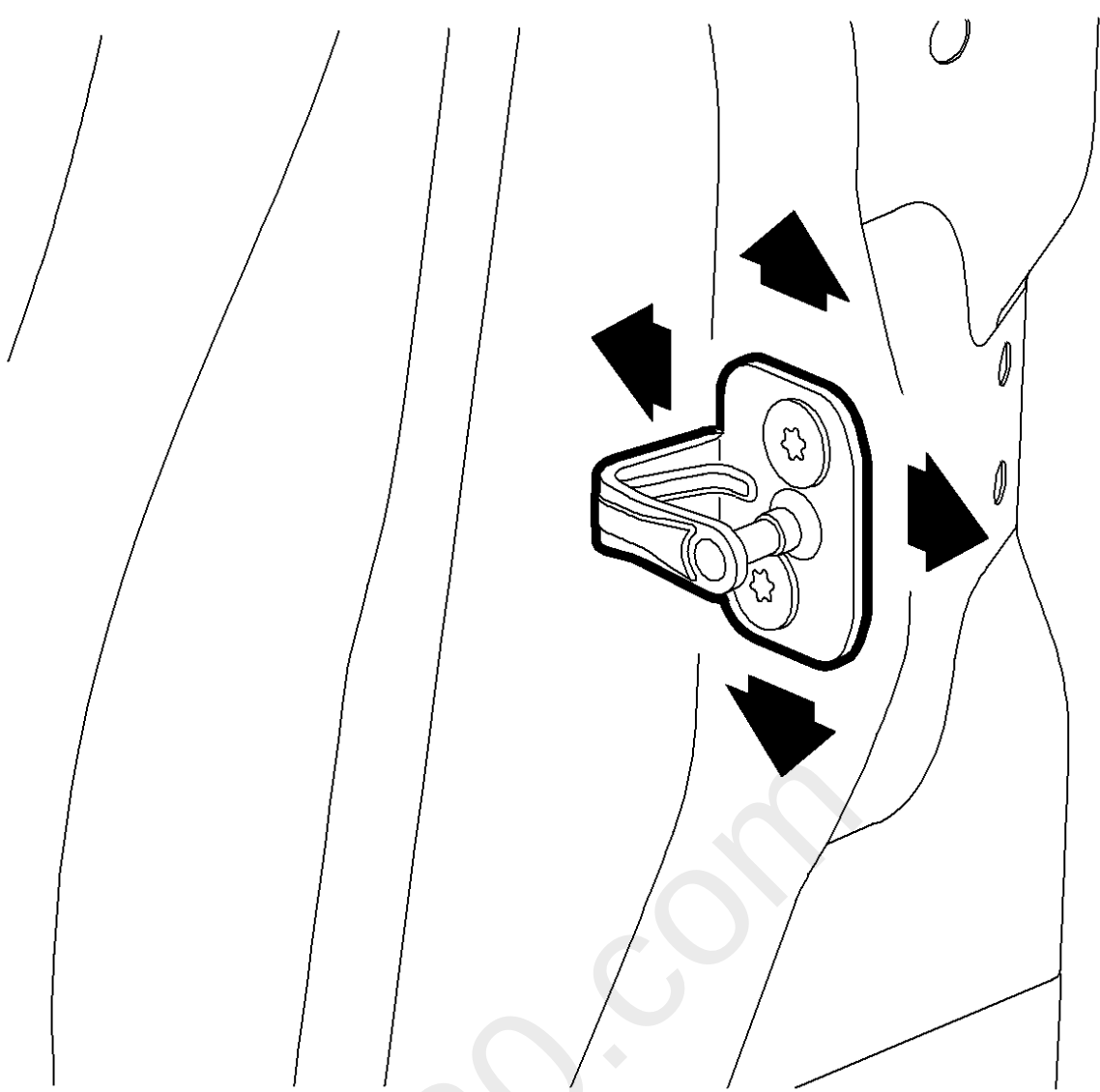


Fig.37: View Of Door Striker

Courtesy of GENERAL MOTORS COMPANY

1. Ensure the door is properly aligned within the door opening before proceeding with the 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 striker screws. Tighten the rear side door striker screws to 22 N.m (16 lb ft).

REAR SIDE DOOR LOCK STRIKER REPLACEMENT

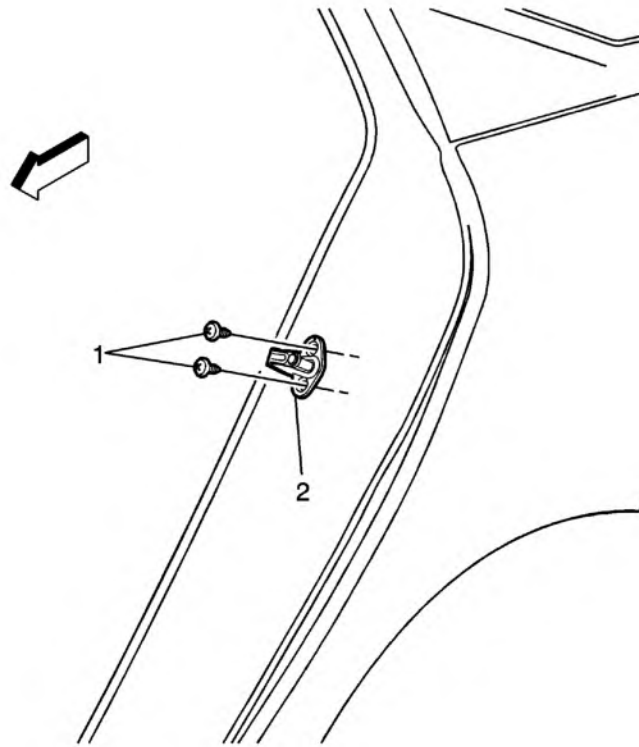


Fig. 38: Rear Side Door Lock Striker
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
1	Rear Side Door Lock Striker Screw (Qty: 2) CAUTION: Refer to Fastener Caution . Procedure Unclip the door lock striker cover from the striker to expose the screws, if equipped. Tighten 22 N.m (16 lb ft)
2	Rear Side Door Lock Striker Procedures 1. Ensure the spacer is in place. 2. Ensure proper alignment after installation. Refer to Rear Side Door Lock Striker Adjustment.

LIFTGATE RELEASE SWITCH REPLACEMENT

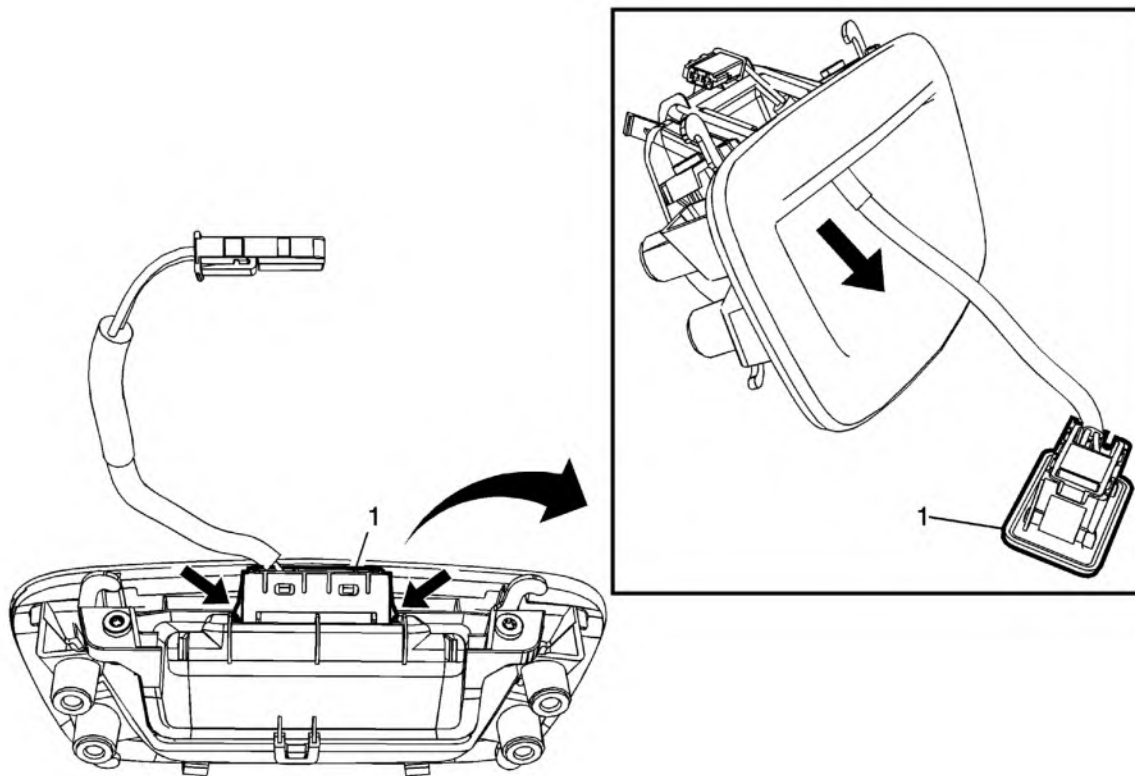


Fig. 39: Liftgate Release Switch

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the liftgate outside handle. Refer to Liftgate Outside Handle Replacement .	
1	Liftgate Release Switch Procedure Press in the retainers on the sides and press the release switch out from the outside handle.

DOOR LOCK SWITCH REPLACEMENT - DRIVER SIDE (BUICK)

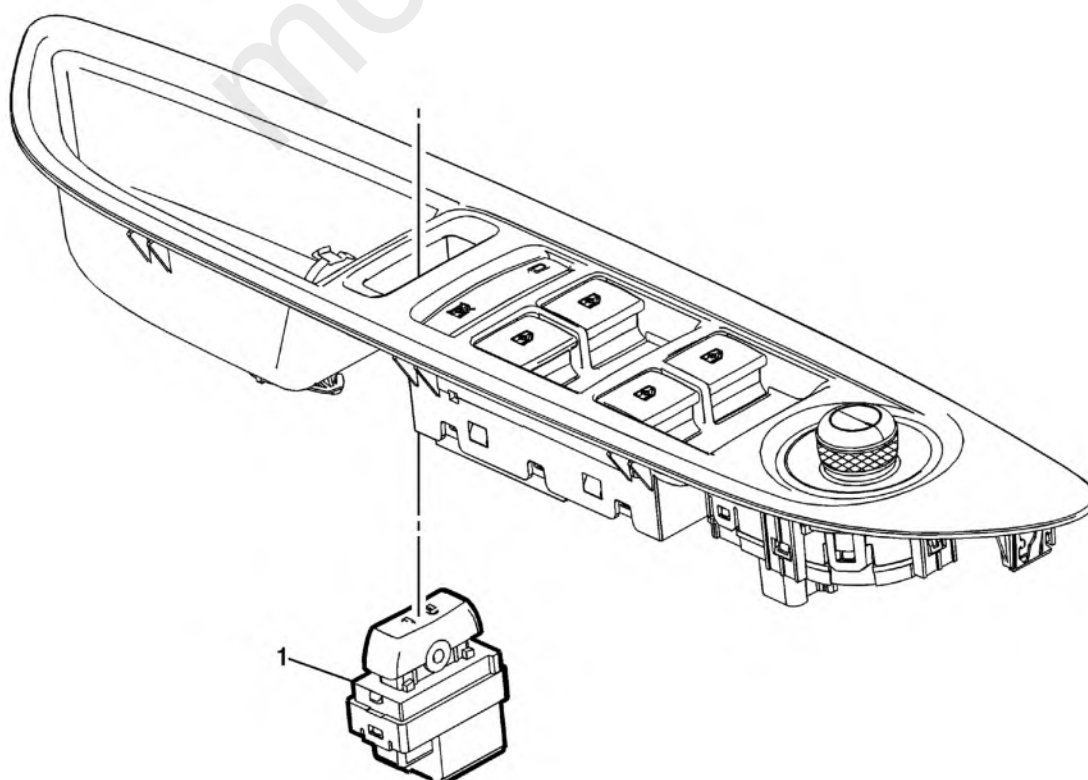


Fig. 40: Door Lock Switch - Driver Side (Encore)

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door armrest switch mount plate driver side. Refer to Front Side Door Armrest Switch Mount Plate Replacement (Driver Side Door, Buick) .	
1	Door Lock Switch Driver Side Assembly Procedure 1. Release tabs on switch to remove from front side door armrest switch mount plate. 2. Refer to Control Module References for programming and set up procedures.

DOOR LOCK SWITCH REPLACEMENT - DRIVER SIDE (CHEVROLET)

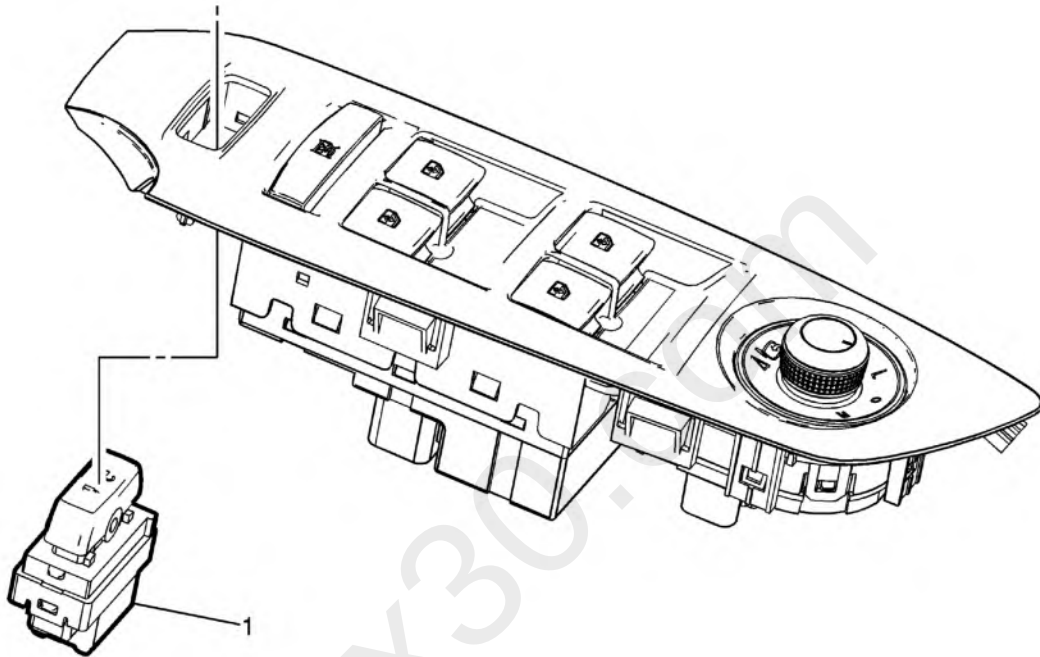


Fig. 41: Door Lock Switch - Driver Side
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door armrest switch mount plate driver side. Refer to Front Side Door Armrest Switch Mount Plate Replacement (Driver Side Door, Chevrolet) .	
1	Door Lock Switch Driver Side Assembly Procedure 1. Release tabs on switch to remove from front side door armrest switch mount plate. 2. Refer to Control Module References for programming and set up procedures.

DOOR LOCK SWITCH REPLACEMENT - PASSENGER FRONT (BUICK)

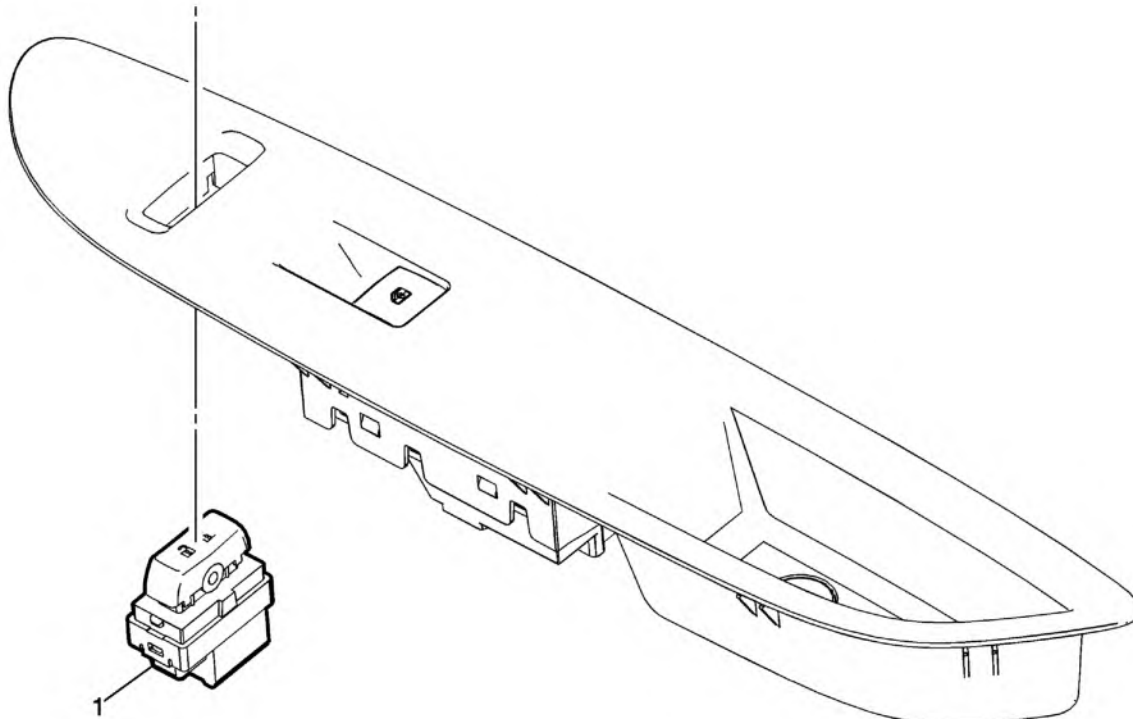


Fig. 42: Door Lock Switch - Passenger Front (Encore).

Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door armrest switch mount plate - passenger side door. Refer to Front Side Door Armrest Switch Mount Plate Replacement (Passenger Side Door, Buick) .	
1	Door Lock Switch Passenger Front Assembly Procedure 1. Release tabs on switch to remove from front side door armrest switch mount plate. 2. Refer to Control Module References for programming and set up procedures.

DOOR LOCK SWITCH REPLACEMENT - PASSENGER FRONT (CHEVROLET)

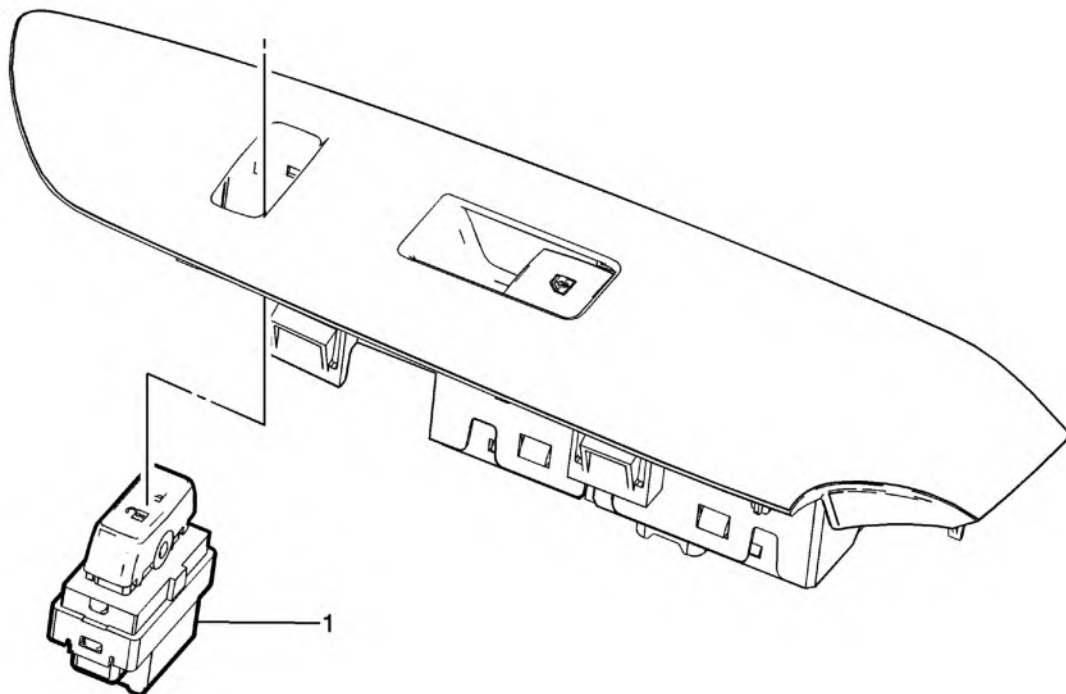


Fig. 43: Door Lock Switch - Passenger Front (Trax).
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
Preliminary Procedure Remove the front side door armrest switch mount plate - passenger side door. Refer to Front Side Door Armrest Switch Mount Plate Replacement (Passenger Side Door, Chevrolet) .	
1	Door Lock Switch Passenger Front Assembly Procedure 1. Release tabs on switch to remove from front side door armrest switch mount plate. 2. Refer to Control Module References for programming and set up procedures.

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
- Instrument cluster
- Driver door latch
- Passenger door latch
- Left rear door latch
- Right rear door latch
- Liftgate door latch
- Driver window motor (AXG)
- Passenger window motor (AEF)
- Left rear window motor (AER)
- Right rear window motor (AER)

- Passenger window switch (AED)
- Left rear window switch (AEQ)
- Right rear window switch (AEQ)

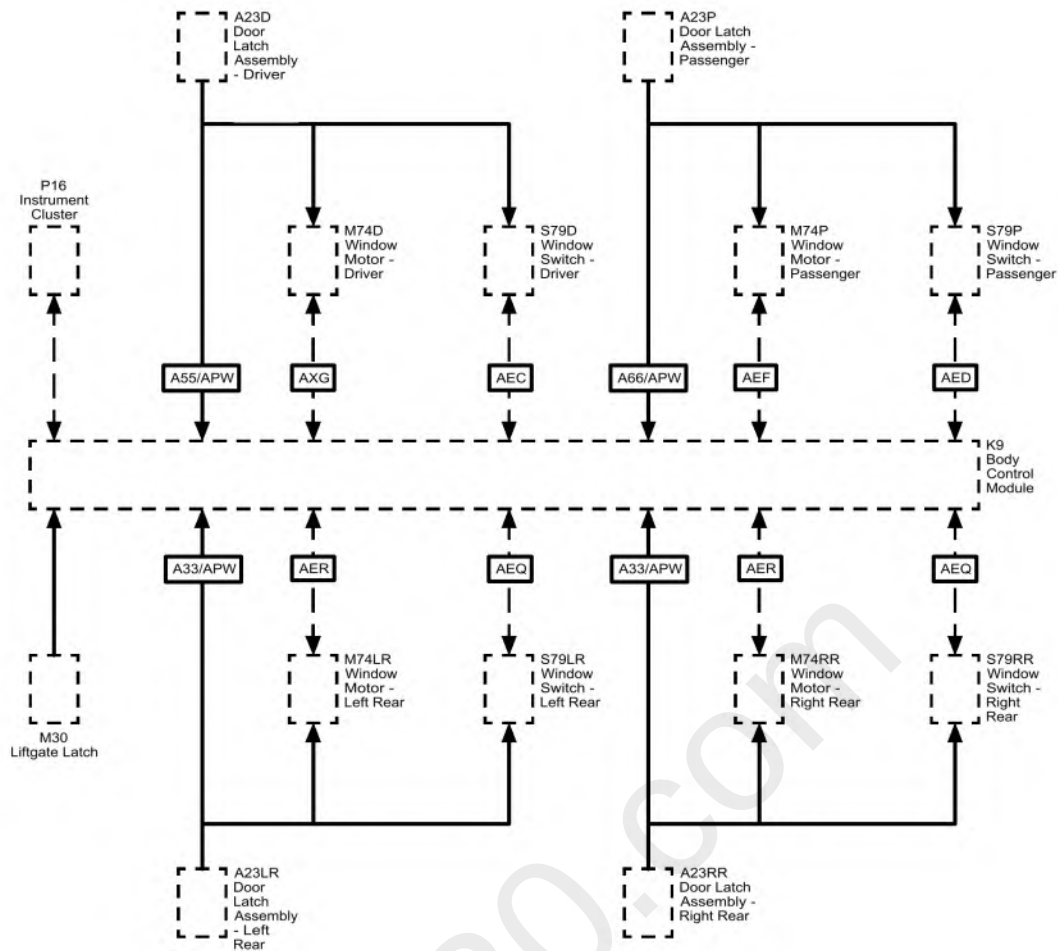


Fig. 44: Door Ajar Indicator GG SUV Block Diagram
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
AXG	WINDOW REG DRVR DR: POWER OPERATED, EXPRESS UP/DOWN
AEC	WINDOW REG DRVR DR: POWER OPERATED, EXPRESS DOWN
AEF	WINDOW REG PASS DR: POWER OPERATED, EXPRESS UP/DOWN
AED	WINDOW REG PASS DR: POWER OPERATED, EXPRESS DOWN
AER	WINDOW REG REAR DR: POWER OPERATED, EXPRESS UP/DOWN
AEQ	WINDOW REG REAR DR: POWER OPERATED, EXPRESS DOWN
AER	WINDOW REG REAR DR: POWER OPERATED, EXPRESS UP/DOWN
AEQ	WINDOW REG REAR DR: POWER OPERATED, EXPRESS DOWN
A66	WINDOW REG PASS DR: POWER OPERATED
A55	WINDOW REG DRVR DR: POWER OPERATED
A33	WINDOW REG REAR DR: POWER OPERATED
A33	WINDOW REG REAR DR: POWER OPERATED
P16	P16 Instrument Cluster
M30	M30 Liftgate Latch
A23P	A23P Door Latch Assembly - Passenger
A23D	A23D Door Latch Assembly - Driver
A23LR	A23LR Door Latch Assembly - Left Rear
A23RR	A23RR Door Latch Assembly - Right Rear

Callout	Component Name
M74D	M74D Window Motor - Driver
S79D	S79D Window Switch - Driver
M74P	M74P Window Motor - Passenger
S79P	S79P Window Switch - Passenger
M74LR	M74LR Window Motor - Left Rear
M74RR	M74RR Window Motor - Right Rear
S79LR	S79LR Window Switch - Left Rear
S79RR	S79RR Window Switch - Right Rear
K9	K9 Body Control Module

Driver, Passenger and Rear Door Ajar (AXG, AEF, AER)

The window motors provide a 12V signal to the respective door ajar switch within the door latch to indicate the status of the door. When the door is open, the contract within the ajar switch closes providing a ground part for the signal circuit. The window motor will detect the voltage drop in the ajar signal circuit and will send a serial data message to the body control module. The body control module will then send a message to the instrument cluster which will illuminate the door ajar icon.

Passenger and Rear Doors Ajar (AER, AEQ)

The passenger and rear window switches provide a 12V signal to the respective door ajar switch within the door latch to indicate the status of the door. When the door is open, the contract within the ajar switch closes providing a ground part for the signal circuit. The window switch will detect the voltage drop in the ajar signal circuit and will send a serial data message to the body control module. The body control module will then send a message to the instrument cluster which will illuminate the door ajar icon.

Driver, Passenger and Rear Doors Ajar (With A55, A66, A33 or APW)

The body control module provides a 12V signal to each door ajar switch within the door latch to indicate the status of the door. When the door is open, the contract within the ajar switch closes providing a ground part for the signal circuit. The body control module will detect the voltage drop in the ajar signal circuit and will send a message to the instrument cluster which will illuminate the door ajar icon

Liftgate Ajar

The body control module provides a 12 V signal to the liftgate ajar signal circuit. The liftgate latch contains an ajar switch which is normally open when the liftgate is closed. When the liftgate is opened, the normally open ajar switch closes. With the ajar switch closed, ground is provided to the ajar switch signal circuit. The body control module detects the voltage drop and sends a serial data message to the instrument panel to display the door ajar indicator

FUEL FILL DOOR DESCRIPTION AND OPERATION (NO8 ONLY)

Fuel Door Unlatch System Components

- Body control module (BCM)
- Fuel door unlatch actuator

The locking and unlocking of the fuel door is a function of the power door lock system. The fuel door unlatch actuator shares the circuit with the driver door latch. The body control module (BCM), upon receipt of a lock switch lock or unlock signal, will switch the appropriate door latch, as well as a fuel filler door unlatch actuator control circuits to B+ voltage. The opposing side of the door latch and fuel filler door unlatch actuator is connected to ground provided by the BCM through the other the door latch control circuits, along with the fuel filler door unlatch actuator, will lock or unlock as commanded.

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

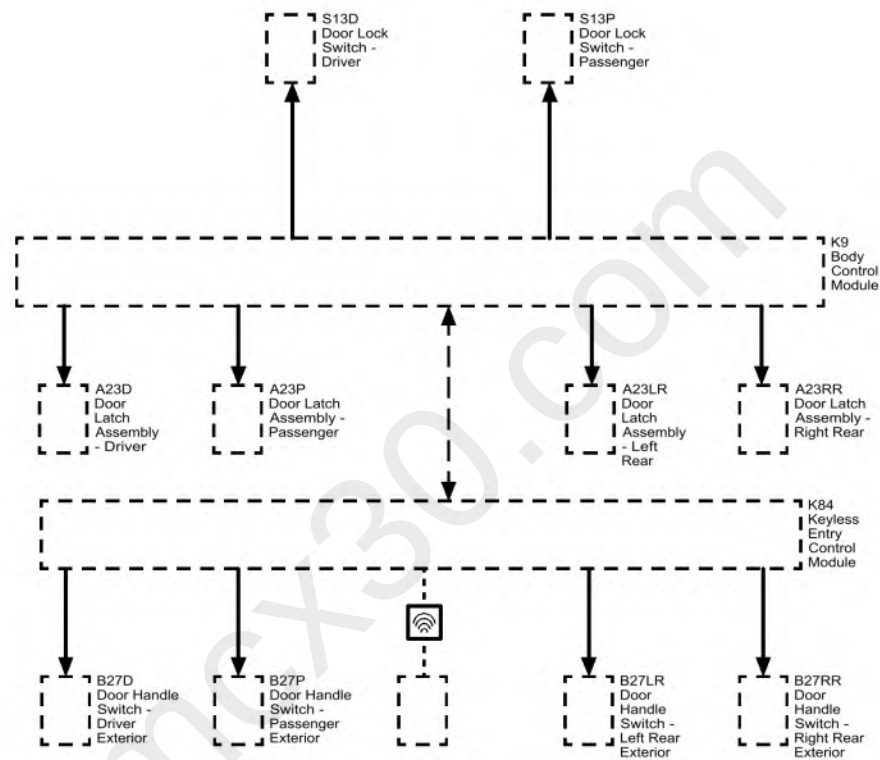


Fig. 45: Power Door Locks System Block Diagram
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
WL	Wireless
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

Callout	Component Name
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

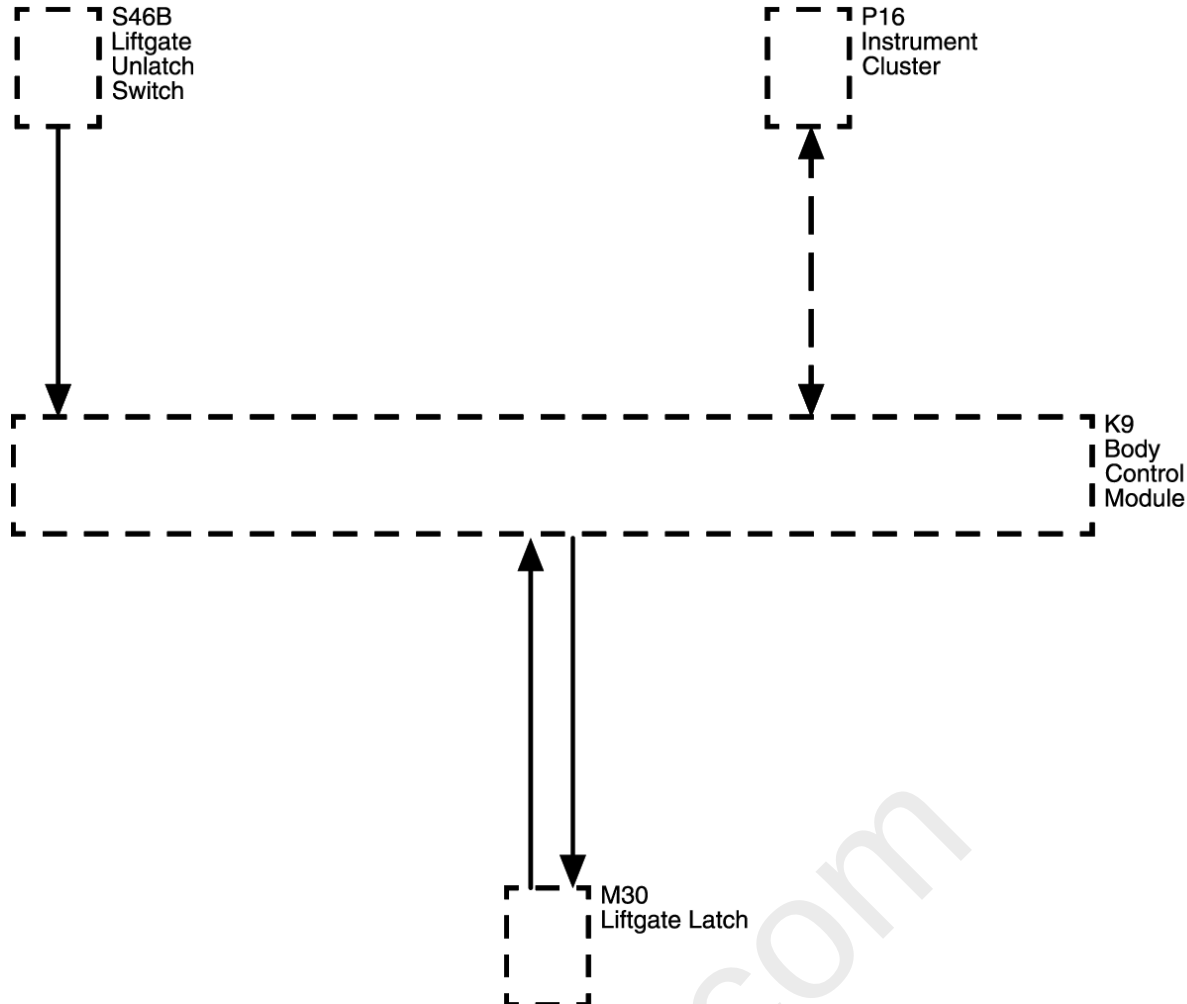


Fig. 46: Liftgate Release Block Diagram
 Courtesy of GENERAL MOTORS COMPANY

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 Unlock has been commanded, the BCM will recognize the request and will provide voltage to the release relay.

Liftgate Latch Assembly

When BCM receives a liftgate release command from the liftgate unlatch switch, the BCM applies brief pulse of voltage to the liftgate unlatch relay control circuit, which energizes the coil side of the relay. The switch side of the liftgate unlatch relay then momentarily closes, supplying a brief pulse of battery positive voltage to the liftgate latch assembly. The liftgate latch assembly 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.

Keyless Entry Transmitter

All doors of the vehicle must first be commanded to UNLOCK prior to pressing the liftgate unlatch switch. The BCM monitors the status of the vehicle door latches. If the passenger doors are locked, the BCM will ignore the signal from the liftgate unlatch switch. Pressing the appropriate button on the

keyless entry transmitter will send a request to the remote control door lock receiver which will in turn send a serial data message to unlock all doors.

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