

2008 Isuzu Ascender LS

2008 Accessories & Equipment Mirrors - Ascender, Envoy & Trailblazer

2008 Accessories & Equipment

Mirrors - Ascender, Envoy & Trailblazer

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Inside Rearview Mirror	2 N.m	18 lb in
Outside Rearview Mirror Bolts	10 N.m	89 lb in
Outside Rearview Mirror Motor Screws	10 N.m	89 lb in

SCHEMATIC & ROUTING DIAGRAMS

INSIDE REARVIEW MIRROR SCHEMatics

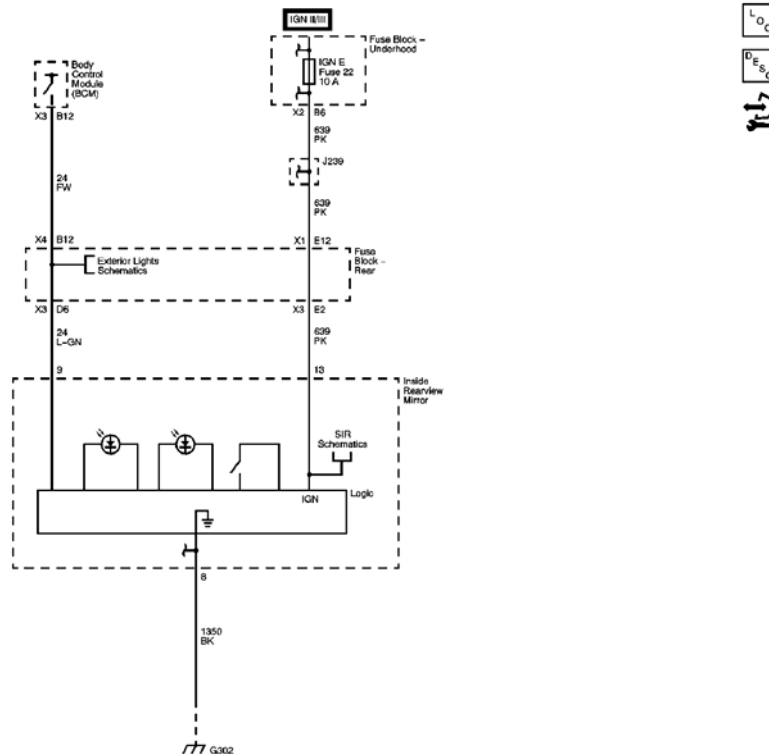


Fig. 1: Inside Rearview Mirror Schematic
Courtesy of GENERAL MOTORS CORP.

OUTSIDE REARVIEW MIRROR SCHEMatics

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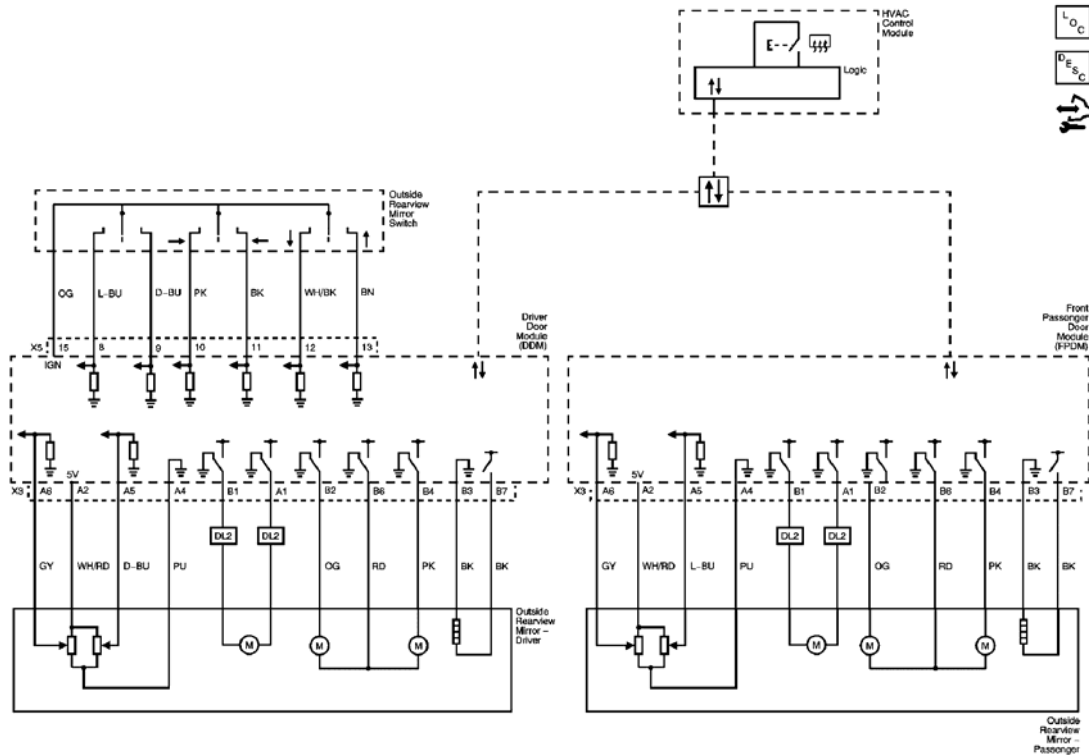


Fig. 2: Outside Rearview Mirror Schematic
 Courtesy of GENERAL MOTORS CORP.

DIAGNOSTIC INFORMATION & PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
DTC B1550	B1550: Mirror LF/RF Select Switch Malfunction
DTC B1720	B1720: Mirror Up and Down Control Switch Circuit
DTC B1721	B1721: Mirror Left and Right Control Switch Circuit
DTC B1723	B1723: Mirror Motor Control Circuit 1 Malfunction
DTC B1724	B1724: Mirror Motor Control Circuit 2 Malfunction

DTC B1550

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.

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- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

DTC B1550

Mirror LF/RF Select Switch Malfunction

Circuit/System Description

The driver door module (DDM) supplies battery positive voltage to the power mirror switch. When the mirror select switch is placed in the left or right mirror position, the appropriate signal circuit is switched to 12 volts. The DDM senses the voltage change and allows control of the selected outside rearview mirror.

Conditions for Running the DTC

- Battery voltage must be between 9-16 volts.
- The ignition switch is in the ON position.

Conditions for Setting the DTC

The DDM senses an active state on both mirror select switch circuits greater than 3 seconds.

Action Taken When the DTC Sets

The DDM ignores the continuous inputs from the switch. The DDM will respond to all other valid switch inputs.

Conditions for Clearing the DTC

- A current DTC will clear when the fault is no longer present.
- A history DTC will clear after 40 malfunction-free ignition cycles

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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

Command the left and right outside mirror to move up, down, left and right using the mirror directional switch. The mirror should move in the commanded direction.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X5 at the DDM.
2. Ignition ON, verify the scan tool Mirror Select Switch parameter is Neutral.
 - If not the specified value, replace the DDM.
3. Ignition OFF, reconnect the harness connector X5 at the DDM.
4. Ignition ON, observe the scan tool Mirror Select Switch parameter while cycling the mirror select switch between the left and right positions. The parameter should change between Neutral, Left, and Right.
 - If the parameter does not cycle between the specified values, replace the outside rearview mirror switch.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Power Mirror Switch Replacement**
- **Control Module References** for DDS or PDS replacement, setup, and programming

DTC B1720

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

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DTC B1720

Mirror Up and Down Control Switch Circuit

Circuit/System Description

The driver door module (DDM) supplies battery positive voltage to the power mirror switch. When the mirror direction switch is placed in the up or down position, the appropriate signal circuit is switched to battery voltage. The driver door module senses the voltage change and activates the selected outside rearview mirror in the appropriate direction.

Conditions for Running the DTC

- Battery voltage must be between 9-16 volts.
- The ignition switch is in the ON position.

Conditions for Setting the DTC

The DDM senses an active state on both the mirror switch up and down signal circuits greater than 3 seconds.

Action Taken When the DTC Sets

The DDM ignores the continuous inputs from the switch. The DDM will respond to all other valid switch inputs.

Conditions for Clearing the DTC

- A current DTC will clear when the fault is no longer present.
- A history DTC will clear after 40 malfunction-free ignition cycles.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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

Command the left and right outside mirror to move up, down, left and right using the mirror directional switch. The mirror should move in the commanded direction.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X5 at the DDM.
2. Ignition ON, verify the scan tool Mirror Motor parameter is Idle.
 - If not the specified value, replace the DDM.
3. Ignition OFF, reconnect the harness connector X5 at the DDM.
4. Ignition ON, observe the scan tool Mirror Motor parameter while cycling the mirror directional switch between the up, down, left and right positions. The parameter should change between Idle, Up, Down, Left, and Right.
 - If the parameter does not cycle between the specified values, replace the outside rearview mirror switch.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Power Mirror Switch Replacement**
- **Control Module References** for DDS or PDS replacement, setup, and programming

DTC B1721

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

DTC B1721

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Mirror Left and Right Control Switch Circuit

Circuit/System Description

The driver door module (DDM) supplies battery positive voltage to the power mirror switch. When the mirror direction switch is placed in the up or down position, the appropriate signal circuit is switched to battery voltage. The driver door module senses the voltage change and activates the selected outside rearview mirror in the appropriate direction.

Conditions for Running the DTC

- Battery voltage must be between 9-16 volts.
- The ignition switch is in the ON position.

Conditions for Setting the DTC

The DDM senses an active state on both the mirror switch left and right signal circuits greater than 3 seconds.

Action Taken When the DTC Sets

The DDM ignores the continuous inputs from the switch. The DDM will respond to all other valid switch inputs.

Conditions for Clearing the DTC

- A current DTC will clear when the fault is no longer present.
- A history DTC will clear after 40 malfunction-free ignition cycles.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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

Command the left and right outside mirror to move up, down, left and right using the mirror directional switch. The mirror should move in the commanded direction.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X5 at the DDM.
2. Ignition ON, verify the scan tool Mirror Motor parameter is Idle.
 - If not the specified value, replace the DDM.
3. Ignition OFF, reconnect the harness connector X5 at the DDM.
4. Ignition ON, observe the scan tool Mirror Motor parameter while cycling the mirror directional switch between the up, down, left and right positions. The parameter should change between Idle, Up, Down, Left, and Right.
 - If the parameter does not cycle between the specified values, replace the outside rearview mirror switch.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Power Mirror Switch Replacement**
- **Control Module References** for DDS or PDS replacement, setup, and programming

DTC B1723

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

DTC B1723

Mirror Motor Control Circuit 1 Malfunction

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Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
5-Volt Reference	2	2	2	-
Driver/Passenger Horizontal Position Data Signal	2	2	2	-
Driver/Passenger Vertical Position Data Signal	2	2	2	-
Driver/Passenger Mirror Right Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Driver/Passenger Mirror Common	1	1	1	-
Driver/Passenger Mirror Down Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Low Reference	-	2	2	-
1. Power Mirror Malfunction 2. Memory Mirror Malfunction				

Circuit/System Description

The driver door module (DDM) or front passenger door module (FPDM) controls the mirror horizontal and vertical motors through the use of bi-directional motor controls. When the mirror is commanded up, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor right/down motors common circuit and ground is supplied through the driver/passenger mirror motor down control circuit. When the mirror is commanded down, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor down control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Horizontal controls operate in the same manner with the driver/passenger mirror motor right/down motors common circuit supplying voltage and the driver/passenger mirror motor right control circuit supply a ground to the mirror horizontal motor when the mirror is commanded right. When the mirror is commanded left, voltage is supplied to the mirror horizontal motor through the driver/passenger mirror motor right control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Conditions for Running the DTC

The power mirror is being commanded left, right, up, or down.

Conditions for Setting the DTC

- If the mirror motor right control circuit is shorted to battery voltage and the mirror is commanded left.
- If the mirror motor down control circuit is shorted to battery voltage and the mirror is commanded up.
- If the outside rearview mirror motor down control circuit is shorted to ground and the mirror is commanded down.
- If the outside rearview mirror motor right control circuit is shorted to ground and the mirror is commanded right.

Action Taken When the DTC Sets

Mirror movement is suspended so long as the fault is present.

Conditions for Clearing the DTC

- A current DTC will clear when the fault is no longer present.
- A history DTC will clear after 40 malfunction-free ignition cycles.

Reference Information**Schematic Reference****Outside Rearview Mirror Schematics****Connector End View Reference****Component Connector End Views****Description and Operation****Outside Mirror Description and Operation (Heated Mirrors)****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**

Command the left and right outside mirror to move up, down, left and right using the mirror directional switch. The mirror should move in the commanded direction.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X3 at the FPDM.
2. Ignition ON, verify a test lamp does not illuminate between the following control circuit terminals and ground:
 - Control circuit terminal B4

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- Control circuit terminal B2
 - Control circuit terminal B6
 - If the test lamp illuminates, test the appropriate control circuit for a short to voltage.
3. Ignition OFF, test for infinite resistance between the following control circuits and ground:
- Control circuit terminal B4
 - Control circuit terminal B2
 - Control circuit terminal B6
 - If less the specified value, test the appropriate control circuit for a short to ground.
4. Test for 40-100 ohms of resistance between the control circuit terminal B4 and the control circuit terminal B6.
- If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
5. Test for 40-100 ohms of resistance between the control circuit terminal B2 and the control circuit terminal B6.
- If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
6. If all circuits test normal, replace the FPDM.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Outside Rearview Mirror Motor Replacement**
- **Control Module References** for DDS or PDS replacement, setup, and programming

DTC B1724

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provides an overview of each diagnostic category.

DTC Descriptor

DTC B1724

Mirror Motor Control Circuit 2 Malfunction

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
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5-Volt Reference	2	2	2	-
Driver/Passenger Horizontal Position Data Signal	2	2	2	-
Driver/Passenger Vertical Position Data Signal	2	2	2	-
Driver/Passenger Mirror Right Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Driver/Passenger Mirror Common	1	1	1	-
Driver/Passenger Mirror Down Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Low Reference	-	2	2	-
1. Power Mirror Malfunction 2. Memory Mirror Malfunction				

Circuit/System Description

The driver door module (DDM) or front passenger door module (FPDM) controls the mirror horizontal and vertical motors through the use of bi-directional motor controls. When the mirror is commanded up, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor right/down motors common circuit and ground is supplied through the driver/passenger mirror motor down control circuit. When the mirror is commanded down, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor down control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Horizontal controls operate in the same manner with the driver/passenger mirror motor right/down motors common circuit supplying voltage and the driver/passenger mirror motor right control circuit supply a ground to the mirror horizontal motor when the mirror is commanded right. When the mirror is commanded left, voltage is supplied to the mirror horizontal motor through the driver/passenger mirror motor right control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Conditions for Running the DTC

The power mirror is being commanded left, right, up, or down.

Conditions for Setting the DTC

- If the mirror motor up/left control circuit is shorted to battery voltage and the mirror is commanded down or right.
- If the mirror motor up/left control circuit is shorted to ground and the mirror is commanded up or left.

Action Taken When the DTC Sets

Mirror movement is suspended so long as the fault is present.

Conditions for Clearing the DTC

- A current DTC will clear when the fault is no longer present.

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- A history DTC will clear after 40 malfunction-free ignition cycles.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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

Command the left and right outside mirror to move up, down, left and right using the mirror directional switch. The mirror should move in the commanded direction.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X3 at the DDM.
2. Ignition ON, verify a test lamp does not illuminate between the following control circuit terminals and ground:
 - Control circuit terminal B4
 - Control circuit terminal B2
 - Control circuit terminal B6
 - If the test lamp illuminates, test the appropriate control circuit for a short to voltage.
3. Ignition OFF, test for infinite resistance between the following control circuits and ground:
 - Control circuit terminal B4
 - Control circuit terminal B2

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- Control circuit terminal B6
 - If less the specified value, test the appropriate control circuit for a short to ground.
- 4. Test for 40-100 ohms of resistance between the control circuit terminal B4 and the control circuit terminal B6.
 - If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
- 5. Test for 40-100 ohms of resistance between the control circuit terminal B2 and the control circuit terminal B6.
 - If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
- 6. If all circuits test normal, replace the DDM.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Outside Rearview Mirror Motor Replacement**
- **Control Module References** for DDS or PDS replacement, setup, and programming

HEATED MIRRORS INOPERATIVE

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.

Circuit/System Description

The driver door switch (DDS) and passenger door switch (PDS) supply voltage to the outside rearview mirror heater elements upon receipt of a serial data message from the HVAC module indicating that the rear defrost system is active. The door switch supplies B+ through the driver/passenger mirror heating element supply voltage circuit when a request is seen. Ground is applied through the driver/passenger mirror heating low reference circuit.

Diagnostic Aids

The automatic day-night feature of the inside rearview mirror may not operate properly or become inoperative due to a short to battery positive voltage in the backup lighting system.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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, press the rear window defogger switch. Verify the rear window defogger indicator illuminates.
 - If the rear window defogger indicator does not illuminate.
2. Rear window defogger ON, verify both the left and right outside mirror glass become warm.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X3 at the appropriate door module.
2. Ignition ON, verify a test lamp does not illuminate between the supply voltage circuit terminal B7 and ground.
 - If the test lamp illuminates, test the supply voltage circuit for a short to voltage.
3. Ignition OFF, test for infinite resistance between the supply voltage circuit terminal B7 and ground.
 - If less than the specified value, test the supply voltage circuit for a short to ground. If the circuit tests normal, test or replace the applicable rearview mirror face.
4. Test for 5-10 ohms of resistance between the supply voltage circuit terminal B7 and the low reference circuit terminal B3.
 - If not within the specified range, test the supply voltage circuit and the low reference circuit for an open/high resistance. If the circuits test normal, test or replace the appropriate rearview mirror face.
5. If all circuits test normal, replace the appropriate door module.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

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- **Outside Rearview Mirror Glass Replacement**
- **Control Module References** for DDM or FPDM replacement, setup and programming

AUTOMATIC DAY-NIGHT MIRRORS INOPERATIVE

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.

Circuit/System Description

The automatic day-night rear view mirror uses 2 photocell sensors that detect an increase in light. One sensor is located in the rear side of the mirror. This sensor determines the light condition present at the mirror face. The other sensor is the ambient light sensor, located on the front of the mirror or windshield side. This sensor determines the amount of light present at the mirror. When the ambient light sensor senses a low light condition and a high light condition from behind at the headlight sensor, the inside rearview mirror will automatically darken the face of the mirror.

Diagnostic Aids

The automatic day-night feature of the inside rearview mirror may not operate properly or become inoperative due to a short to battery positive voltage in the backup lighting system.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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

Ignition ON, place the gear shifter into the drive position, cover the ambient light sensor that faces the front windshield. Shine a flashlight into the rearview mirror face. The face of the mirror should darken.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the rearview mirror.
2. Test for less than 1 ohm of resistance between the ground circuit terminal 8 and ground.
 - If greater than the specified range, test the ground circuit for an open/high resistance.
3. Ignition ON, verify that a test lamp illuminates between the voltage supply circuit terminal 13 and ground.
 - If the test lamp does not illuminate, test the voltage supply circuit for a short to ground or an open/high resistance.
4. With the transmission in PARK, test for less than 0.5 volts between the backup lamp supply voltage circuit terminal 9 and ground.
 - If the voltage is greater than the specified range, test the voltage circuit for a short to B+.
5. With the transmission in REVERSE, test for greater than 11 volts between the backup lamp supply voltage circuit and ground.
 - If less than the specified range, test the voltage circuit for an open/high resistance.
6. If all circuits test normal, replace the rearview mirror.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Inside Rearview Mirror Replacement

POWER MIRROR FOLDING INOPERATIVE

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.

Circuit/System Description

The driver door module (DDM) and front passenger door module (FPDM) control the power folding or power extending functions of the outside rearview mirrors. The folding mirror motors are controlled by using bi-directional motor controls through the folding mirror motor retract control circuit and the folding mirror motor

extend control circuit.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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, observe the scan tool Mirror Folding Operation parameter while cycling the mirror fold switch between the extend and retract positions. The parameter should change between Idle, Extend, and Retract.
 - If the parameter does not cycle between the specified values, replace the DDM.
2. Command the power folding mirrors to extend and retract using the mirror fold switch. Both mirrors should extend and retract as commanded.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X3 at the appropriate door module.
2. Ignition ON, verify a test lamp does not illuminate between the following circuit terminals and ground:
 - Control circuit terminal B1
 - Control circuit terminal A1
 - If the test lamp illuminates, test the appropriate circuit for a short to voltage
3. Ignition OFF, test for infinite resistance between the following circuits and ground:

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- Control circuit terminal B1
- Control circuit terminal A1
 - If less than the specified value, test the appropriate circuit for a short to ground. If the circuits test normal, test or replace the rearview mirror motor
- 4. Test for 5-15 ohms of resistance between the control circuit terminal B1 and the control circuit terminal A1.
 - If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
- 5. If all circuits test normal, replace the appropriate door module.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Outside Rearview Mirror Motor Replacement**
- **Control Module References** for DDM or FPDM replacement, setup, and programming

POWER MIRRORS INOPERATIVE

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
5-Volt Reference	2	2	2	-
Driver/Passenger Horizontal Position Data Signal	2	2	2	-
Driver/Passenger Vertical Position Data Signal	2	2	2	-
Driver/Passenger Mirror Right Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Driver/Passenger Mirror Common	1	1	1	-
Driver/Passenger Mirror Down Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Low Reference	-	2	2	-
1. Power Mirror Malfunction 2. Memory Mirror Malfunction				

Circuit/System Description

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The driver door module (DDM) or front passenger door module (FPDM) controls the mirror horizontal and vertical motors through the use of bi-directional motor controls. When the mirror is commanded up, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor right/down motors common circuit and ground is supplied through the driver/passenger mirror motor down control circuit. When the mirror is commanded down, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor down control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Horizontal controls operate in the same manner with the driver/passenger mirror motor right/down motors common circuit supplying voltage and the driver/passenger mirror motor right control circuit supply a ground to the mirror horizontal motor when the mirror is commanded right. When the mirror is commanded left, voltage is supplied to the mirror horizontal motor through the driver/passenger mirror motor right control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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, observe the scan tool Mirror Select Switch parameter while cycling the mirror select switch between the left and right positions. The parameter should change between Neutral, Left, and Right.
 - If the parameter does not cycle between the specified values, replace the DDM.
2. Observe the scan tool Mirror Motor parameter while cycling the mirror directional switch between the up, down, left and right positions. The parameter should change between Idle, Up, Down, Left, and Right.

- If the parameter does not cycle between the specified values, replace the DDM
- 3. Command the left and right outside mirror to move up, down, left and right using the mirror directional switch. The mirrors should move in the commanded direction.
 - If either mirror does not move in all commanded directions, refer to **Mirror Motor Circuit Malfunction**.

Circuit/System Testing

Mirror Motor Circuit Malfunction

1. Ignition OFF, disconnect the harness connector X3 at the appropriate door module.
2. Ignition ON, verify a test lamp does not illuminate between the supply voltage circuit terminal B7 and ground.
 - Control circuit terminal B4
 - Control circuit terminal B2
 - Control circuit terminal B6
 - If the test lamp illuminates, test the appropriate control circuit for a short to voltage.
3. Ignition OFF, test for infinite resistance between the following control circuits and ground:
 - Control circuit terminal B4
 - Control circuit terminal B2
 - Control circuit terminal B6
 - If less the specified value, test the appropriate control circuit for a short to ground.
4. 4. Test for 40-100 ohms of resistance between the control circuit terminal B4 and the control circuit terminal B6.
 - If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
5. Test for 40-100 ohms of resistance between the control circuit terminal B2 and the control circuit terminal B6.
 - If not within the specified range, test both control circuits for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
6. If all circuits test normal, replace the appropriate door module.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Outside Rearview Mirror Motor Replacement**
- **Control Module References** for DDM or FPDM replacement, setup and programming

POWER MIRRORS - MEMORY FUNCTIONS INOPERATIVE

Diagnostic Instructions

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- 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
5-Volt Reference	2	2	2	-
Driver/Passenger Horizontal Position Data Signal	2	2	2	-
Driver/Passenger Vertical Position Data Signal	2	2	2	-
Driver/Passenger Mirror Right Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Driver/Passenger Mirror Common	1	1	1	-
Driver/Passenger Mirror Down Control	B1723, B1724	B1723, B1724	B1723, B1724	-
Low Reference	-	2	2	-
1. Power Mirror Malfunction 2. Memory Mirror Malfunction				

Circuit/System Description

The driver door module (DDM) or front passenger door module (FPDM) controls the mirror horizontal and vertical motors through the use of bi-directional motor controls. When the mirror is commanded up, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor right/down motors common circuit and ground is supplied through the driver/passenger mirror motor down control circuit. When the mirror is commanded down, voltage is supplied to the mirror vertical motor through the driver/passenger mirror motor down control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Horizontal controls operate in the same manner with the driver/passenger mirror motor right/down motors common circuit supplying voltage and the driver/passenger mirror motor right control circuit supply a ground to the mirror horizontal motor when the mirror is commanded right. When the mirror is commanded left, voltage is supplied to the mirror horizontal motor through the driver/passenger mirror motor right control circuit and ground is supplied through the driver/passenger mirror motor right/down motors common circuit.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

Component Connector End Views

Description and Operation

Outside Mirror Description and Operation (Heated Mirrors)

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

Observe the scan tool Mirror Horizontal Position and Mirror Vertical Position parameters. The reading should be between 0.2 volts and 4.8 volts and change as the mirror is moved, left, right, up, and down.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector X3 at the appropriate door switch.
2. Ignition ON, verify a test lamp does not illuminate between the following circuit terminals and ground:
 - 5-volt reference circuit terminal A2
 - Signal circuit terminal A5
 - Signal circuit terminal A6
 - Low reference circuit terminal A4
 - If the test lamp illuminates, test the appropriate circuit for a short to voltage.
3. Ignition OFF, test for infinite resistance between the following circuits and ground:
 - 5-volt reference circuit terminal A2
 - Signal circuit terminal A5
 - Signal circuit terminal A6
 - Low reference circuit terminal A4
 - If less than the specified value, test the appropriate circuit for a short to ground.
4. Test for 4K-7K ohms of resistance between the 5-volt reference circuit terminal A2 and the low reference circuit terminal A4.
 - If not within the specified range, test the 5-volt reference circuit and the low reference circuit for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
5. Test for 1K-7K ohms of resistance between the 5-volt reference circuit terminal A2 and the signal circuit

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terminal A5.

- If not within the specified range, test the signal circuit for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
6. Test for 1K-7K ohms of resistance between the 5-volt reference circuit terminal A2 and the signal circuit terminal A6.
 - If not within the specified range, test the signal circuit for an open/high resistance. If the circuits test normal, test or replace the rearview mirror motor.
 7. If all circuits test normal, replace the appropriate door module.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Outside Rearview Mirror Motor Replacement**
- **Control Module References** for DDS or PDS replacement, setup and programming

REPAIR INSTRUCTIONS

POWER MIRROR SWITCH REPLACEMENT

Removal Procedure

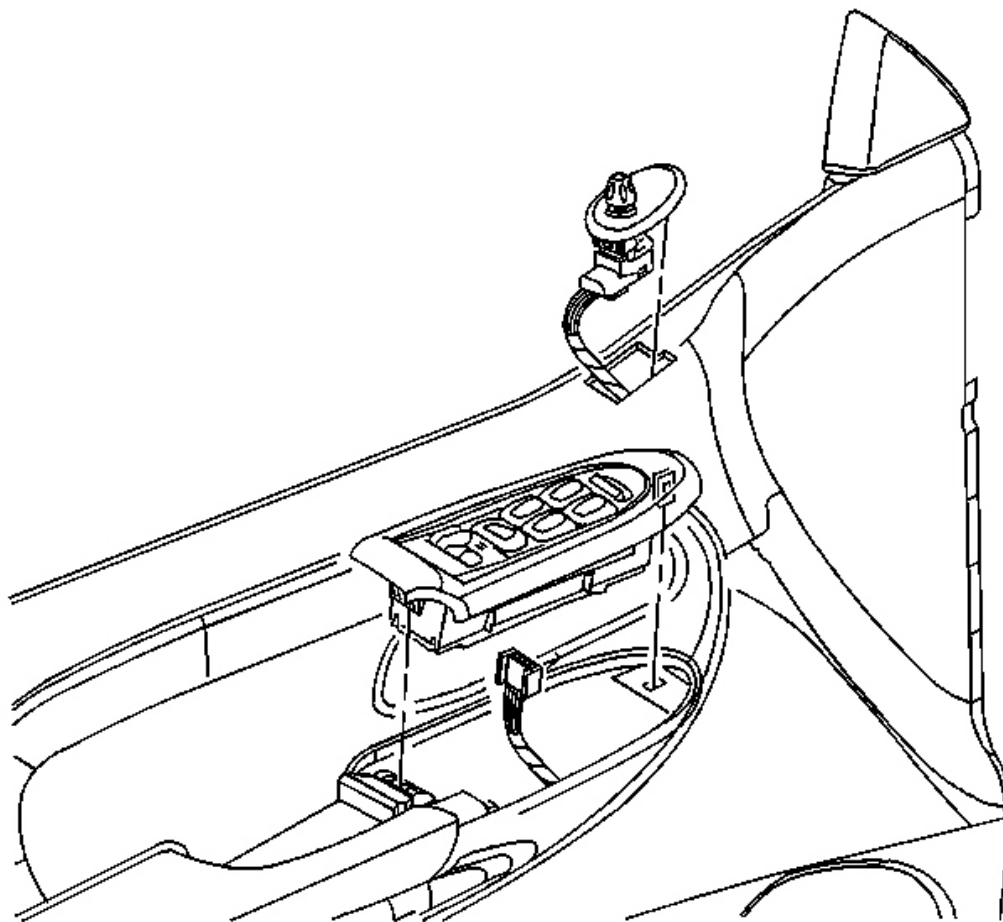


Fig. 3: View Of Power Mirror Switch & Driver Master Switch
Courtesy of GENERAL MOTORS CORP.

1. Carefully use a flat-bladed tool in order to release the outside mirror switch retaining tabs from the trim panel.
2. Remove the outside mirror switch from the trim panel.
3. Disconnect the electrical connector from the power folding mirror switch.

Installation Procedure

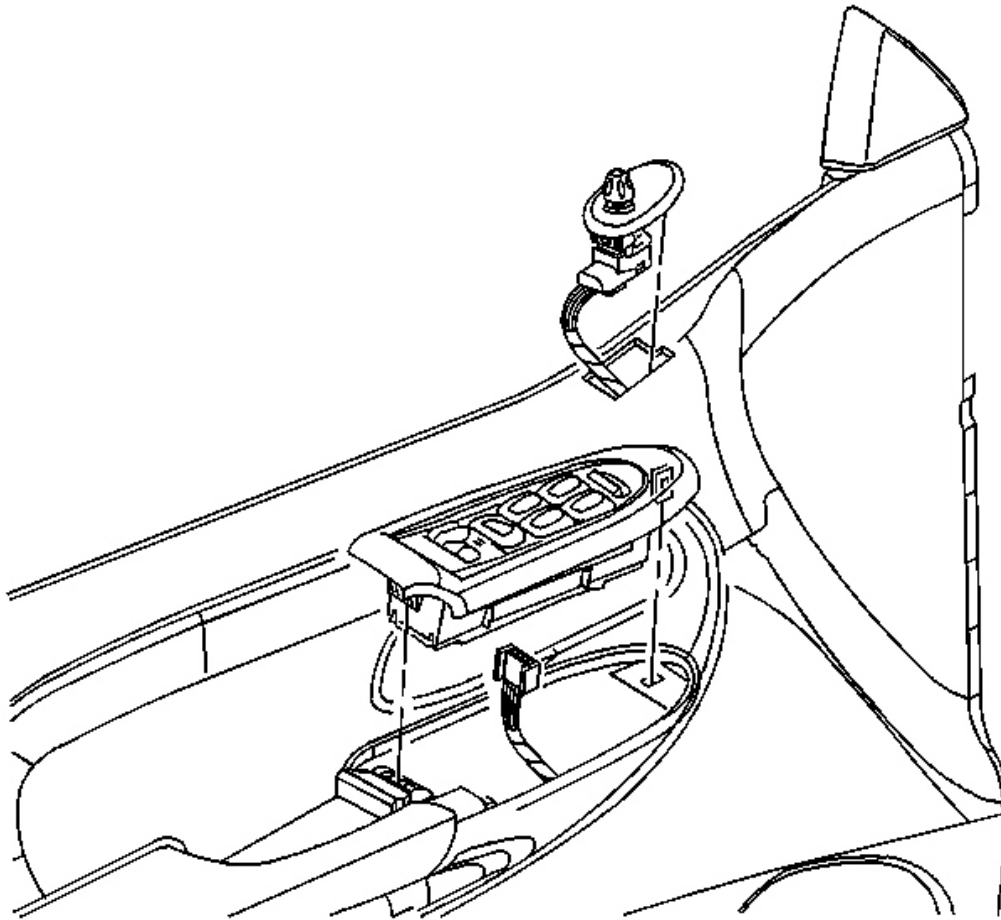


Fig. 4: View Of Power Mirror Switch & Driver Master Switch
Courtesy of GENERAL MOTORS CORP.

1. Connect the electrical connector to the power folding mirror switch.
2. Position the power folding mirror switch to the door trim panel.
3. Apply downward pressure to the power folding mirror switch, ensuring the retaining tabs are fully seated.

OUTSIDE REARVIEW MIRROR REPLACEMENT (DOOR MOUNTED)

Removal Procedure

1. Remove the door trim panel. Refer to **Front Side Door Trim Panel Replacement** .
2. Remove the outside rear view mirror (ORVM) harness from the door.

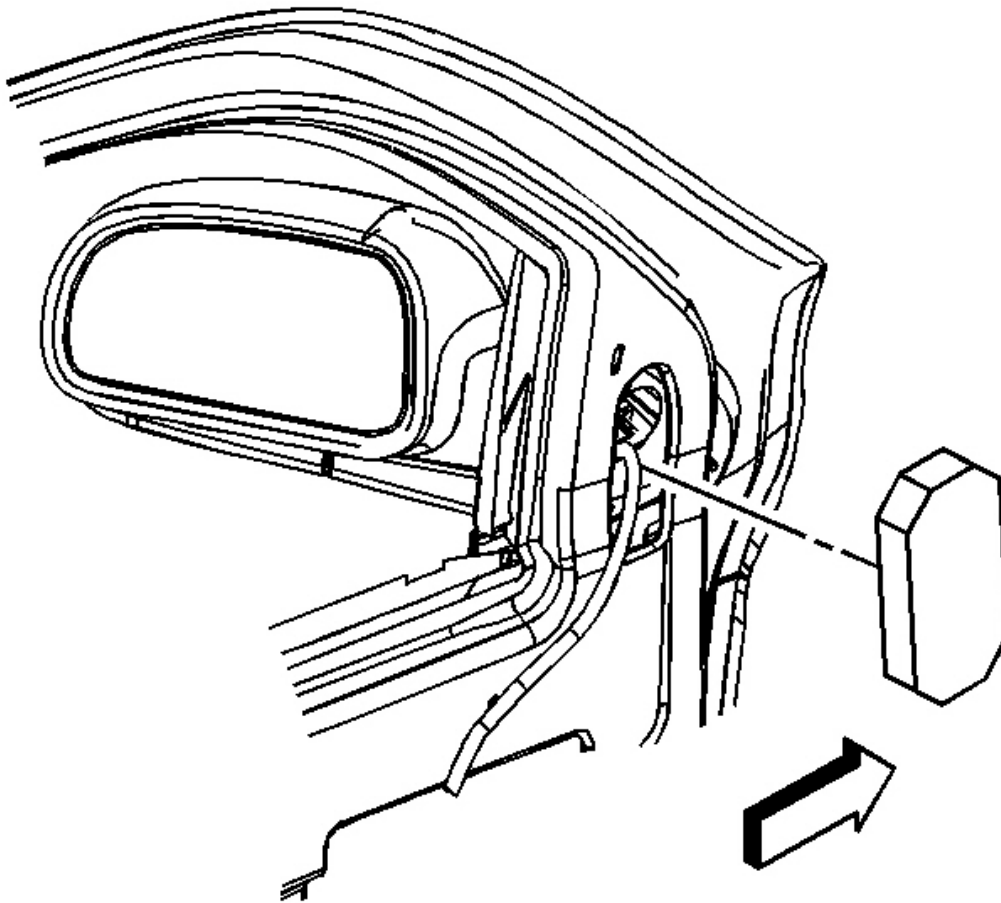


Fig. 5: View Of Side Door Insulator
Courtesy of GENERAL MOTORS CORP.

3. Remove the side door insulator.

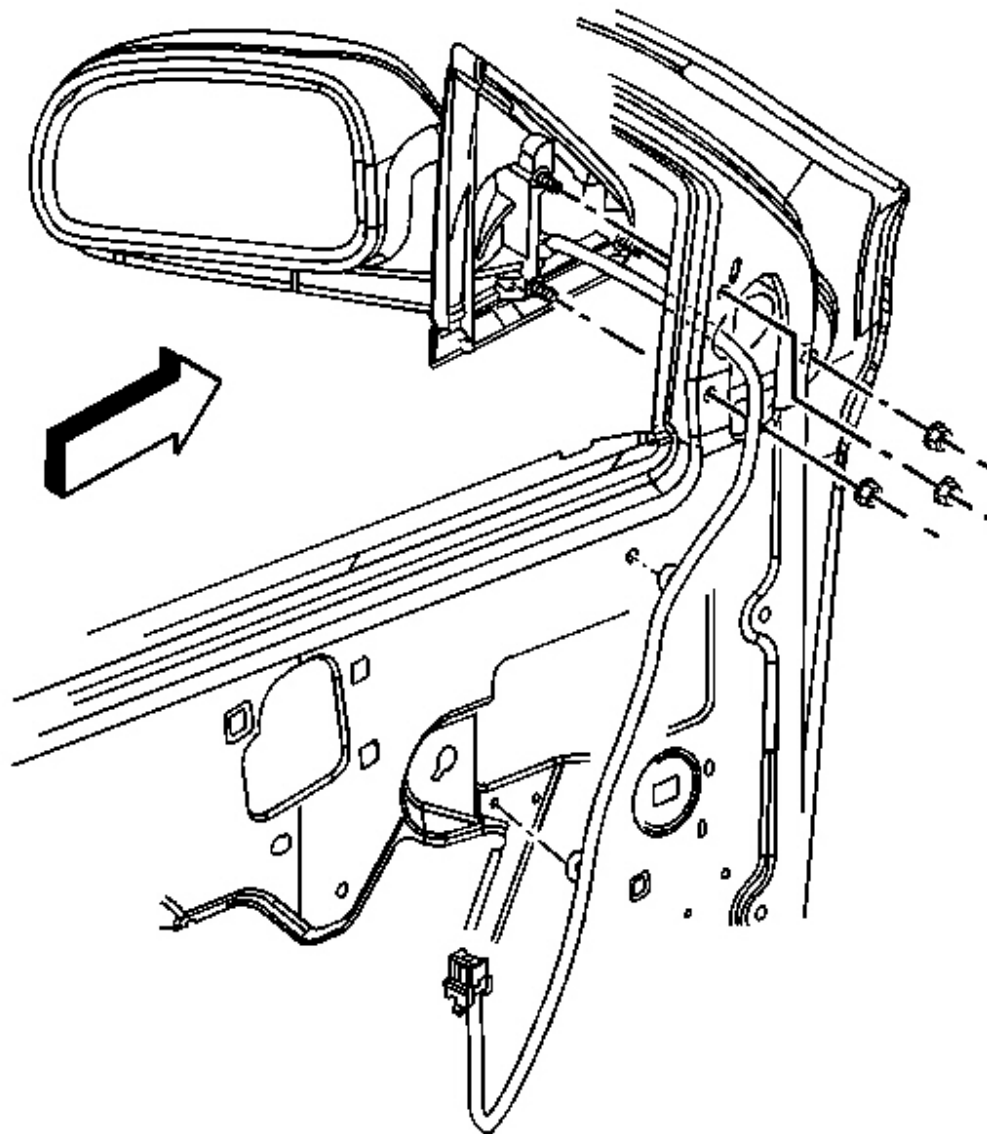


Fig. 6: View Of ORVM & Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

4. Remove the 3 ORVM retaining bolts.
5. Release the clip that retains the ORVM to the door.
6. Remove the ORVM assembly from the door.

Installation Procedure

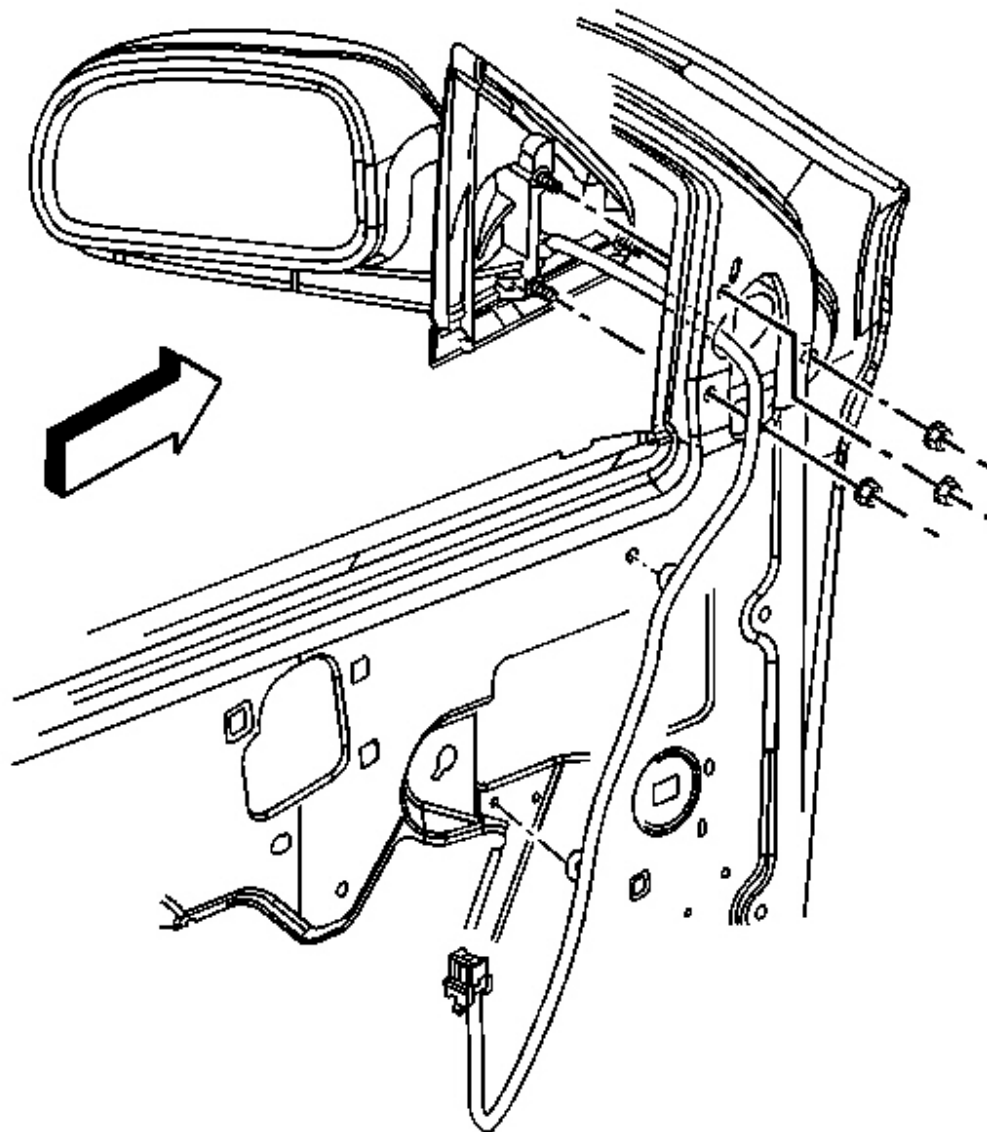


Fig. 7: View Of ORVM & Retaining Bolts
Courtesy of GENERAL MOTORS CORP.

1. Install the ORVM assembly to the door. Ensure that the retaining clip is fully seated.

NOTE: Refer to Fastener Notice .

2. Install the 3 ORVM retaining bolts.

Tighten: Tighten the bolts to 10 N.m (88 lb in).

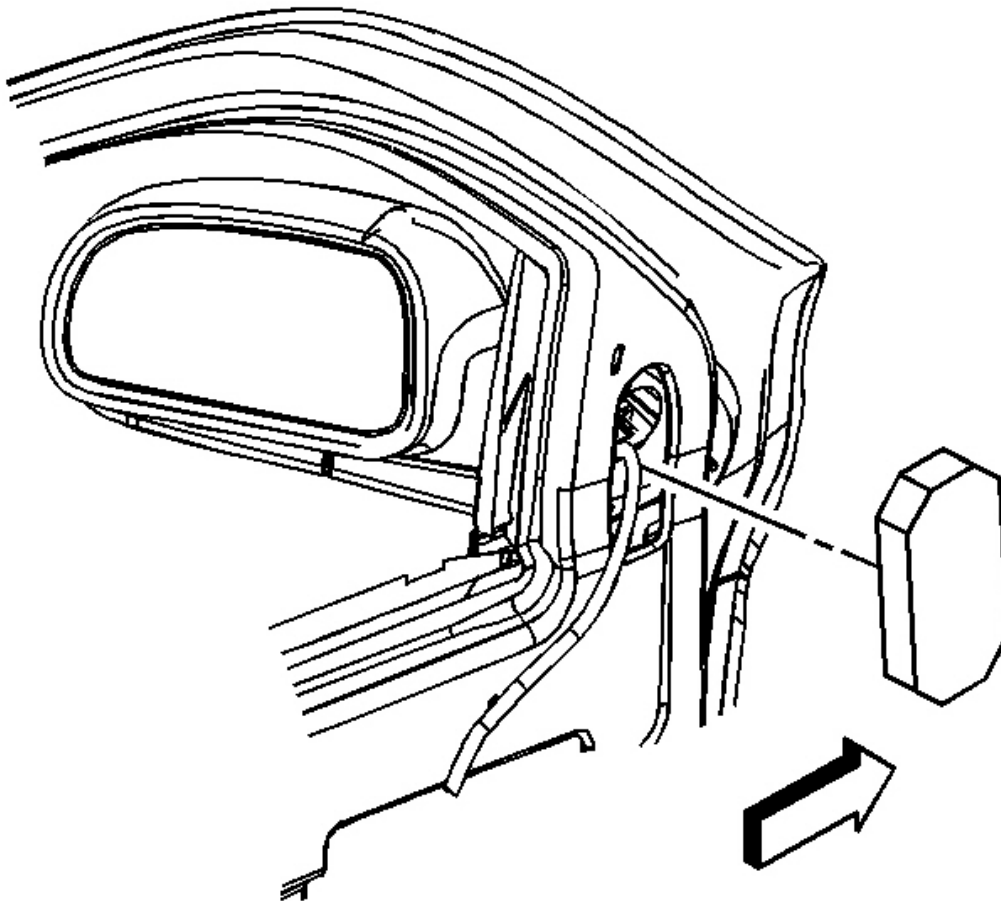


Fig. 8: View Of Side Door Insulator
Courtesy of GENERAL MOTORS CORP.

3. Install the side door insulator.
4. Install the ORVM harness to the door.
5. Install the door trim panel. Refer to Front Side Door Trim Panel Replacement .

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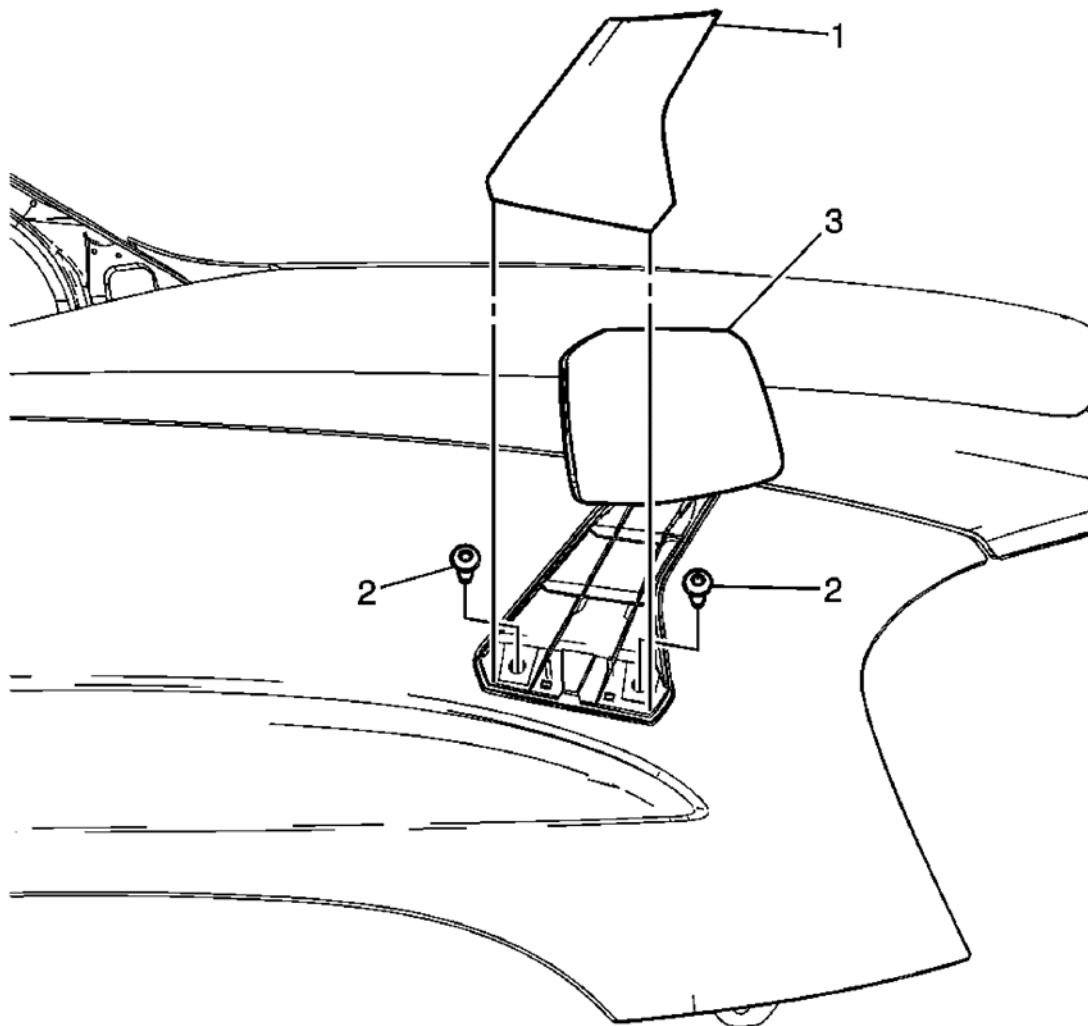


Fig. 9: View Of Outside Rearview Mirror, Cover & Screws
Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
1	Outside Rearview Mirror Cover CAUTION: Approved safety glasses and gloves should be worn when performing this procedure to reduce the chance of personal injury. Procedure: Apply masking tape to the base of the mirror to protect the fender when removing.
	Outside Rearview Mirror Screws (Qty: 2)

2	NOTE: Refer to <u>Fastener Notice</u> Fastener Notice. Tighten: 10 N.m (89 lb in)
3	Outside Rearview Mirror Procedure: Remove the masking tape, inspect the window for proper operation

OUTSIDE REARVIEW MIRROR MOTOR REPLACEMENT

Removal Procedure

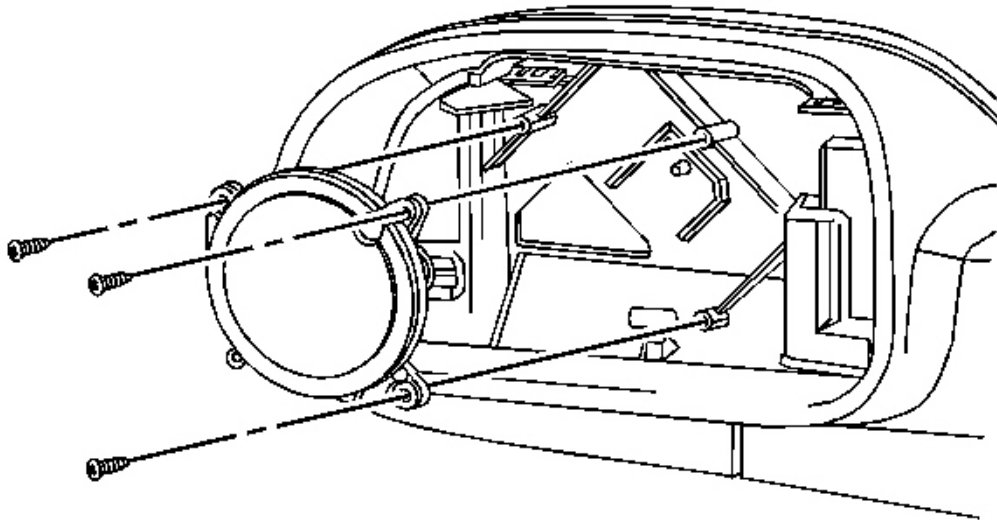


Fig. 10: View Of Mirror Motor & Housing
Courtesy of GENERAL MOTORS CORP.

1. Remove the mirror face. Refer to **Outside Rearview Mirror Glass Replacement**.
2. Remove the screws retaining the mirror to the mirror housing.
3. Remove the mirror motor from the housing.
4. Disconnect the electrical connector from the mirror motor.

Installation Procedure

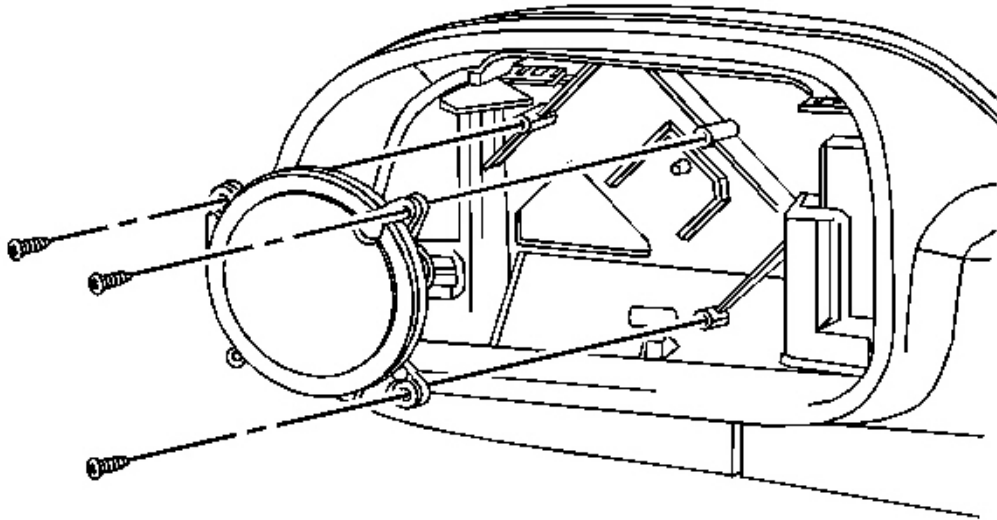


Fig. 11: View Of Mirror Motor & Housing
Courtesy of GENERAL MOTORS CORP.

1. Connect the electrical connector to the mirror motor.
2. Install the mirror motor to the mirror housing.

NOTE: Refer to **Fastener Notice** .

3. Install the screws retaining the mirror motor to the housing.

Tighten: Tighten the mirror motor screws to 10 N.m (88 lb in).

4. Install the mirror face. Refer to **Outside Rearview Mirror Glass Replacement**.

OUTSIDE REARVIEW MIRROR GLASS REPLACEMENT

Removal Procedure

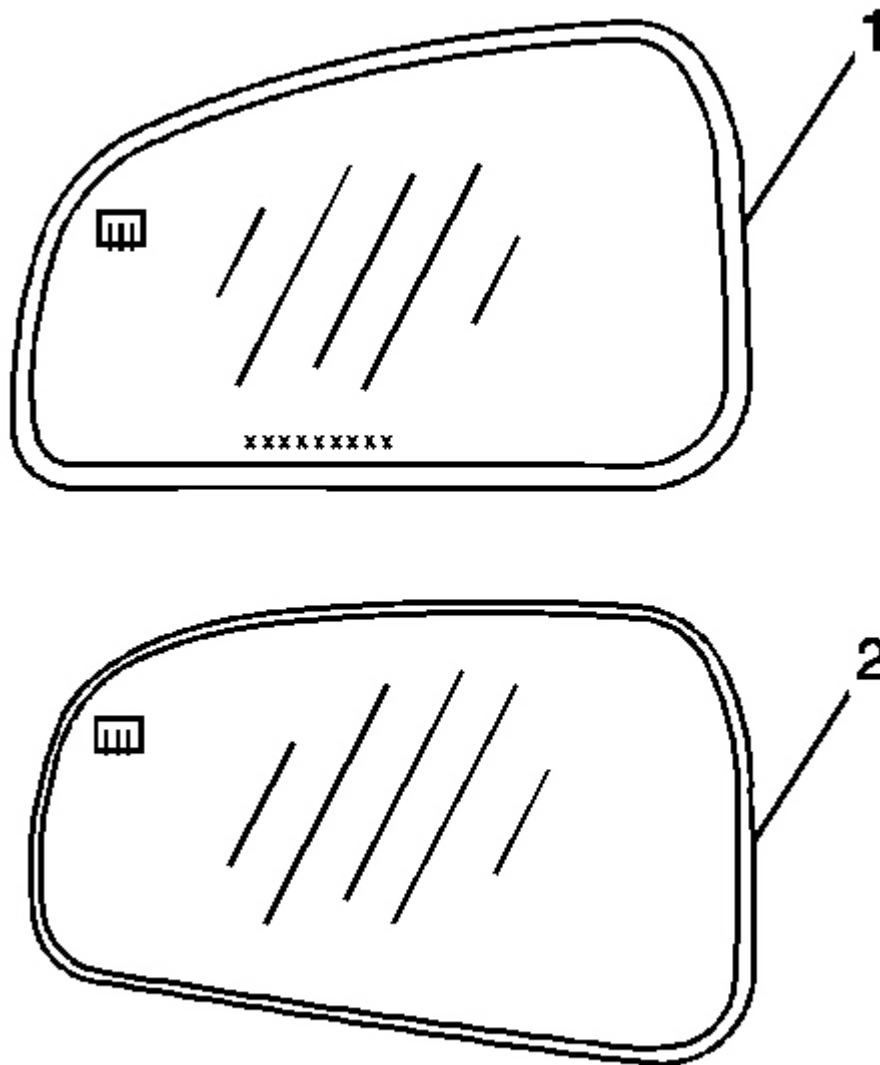


Fig. 12: View Of Electrochromic Mirror & Non-Electrochromic Mirror
Courtesy of GENERAL MOTORS CORP.

IMPORTANT:

- In order to identify the electrochromic mirror (1), take note of the glass bezel thickness of 5 mm (3/16 in).
- Only the electrochromic mirror (1) has identification numbers located at the bottom center edge of the glass.
- In order to identify the non-electrochromic mirror (2), take note of the

glass bezel thickness of 3 mm (1/8 in).

- The electrochromic glass is not serviceable. Replace the mirror only as an assembly. Refer to Outside Rearview Mirror Replacement (Door Mounted) or Outside Rearview Mirror Replacement (Fender Mounted).

CAUTION: Approved safety glasses and gloves should be worn when performing this procedure to reduce the chance of personal injury.

1. To remove the non-electrochromic glass, manually tilt the top edge of the glass away from the mirror housing in order to gain access to the retaining tab located behind the glass.

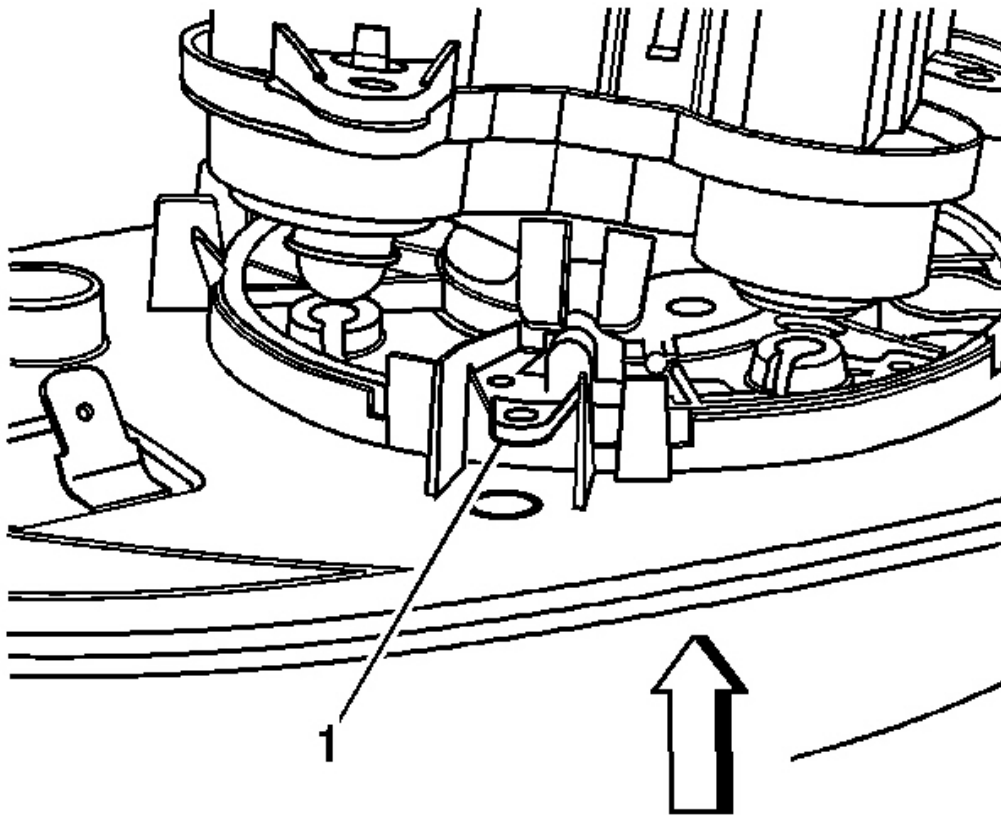


Fig. 13: Identifying Glass To Actuator Upper Retaining Tab
Courtesy of GENERAL MOTORS CORP.

2. Using a flat-bladed tool, carefully release the upper tab (1) that retains the glass to the actuator while

simultaneously tilting the glass away from the mirror housing.

3. Partially remove the glass from the mirror assembly.
4. Disconnect the 2 heated mirror connectors from the glass, if equipped.
5. Remove the glass from the mirror assembly.

Installation Procedure

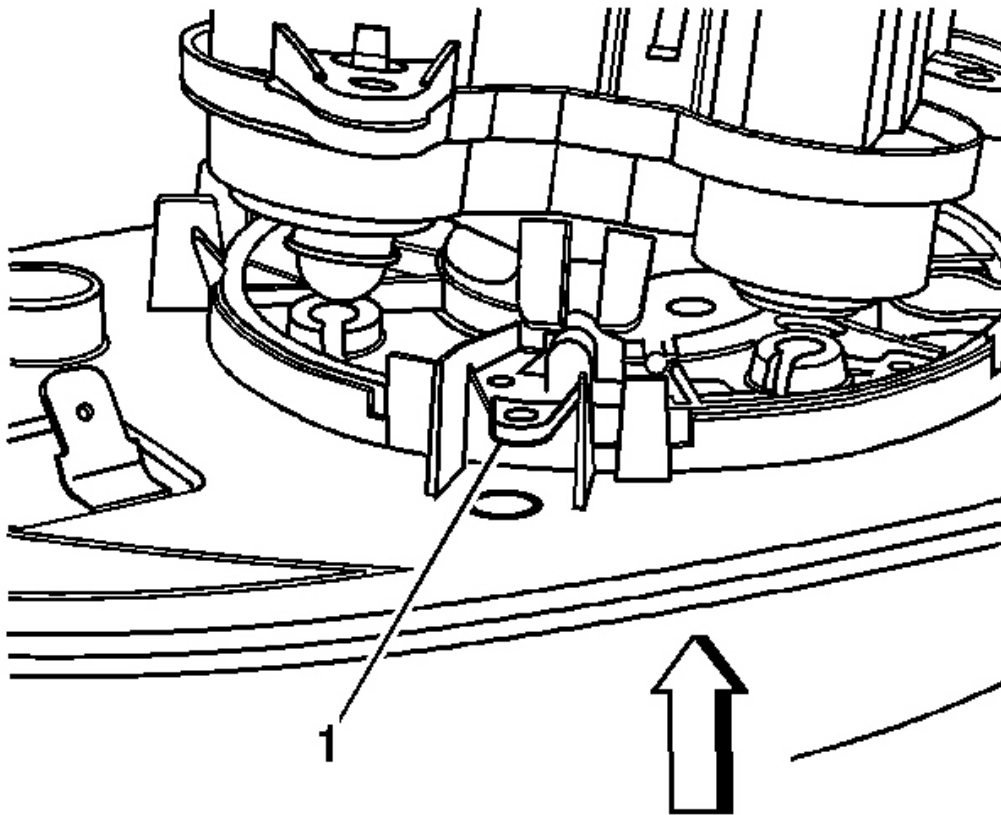


Fig. 14: Identifying Glass To Actuator Upper Retaining Tab
Courtesy of GENERAL MOTORS CORP.

1. Position the glass to the mirror assembly.
2. Connect the 2 heated mirror connectors to the glass, if equipped.
3. Carefully attach the glass to the actuator by pushing the glass into the actuator, ensuring the upper (1) and lower retaining tabs are fully seated.
4. Verify proper operation of the mirror assembly.

MIRROR TURN SIGNAL LENS REPLACEMENT

Removal Procedure

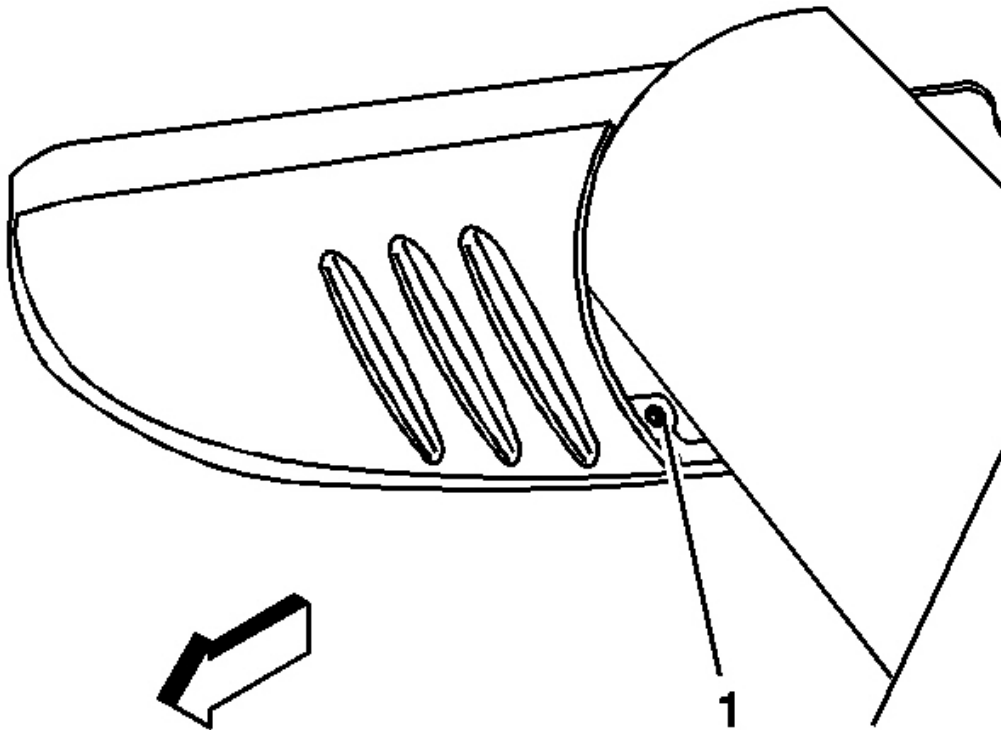


Fig. 15: Locating Lens Retaining Screw
Courtesy of GENERAL MOTORS CORP.

1. Carefully move the outside rear view mirror (ORVM) assembly forward in order to gain access to the lens retaining screw (1) located underneath the assembly, near the pivot point.
2. Remove the lens retaining screw.
3. Remove the lens from the ORVM assembly.

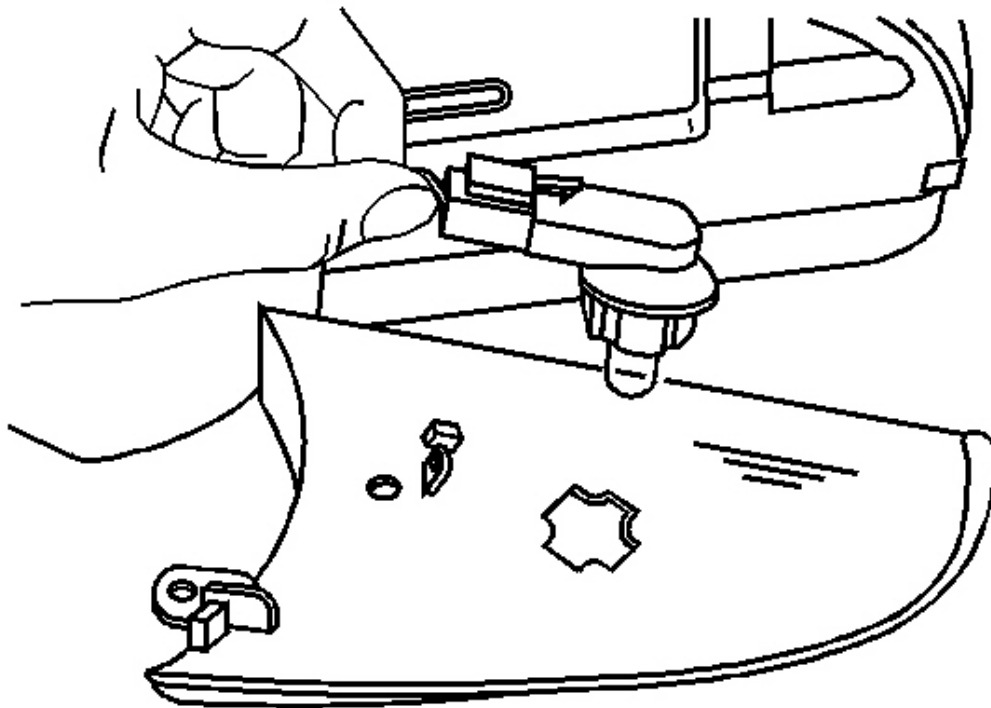


Fig. 16: Removing/Installing Socket & Lamp From Lens
Courtesy of GENERAL MOTORS CORP.

4. Remove the socket and the lamp from the lens by turning the socket counterclockwise.
5. If replacing the bulb, remove the bulb from the socket.

Installation Procedure

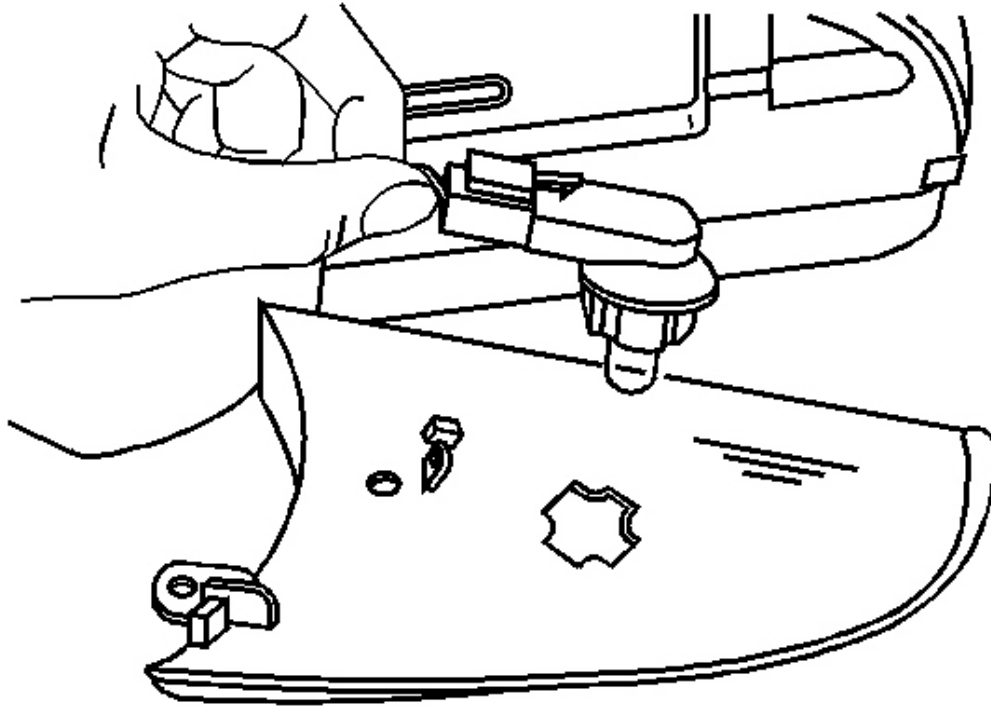


Fig. 17: Removing/Installing Socket & Lamp From Lens
Courtesy of GENERAL MOTORS CORP.

1. If replacing the bulb, install the bulb to the socket.
2. In order to install the socket to the lens, index the socket retaining tabs to the lens and turn the lens clockwise until fully seated.

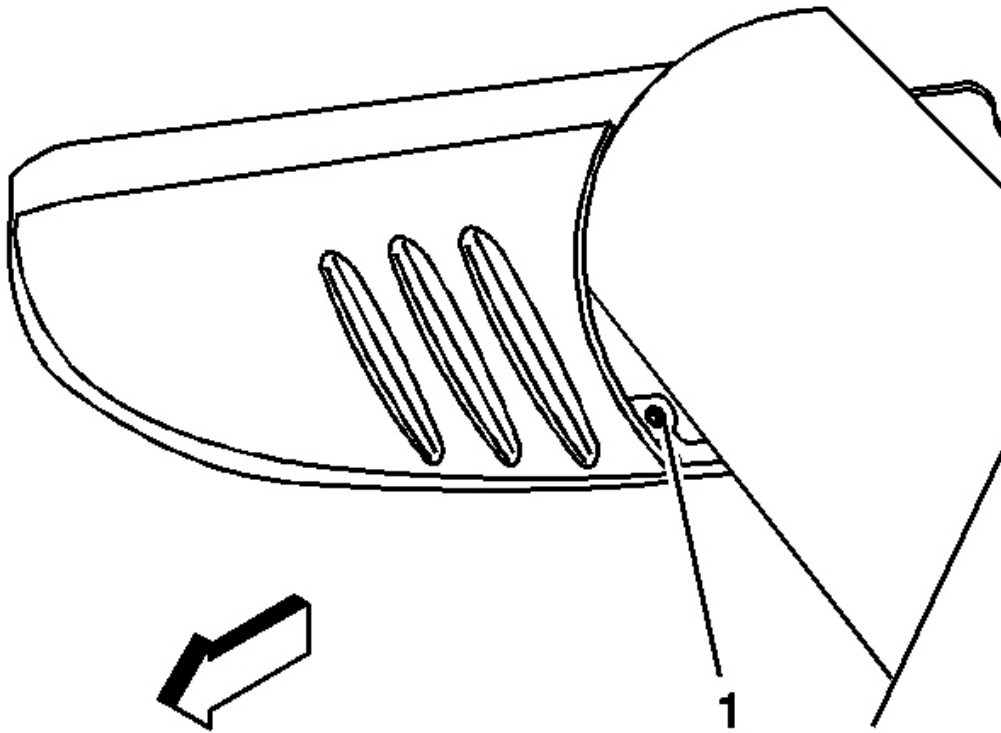


Fig. 18: Locating Lens Retaining Screw
Courtesy of GENERAL MOTORS CORP.

3. Position the lens to the ORVM assembly
4. Install the lens to the ORVM assembly.

NOTE: Refer to Fastener Notice .

5. Install the lens retaining screw (1).

Tighten: Tighten the screw to 1 N.m (8 lb in).

6. Return the mirror assembly to the original position.

INSIDE REARVIEW MIRROR REPLACEMENT

Removal Procedure

1. Disconnect the wire cover from the upper mirror base.

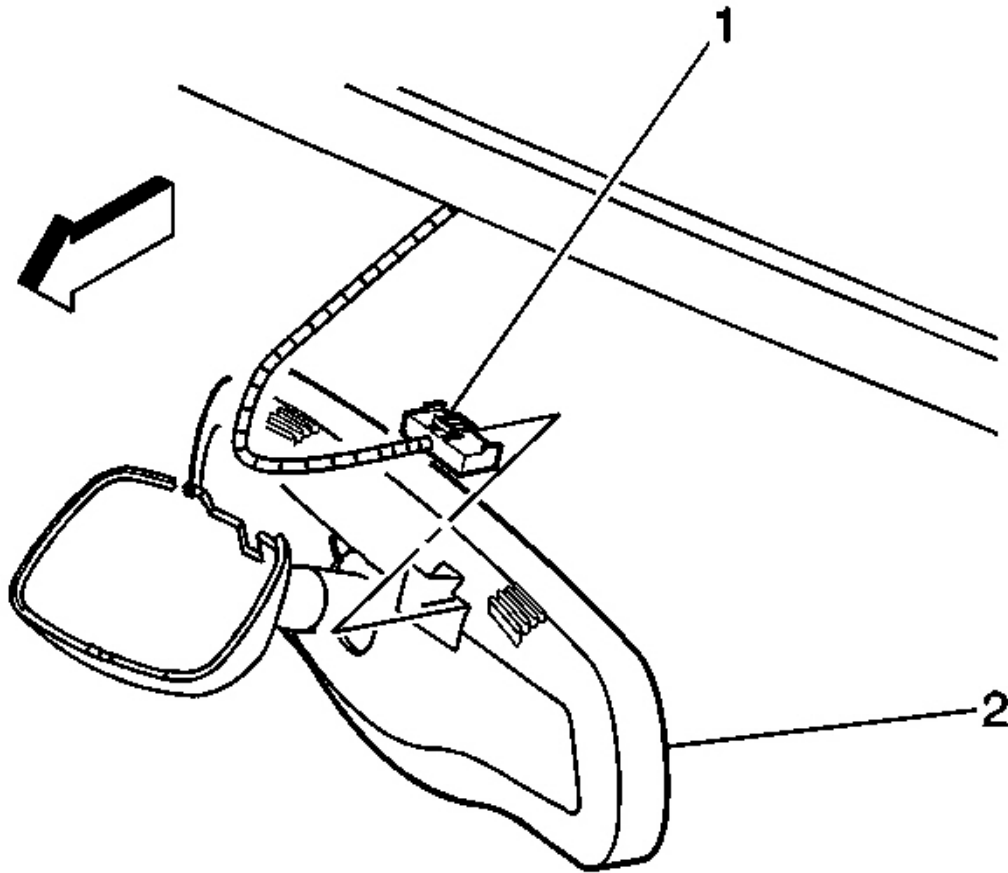


Fig. 19: View Of Wire Connector & Mirror
Courtesy of GENERAL MOTORS CORP.

2. Use a flat-bladed tool in order to disconnect the electrical connector (1) from the mirror (2), if equipped.
3. Using a TORX ® screwdriver, loosen the set screw that holds the mirror base to the windshield button.

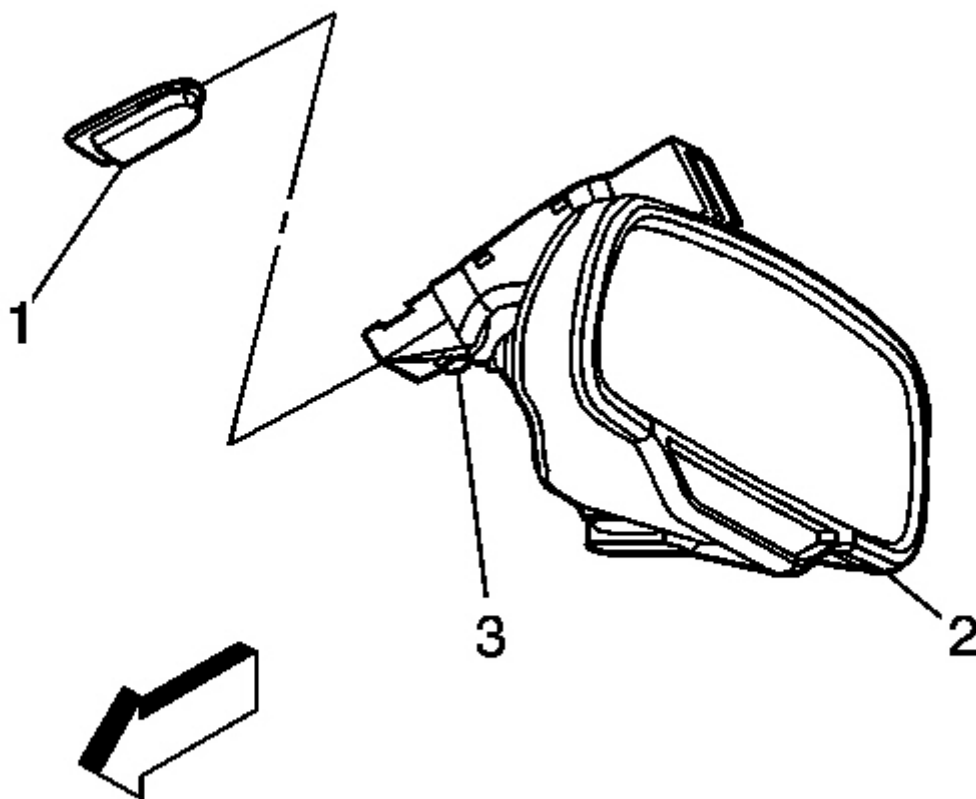


Fig. 20: View Of Rearview Mirror Mounting Components
Courtesy of GENERAL MOTORS CORP.

4. Slide the mirror upward off of the rearview mirror button (1).

Installation Procedure

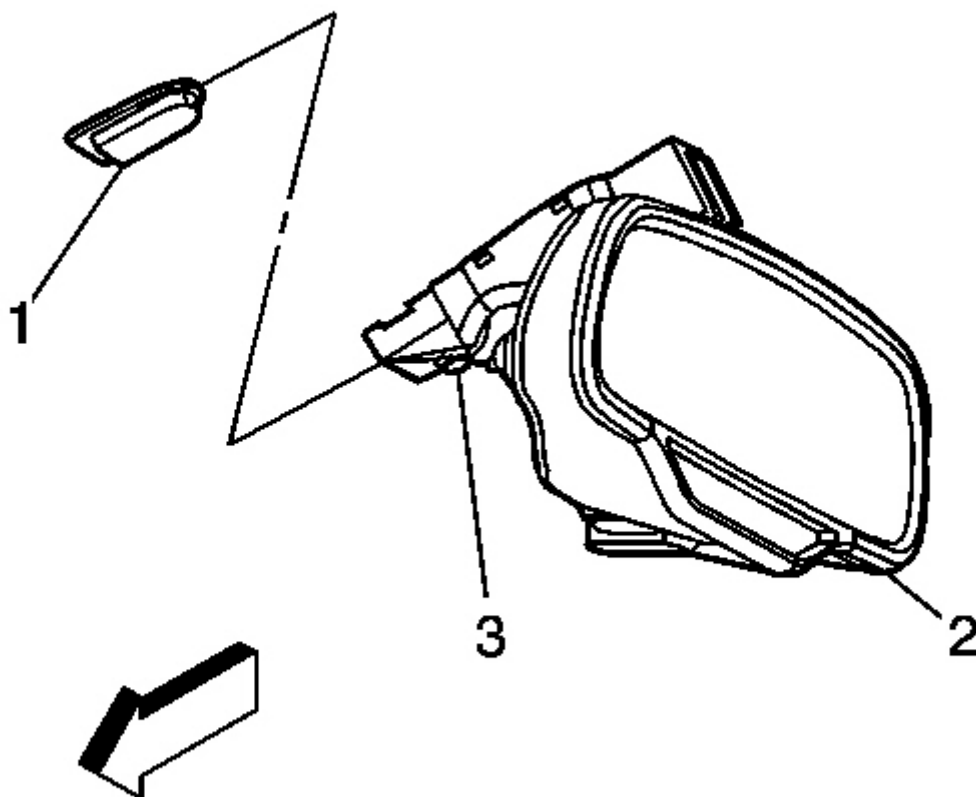


Fig. 21: View Of Rearview Mirror Mounting Components
Courtesy of GENERAL MOTORS CORP.

1. Slide the mirror (2) onto the support button (1).

NOTE: Refer to Fastener Notice .

2. Install the set screw.

Tighten: Tighten the set screw to 2 N.m (18 lb in).

3. Connect the wire cover to the upper mirror base.

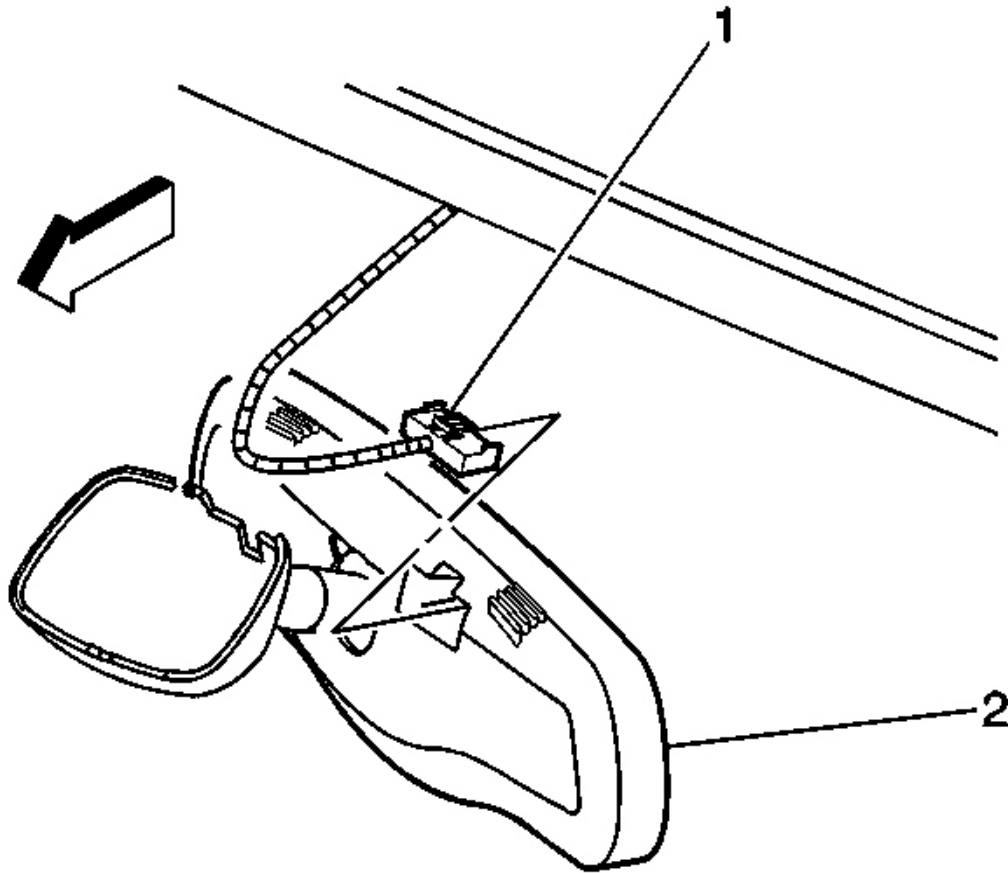


Fig. 22: View Of Wire Connector & Mirror
Courtesy of GENERAL MOTORS CORP.

4. Connect the electrical connector (1), if equipped.
5. Reposition the mirror.

REARVIEW MIRROR SUPPORT INSTALLATION

Special Tools

Safety Razor or Utility Knife

1. Determine the location of the mirror mounting base by marking the outside of the windshield with a marking pencil where the base was previously located. If it is not clear where the base was mounted, use the following steps to determine where the base should be installed:

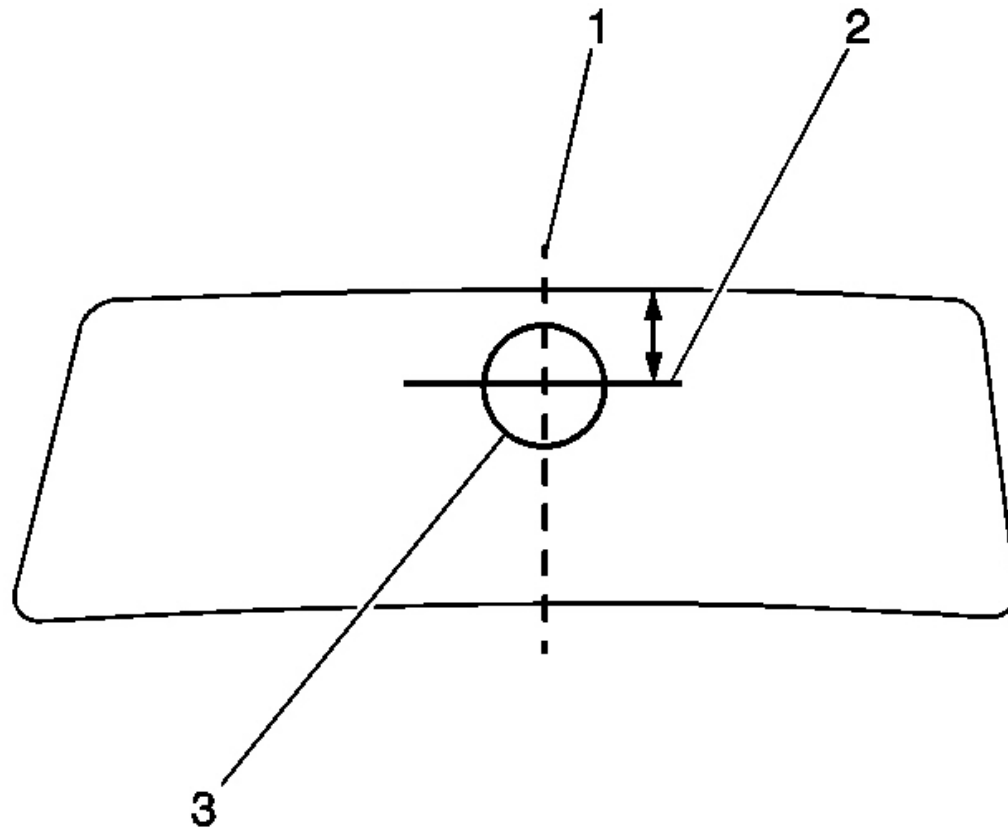


Fig. 23: Identifying Mirror Mounting Base Location
Courtesy of GENERAL MOTORS CORP.

1. Using a measuring tape, measure the distance between the windshield pillars from the base of the shade line .
2. Using a marking pencil, halfway between the windshield pillars, draw a centerline (1) on the windshield from the roof panel to the windshield base.
3. Draw a perpendicular line intersecting the centerline (2) at that location.

The top center of the mirror mounting base will be at the intersection of these lines.

2. Scrape the inside windshield glass thoroughly with a safety razor or utility knife in order to remove all old adhesive.
3. If reinstalling the original mounting base, place the mirror mounting base in a suitable holding device, such as a vice.
4. Scrape the mirror mounting base thoroughly with a safety razor or utility knife in order to remove all old

adhesive.

5. Clean the inside windshield glass and the mounting surface of the mirror mounting base thoroughly with a clean cloth saturated with naphtha or a 50/50 mixture (by volume) of clean water and isopropyl alcohol.

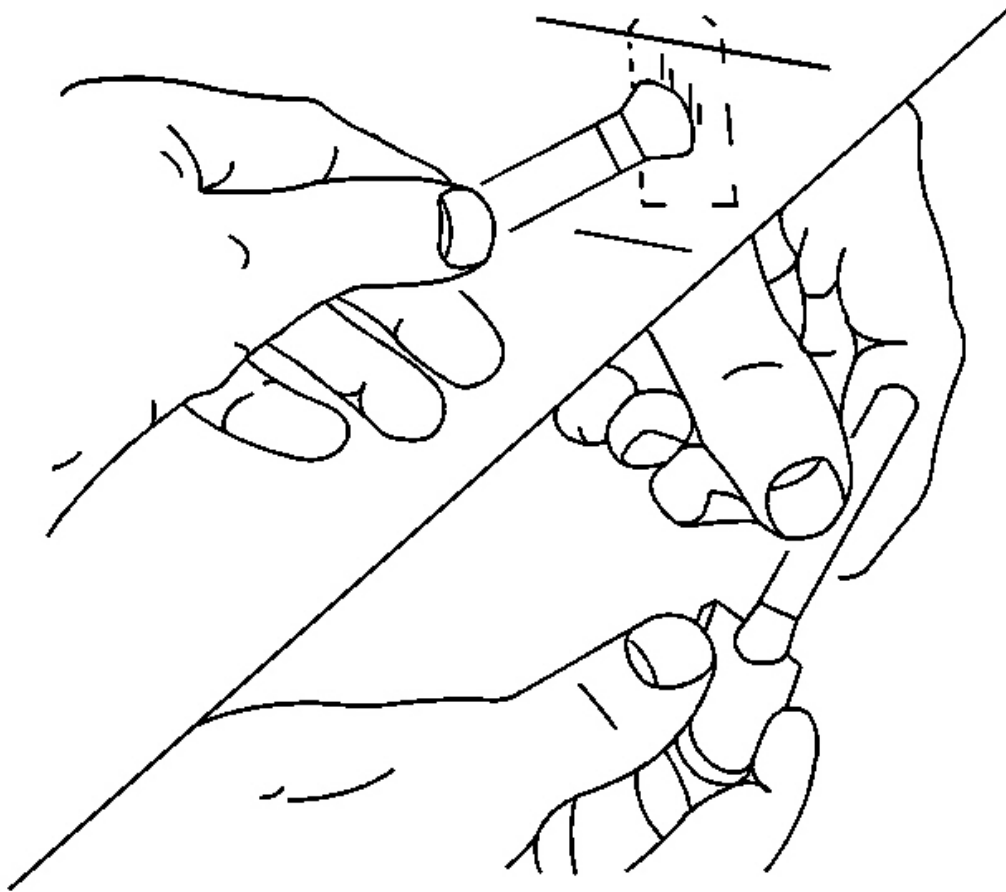


Fig. 24: Applying Adhesive To Mirror Base & Window
Courtesy of GENERAL MOTORS CORP.

6. Use Inside Mirror Adhesive Kit GM P/N 89021329, (Canadian P/N 993362) or equivalent to apply a small amount of activator to the mounting surface of the mirror mounting base.
7. Apply a small amount of activator to the windshield where the mounting base is to be installed.
8. Allow the activator to dry 5 minutes.

IMPORTANT: Do not touch the mounting surface of the mirror mounting base or the glass.

9. Apply 1 drop of adhesive to the center of the mirror mounting base.

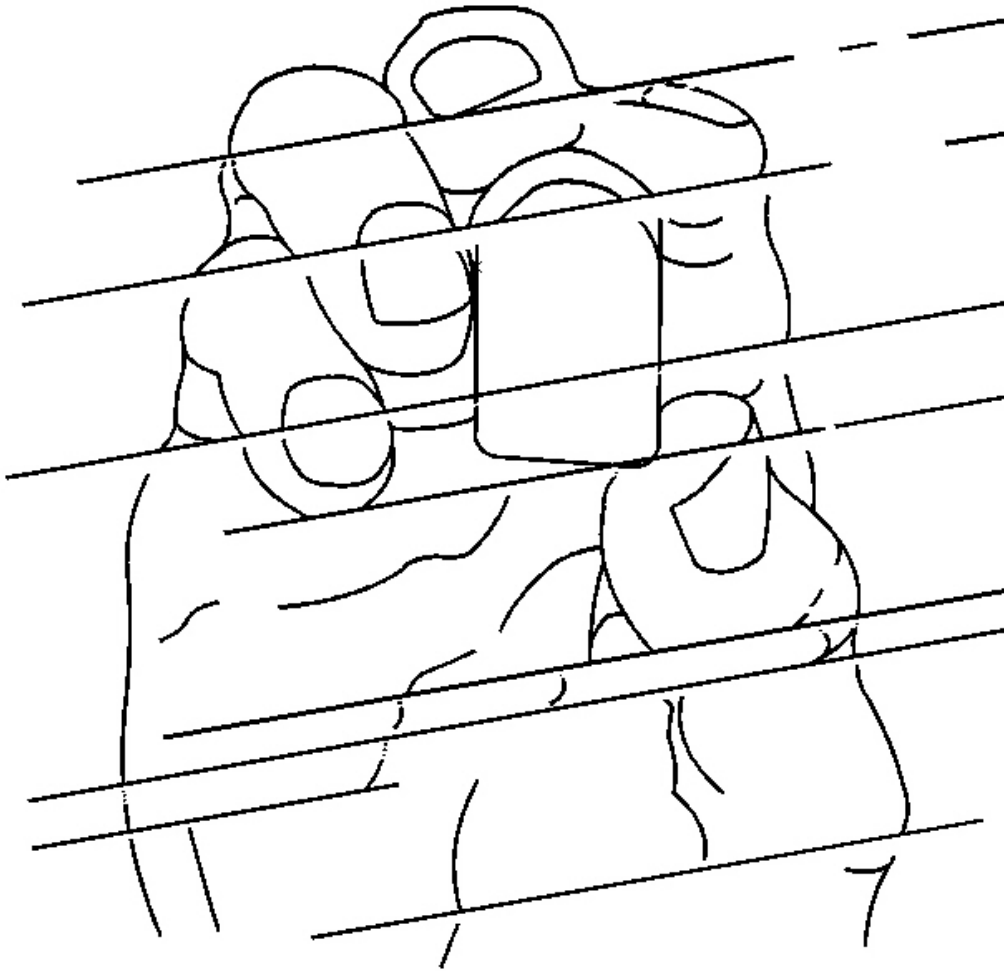


Fig. 25: Installing Mirror Mounting Base
Courtesy of GENERAL MOTORS CORP.

10. Immediately apply the mounting base to the windshield, ensuring that the mounting base aligns correctly to the marks made on the outside of the windshield.
11. Hold the mounting base firmly in place for 1 minute.
12. Allow the adhesive to set for 15 minutes.
13. Install the mirror to the mirror mounting base and fasten, if necessary.
14. Connect the electrical connector and install the wire cover, if equipped.

DESCRIPTION & OPERATION

OUTSIDE MIRROR DESCRIPTION & OPERATION (HEATED MIRRORS)

Heated OSRV Mirror

On vehicles equipped with heated outside rearview mirrors (OSRV), the driver door module (DDM) and passenger door module (PDM) controls the activation of the mirror heaters. Upon receiving a Class 2 message indicating a request for heated mirrors, the DDM (and PDM for the passenger side) will activate the mirror heater output. The mirror heaters will remain active until a new message is received indicating rear defogger is to be deactivated (either by driver input or by expiration of a calibrated timer).

AUTOMATIC DAY-NIGHT MIRROR DESCRIPTION & OPERATION

Inside Rearview Mirror with the Automatic Day-Night Feature System Components

The inside rearview mirror with the automatic day-night feature system consist of the following components:

- Inside rearview mirror
- Ambient air temperature sensor

Power and Ground of the Inside Rearview Mirror

With the ignition ON, ignition voltage is supplied to the mirror from the IGN E fuse in the underhood fuse block. Ground for the mirror is provided by G302.

Inside Rearview Mirror with the Automatic Day-Night Feature System Operation

The inside rearview mirror uses 2 photocell sensors. One sensor is the headlight sensor, located on the face side of the mirror. The headlight sensor is used to determine light conditions present at the mirror face. The other sensor is the ambient light sensor, located on the rear of the mirror or windshield side. The ambient light sensor is used to determine the exterior light conditions. With a low exterior light condition detected, and a high light condition from behind of the car, at the headlight sensor, the inside rearview mirror will automatically darken the face of the mirror.

In the daytime, the mirror is in a normal state because of the high exterior light condition that is indicated by the ambient light sensor. With the gear selector lever in the REVERSE position, backup lamp supply voltage is supplied as an input to the inside rearview mirror. The mirror monitors this input to disable the automatic day-night feature. This allows the driver to see objects in the mirror clearly when backing up, even during the night.

Compass

The mirror uses two magnetic field sensors for compass direction. One sensor is for north and south, the other is for east and west. The mirror supplies a signal and low reference to each sensor. As the vehicle travels with or against the earths magnetic pull, there will be a change in voltage on one or both sensors. As a result of the change in voltage, the mirror changes the heading on the compass display.

Temperature Display

The inside rearview mirror monitors the ambient air temperature sensor. As the outside air temperature gets warmer, the ambient air temperature sensor will lower resistance. The inside rearview mirror monitors this change and will show this as a warmer temperature on the display. Temperatures exceeding 62°C (143°F) will be out of the mirror's temperature range and SC will be shown on the temperature display. In colder outside air temperatures, the ambient air temperature sensor will raise in resistance. The inside rearview mirror will show a colder temperature on the display. Temperatures lower than -40°C (-40°F) will be out of the mirror's temperature range which OC will be shown on the temperature display. In cold temperatures such as 3°C (37°F) or below, the temperature display will show ICE when the ignition is first turned on. The display will toggle between ICE and the actual outside temperature until the temperature update process is complete.

Temperature Display Update Process

The inside rearview mirror has a temperature program that takes in account the fact that the radiator will heat the ambient air temperature sensor if the radiator is warm and the vehicle is not moving. If the vehicle has been off for more than 2 hours, the mirror temperature program assumes that the radiator has cooled and that the temperature supplied by the ambient air temperature sensor is accurate. Because of this, if the vehicle has been off for more than 2 hours, the mirror displays the temperature as reported by the ambient air temperature sensor. When the ambient air temperature sensor reports a new temperature to the mirror, one of the following cases will apply:

- Ignition is OFF for more than 2 hours, then is turned ON for more than 3 minutes. The outside temperature is greater than the last temperature recorded by the mirror for 2 minutes. The mirror will increase the last temperature reading by one degree every 2 minutes for 8 consecutive times. If the outside temperature is not matched after the 8th update, the mirror will then display the current outside temperature.
- Ignition is off for more than 2 hours, then is turned ON for less than 3 minutes. The mirror will update the temperature display every 2 seconds.
- Ignition is OFF for more than 2 hours, then is turned ON for more than 3 minutes. The outside temperature is less than the last temperature recorded by the mirror. The mirror will then display the current outside temperature.
- Ignition has been OFF for less than 2 hours. The outside temperature is greater than the last temperature recorded by the mirror, but the ignition is cycled from ON to OFF within 2 minutes. The mirror will display the old temperature.
- Ignition has been OFF for less than 2 hours. The outside temperature is less than the last temperature recorded by the mirror. The mirror will then display the current outside temperature.

Switches of the Inside Rearview Mirror with the Automatic Day-Night Feature & Compass without OnStar®

The inside rearview mirror has 2 switches that perform the following functions:

- The MIRROR switch is used to enable or disable the automatic day-night feature of the mirror. With the ignition in the ON position, depress the MIRROR switch to enable the automatic day-night feature of the mirror. A green indicator will illuminate on the mirror when the automatic day-night feature is enabled. To disable the automatic day-night feature of the mirror, depress the MIRROR switch.

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- The COMPASS switch is used to turn the compass on and off. With the ignition in the ON position, depress the COMPASS switch to turn the compass on. Depress the COMPASS switch again to turn the compass off. The COMPASS switch is also used to place the compass into a calibration or zone mode. For more information, refer to **Compass Calibration and Magnetic Variance** .

Switches of the Inside Rearview Mirror with the Automatic Day-Night Feature, Compass/Temperature Display without OnStar®

The inside rearview mirror has two switches that perform the following functions:

- The TEMP switch is used to turn the compass/temperature display on or off, It is also used to enable or disable the automatic day-night feature of the mirror. With the ignition in the ON position, depress the TEMP switch to enable the compass/temperature display. Depress the TEMP switch again to disable the compass/temperature display. The TEMP switch can be held for 4 seconds in order to change the display from Fahrenheit (°F) to Celsius (°C), or from Celsius (°C) to Fahrenheit (°F). Depress the TEMP switch until the green indicator illuminates on the mirror. This indicates that the automatic day-night feature is enabled. To disable the automatic day-night feature of the mirror, depress the TEMP switch until the green indicator turns off.
- The COMP switch is used to turn the compass/temperature display on or off. With the ignition in the ON position, depress the COMP switch to turn the compass/temperature display on. Depress the COMP switch again to turn the compass/temperature display off. The COMP switch is also used to place the compass into a calibration or zone mode. For more information, refer to **Compass Calibration and Magnetic Variance** .

Switches of the Inside Rearview Mirror with the Automatic Day-Night Feature with Compass and OnStar®

The inside rearview mirror has 4 switches that perform the following functions:

- The on/off switch located at the left side of the mirror performs the following functions:
 - To enable or disable the automatic day-night feature of the mirror. With the ignition in the ON position, depress and hold the on/off switch for 4 seconds to enable the automatic day-night feature of the mirror. A green indicator will illuminate on the mirror when the automatic day-night feature is enabled. To disable the automatic day-night feature of the mirror, depress and hold the on/off switch for 4 seconds.
 - To turn the compass on and off. With the ignition in the ON position, depress the on/off switch to turn the compass on. Depress the on/off switch again to turn the compass off. The on/off switch is also used to place the compass into a calibration or zone mode. For more information, refer to **Compass Calibration and Magnetic Variance** .
- The 3 switches on the right side of the mirror are for OnStar® operation. For more information, refer to **OnStar Description and Operation** .

Switches of the Inside Rearview Mirror with the Automatic Day-Night Feature, Compass/Temperature Display with OnStar®

The inside rearview mirror has four switches that perform the following functions:

2008 Isuzu Ascender LS

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- The on/off switch located at the left side of the mirror performs the following functions:
 - To enable or disable the automatic day-night feature of the mirror. With the ignition in the ON position, depress and hold the on/off switch for 6 seconds to enable the automatic day-night feature of the mirror. A green indicator will illuminate on the mirror when the automatic day-night feature is enabled. To disable the automatic day-night feature of the mirror, depress and hold the on/off switch for 6 seconds.
 - To turn the compass/temperature display on and off. With the ignition in the ON position, depress the on/off switch to turn the compass/temperature display on. Depress the on/off switch again to turn the compass/temperature display off. The on/off switch can be held for 4 seconds in order to change the display from Fahrenheit (°F) to Celsius (°C), or from Celsius (°C) to Fahrenheit (°F). The on/off switch is also used to place the compass into a calibration or zone mode. For more information, refer to **Compass Calibration and Magnetic Variance** .
- The 3 switches on the right side of the mirror are for OnStar® operation. For more information, refer to **OnStar Description and Operation** .