

Mirrors - Cruze

FASTENER TIGHTENING SPECIFICATIONS

Application	Specification	
	Metric	English
Inside Rearview Mirror	2 N.m	18 lb in
Outside Rearview Mirror	9 N.m	80 lb in
Outside Rearview Mirror Housing Screw	2.5 N.m	22 lb in
Outside Rearview Mirror Motor (Actuator) Bolt	2.5 N.m	22 lb in

INSIDE REARVIEW MIRROR WIRING SCHEMATICS

[illegible]

Fig. 1: Inside Rearview Mirror (DD8) Wiring Schematics
 Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
2839	Run/Crank Ignition 1 Voltage
2839_VT/WH	2839 VT/WH
CAV_2	2
CAV_31	31
CONN_X2	X2
CAV_5	5
2839_VT/WH	2839 VT/WH
1324	Backup Lamp Supply Voltage
1324 GN/WH	1324 GN/WH
CAV_1	1
1550	Ground
1550_BK	1550 BK
CAV_5	5
G305	G305
F53UA	F53UA 10A
X211	X211
A90	Logic
Exterior_Lights_Schematics_REF	Exterior Lights Schematics
A10	(DD8)
KR73	
X50A	
A1	

OUTSIDE REARVIEW MIRROR WIRING SCHEMATICS

Outside Rearview Mirror Wiring Schematics

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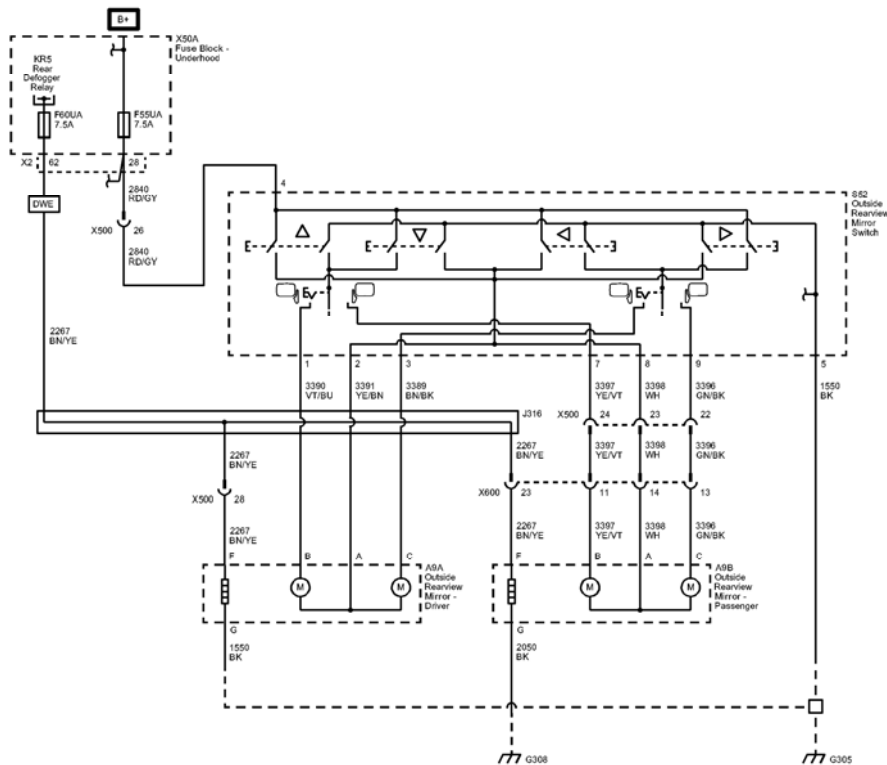


Fig. 2: Outside Rearview Mirror Wiring Schematics
Courtesy of GENERAL MOTORS COMPANY

Callout	Component Name
2267	Mirror Heating Element Supply Voltage
2267 BN/YE	2267 BN/YE
CAV_62	62
CONN_X2	X2
2840	Battery Positive Voltage
2840_RD/GY	2840 RD/GY
CAV_4	4
CAV_28	28
DWE	MIRROR O/S-LH and RH, RC, ELEC, HEAT, AUX WFOV/DRVR, MANFOLD, CNVX/PASS
2840_RD/GY	2840 RD/GY
CAV_26	26
1550	Ground
1550_BK	1550 BK
CAV_5	5
3396	Co-Driver Mirror Motor Right (+) Left (-) Control
3396_GN/BK	3396 GN/BK

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CAV_C	C
CAV_9	9
3398	Co-Driver Mirror Motor Common Control
3398_WH	3398 WH
CAV_A	A
CAV_8	8
3397	Co-Driver Mirror Motor Up (+) Down (-) Control
3397_YE/VT	3397 YE/VT
CAV_B	B
CAV_7	7
2267_BN/YE	2267 BN/YE
CAV_F	F
3390	Driver Mirror Motor Up (+) Down (-) Control
3390_VT/BU	3390 VT/BU
CAV_B	B
CAV_1	1
3391	Driver Mirror Motor Common Control
3391_YE/BN	3391 YE/BN
CAV_A	A
CAV_2	2
3389	Driver Mirror Motor Right (+) Left (-) Control
3389_BN/BK	3389 BN/BK
CAV_C	C
CAV_3	3
2267_BN/YE	2267 BN/YE
CAV_F	F
2050	Ground
2050 BK	2050 BK
CAV_G	G
1550 BK	1550 BK
CAV_G	G
CAV_28	28
2267_BN/YE	2267 BN/YE
2267_BN/YE	2267 BN/YE
3396_GN/BK	3396 GN/BK
3398_WH	3398 WH
3397_YE/VT	3397 YE/VT
3396_GN/BK	3396 GN/BK
3398_WH	3398 WH
3397_YE/VT	3397 YE/VT
X600	X600

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	23
CAV_11	11
CAV_14	14
CAV_13	13
X500	X500
CAV_24	24
CAV_23	23
CAV_22	22
G308	G308
G305	G305
F60UA	F60UA 7.5A
F55UA	F55UA 7.5A
X500	X500
J316	J316
X500	X500
X600	X600
X500	X500
S52	
A9A	
A9B	
X50A	
KR5	

DIAGNOSTIC INFORMATION AND PROCEDURES

SYMPTOMS - MIRRORS

NOTE: The following steps must be completed before using the symptom tables.

1. Perform the **Diagnostic System Check - Vehicle** before using the Symptom Tables in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to the following system descriptions:
 - **Automatic Day-Night Mirror Description and Operation**
 - **OnStar Description and Operation**
 - **Outside Mirror Description and Operation**

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the system. Refer to **Checking**

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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:

- **Automatic Day-Night Mirrors Malfunction**
- **Heated Mirrors Malfunction**
- **OnStar Button LED Malfunction**
- **OnStar Button Malfunction**
- **Power Mirror Malfunction**

HEATED MIRRORS 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
Left Heated Mirror Element Control	2	1	3	-
Driver Outside Rearview Mirror Ground	-	1	-	-
Right Heated Mirror Element Control	2	1	3	-
Passenger Outside Rearview Mirror Ground	-	1	-	-
1. Single Heated Mirror Inoperative 2. Both Heated Mirrors Inoperative 3. Heated Mirrors Always On				

Circuit/System Description

The rear defogger relay supplies voltage to the outside rearview mirror heater elements based on the current state of the rear window defogger. The relay supplies B+ through the driver/passenger mirror heating element control circuit when a request is seen.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Outside Mirror 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. Engine running.
2. Verify the E18 Rear Defogger Grid turns ON and OFF when commanding the Rear Defogger On and Off with a scan tool.
 - **If the E18 Rear Defogger Grid does not turn ON or OFF**

Refer to **Rear Window Defogger Malfunction** .

- **If the E18 Rear Defogger Grid turns ON and OFF**
3. Verify the mirror glass of the A9A Outside Rearview Mirror-Driver and the A9B Outside Rearview Mirror-Passenger become warm when commanding the Rear Defogger On with a scan tool.
 - **If the mirror glass of the A9A Outside Rearview Mirror-Driver and the A9B Outside Rearview Mirror-Passenger do not become warm**

Refer to Circuit/System Testing below.

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- **If the mirror glass of the A9A Outside Rearview Mirror-Driver and the A9B Outside Rearview Mirror-Passenger become warm**

4. All OK.

Circuit/System Testing

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the appropriate A9 Outside Rearview Mirror. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the ground circuit terminal G and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 10 ohms**
3. Engine Running, connect a test lamp between the control circuit terminal F and the ground circuit terminal G.
4. Verify the test lamp turns ON and OFF when commanding the Rear Defogger On and Off with a scan tool.
 - **If the test lamp is always OFF**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the X50A Fuse Block-Underhood.
 2. Test for infinite resistance between the control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 ohms in the control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, replace the A9 Outside Rearview Mirror.
 - **If the test lamp is always ON**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the X50A Fuse Block-Underhood, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, replace the X50A Fuse Block-Underhood
 - **If the test lamp turns ON and OFF**
5. Test or replace the A9 Outside Rearview Mirror.

Repair Instructions

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

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Outside Rearview Mirror Glass Replacement

Front Compartment Fuse Block Replacement

AUTOMATIC DAY-NIGHT MIRRORS 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
Ignition	1	1	-	-
Backup Lamp Control	B2545 02	2	2	-
Ground	-	1	-	-
1. Automatic Mirror Dimming Inoperative 2. Mirror Automatic Day-Night Disable Feature Malfunction				

Circuit/System Description

The inside rearview mirror uses 2 photocell sensors. One sensor is the rear light sensor, located on the face side of the mirror, facing the rear of the vehicle. The rear light sensor is used to determine light conditions present at the mirror face. The other sensor is the front light sensor, located on the backside of the mirror, facing the front of the vehicle. The front light sensor is used to determine the exterior light conditions at the front of the vehicle. With a low exterior light condition detected by the front light sensor and a high light condition from the rear light sensor, the inside rearview mirror will automatically darken the face of the inside rearview mirror.

With the gear selector lever in the REVERSE position and the engine running, backup lamp control 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, regardless of the rear light sensor status.

Reference Information

Schematic Reference

Inside Rearview Mirror Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Automatic Day-Night Mirror Description and Operation

Electrical Information Reference

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

Circuit/System Verification

1. Ignition ON.
2. Cover the windshield with a blanket or other suitable item.
3. Verify the A10 Inside Rearview Mirror face dims when shining a bright light into the rear light sensor
 - **If the A10 Inside Rearview Mirror does not dim**

Refer to Circuit/System Testing below - Inside Review Mirror Dimming Inoperative
 - **If the A10 Inside Rearview Mirror dims**
4. Verify the A10 Inside Rearview Mirror face transitions from dim to bright while commanding the Backup Lamps Active and Inactive with a scan tool.
 - **If the A10 Inside Rearview Mirror does not transition between dim and bright.**

Refer to Circuit/System Testing below- Day-Night Disable Malfunction
 - **If the A10 Inside Rearview Mirror transitions between bright and dim states**
5. All OK.

Circuit/System Testing

Inside Review Mirror Dimming Inoperative

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the A10 Inside Rearview Mirror. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the ground circuit terminal 5 and ground.
 - **If 10 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 10 ohms**

3. Ignition ON.
4. Verify a test lamp illuminates between the ignition circuit terminal 2 and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ignition circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, refer to **Retained Accessory Power Malfunction** .
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF.
 2. Test for infinite resistance between the ignition circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the A10 Inside Rearview Mirror.
 - **If the test lamp illuminates**
5. Replace the A10 Inside Rearview Mirror.

Day-Night Disable Malfunction

1. Ignition OFF, disconnect the harness connector at the A10 Inside Rearview Mirror.
2. Connect a test lamp between the control circuit terminal 1 and ground
3. Ignition ON, verify the test lamp turns ON and OFF while commanding the Backup Lamps Active and Inactive with a scan tool.
 - **If the test lamp is always OFF**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the K9 Body Control Module.
 2. Test for infinite resistance between the control circuit terminal 1 and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 ohms in the control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, refer to **Backup Lamps Malfunction (Manual Transmission)** , **Backup Lamps Malfunction (Automatic Transmission)** .
 - **If the test lamp is always ON**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the K9 Body Control Module, ignition ON.
 2. Test for less than 1 V between the control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, refer to **Backup Lamps Malfunction (Manual Transmission)** , **Backup Lamps Malfunction (Automatic Transmission)**
 - **If the test lamp turns ON and OFF**

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4. Replace the A10 Inside Rearview Mirror.

Repair Instructions

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

Inside Rearview Mirror Replacement

POWER MIRROR 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
Outside Rearview Mirror Switch B+	1	1	-	-
Driver Mirror Motor Horizontal Control	1	2	2	-
Driver Mirror Motor Vertical Control	1	2	2	-
Passenger Mirror Motor Horizontal Control	1	3	3	-
Passenger Mirror Motor Vertical Control	1	3	3	-
Outside Rearview Mirror Switch Ground	-	1	-	-
1. Both Outside Power Mirrors Inoperative 2. Driver Outside Power Mirror Malfunction 3. Passenger Outside Power Mirror Malfunction				

Circuit/System Description

The outside rearview mirror switch controls the outside rearview mirrors based on the position of the mirror selector switch and which movement position is selected. The outside rearview mirror switch has four positions: up, down, left, and right. B+ is applied to the switch from the power mirror fuse and when a movement position switch is selected, voltage is sent to the commanded mirror via a mirror control circuit. The opposite mirror control circuit acts as a ground circuit for the bi-directional mirror motor. Ground is the applied through the switch.

Reference Information

Schematic Reference

Outside Rearview Mirror Schematics

Connector End View Reference

COMPONENT CONNECTOR END VIEWS - INDEX

Description and Operation

Outside Mirror Description and Operation

Electrical Information Reference

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

Circuit/System Verification

1. Verify the mirror glass of the A9A Outside Rearview Mirror-Driver and the A9B Outside Rearview Mirror-Passenger move UP, DOWN, LEFT and RIGHT with the S52 Outside Rearview Mirror Switch.
 - **If both outside mirror glasses do not move**

Refer to Circuit/System Testing below - Both Outside Rearview Mirrors Inoperative.
 - **If the driver outside mirror glass does not move UP, DOWN, LEFT or RIGHT**

Refer to Circuit/System Testing below - Driver Outside Mirror Movement Malfunction.
 - **If the passenger outside mirror glass does not move UP, DOWN, LEFT or RIGHT**

Refer to Circuit/System Testing below- Passenger Outside Mirror Movement Malfunction.
 - **If the mirror glass of the A9A Outside Rearview Mirror-Driver and the A9B Outside Rearview Mirror-Passenger move UP, DOWN, LEFT and RIGHT**
2. All OK.

Circuit/System Testing

Both Outside Rearview Mirrors Inoperative

1. Ignition OFF and all vehicle systems OFF, disconnect the harness connector at the S52 Outside Rearview Mirror Switch. It may take up to 2 minutes for all vehicle systems to power down.
2. Test for less than 10 ohms between the ground circuit terminal 5 and ground.

- **If 10 ohms or greater**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the ground circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, repair the open/high resistance in the ground connection.
 - **If less than 10 ohms**
- 3. Verify a test lamp illuminates between the B+ circuit terminal 4 and ground.
 - **If the test lamp does not illuminate and the circuit fuse is good**
 1. Ignition OFF.
 2. Test for less than 2 ohms in the B+ circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, verify the fuse is not open and there is voltage at the fuse.
 - **If the test lamp does not illuminate and the circuit fuse is open**
 1. Ignition OFF.
 2. Test for infinite resistance between the B+ circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for infinite resistance between each of the control circuit terminals listed below and ground:
 - Control circuit terminal 1
 - Control circuit terminal 2
 - Control circuit terminal 3
 - Control circuit terminal 7
 - Control circuit terminal 8
 - Control circuit terminal 9
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance, replace the appropriate M77 Outside Rearview Mirror Motor.
 - **If the test lamp illuminates**
- 4. Test or replace the S52 Outside Rearview Mirror Switch.

Driver Outside Mirror Movement Malfunction

1. Ignition OFF, disconnect the harness connector at the A9A Outside Rearview Mirror-Driver. Ignition ON
2. Connect a test lamp between the control circuit terminal A and control circuit terminal B.
3. Verify the test lamp turns ON when commanding the UP and DOWN states with the S52 Outside Rearview Mirror Switch.
 - **If the test lamp remains OFF during either of the commands**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch.
 2. Test for infinite resistance between each control circuit and ground.

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- If less than infinite resistance, repair the short to ground on the circuit.
- If infinite resistance
- 3. Test for less than 2 ohms in each control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, test or replace the S52 Outside Rearview Mirror Switch.
- **If the test lamp is always ON**
- 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch, ignition ON.
- 2. Test for less than 1 V between each control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, test or replace the S52 Outside Rearview Mirror Switch
- **If the test lamp turns ON during each of the commands**
- 4. Connect a test lamp between the control circuit terminal A and control circuit terminal C.
- 5. Verify the test lamp turns ON when commanding the LEFT and RIGHT states with the S52 Outside Rearview Mirror Switch.
 - **If the test lamp remains OFF during either of the commands**
 - 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch.
 - 2. Test for infinite resistance between each control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 - 3. Test for less than 2 ohms in each control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, test or replace the S52 Outside Rearview Mirror Switch.
 - **If the test lamp is always ON**
 - 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch, ignition ON.
 - 2. Test for less than 1 V between each control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, test or replace the S52 Outside Rearview Mirror Switch
 - **If the test lamp turns ON during each of the commands**
- 6. Test or replace the M77D Outside Rearview Mirror Motor-Driver.

Passenger Outside Mirror Movement Malfunction

1. Ignition OFF, disconnect the harness connector at the A9B Outside Rearview Mirror-Passenger. Ignition ON
2. Connect a test lamp between the control circuit terminal A and control circuit terminal B.
3. Verify the test lamp turns ON when commanding the UP and DOWN states with the S52 Outside Rearview Mirror Switch.

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- **If the test lamp remains OFF during either of the commands**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch.
 2. Test for infinite resistance between each control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 ohms in each control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, test or replace the S52 Outside Rearview Mirror Switch.
- **If the test lamp is always ON**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch, ignition ON.
 2. Test for less than 1 V between each control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, test or replace the S52 Outside Rearview Mirror Switch
- **If the test lamp turns ON during each of the commands**
 4. Connect a test lamp between the control circuit terminal A and control circuit terminal C.
 5. Verify the test lamp turns ON when commanding the LEFT and RIGHT states with the S52 Outside Rearview Mirror Switch.
 - **If the test lamp remains OFF during either of the commands**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch.
 2. Test for infinite resistance between each control circuit and ground.
 - If less than infinite resistance, repair the short to ground on the circuit.
 - If infinite resistance
 3. Test for less than 2 ohms in each control circuit end to end.
 - If 2 ohms or greater, repair the open/high resistance in the circuit.
 - If less than 2 ohms, test or replace the S52 Outside Rearview Mirror Switch.
 - **If the test lamp is always ON**
 1. Ignition OFF, remove the test lamp, disconnect the harness connector at the S52 Outside Rearview Mirror Switch, ignition ON.
 2. Test for less than 1 V between each control circuit and ground.
 - If 1 V or greater, repair the short to voltage on the circuit.
 - If less than 1 V, test or replace the S52 Outside Rearview Mirror Switch
 - **If the test lamp turns ON during each of the commands**
 6. Test or replace the M77P Outside Rearview Mirror Motor-Passenger.

Repair Instructions

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

- Outside Rearview Mirror Remote Control Switch Replacement
- Outside Rearview Mirror Inner Actuator Replacement

REPAIR INSTRUCTIONS

OUTSIDE REARVIEW MIRROR REPLACEMENT

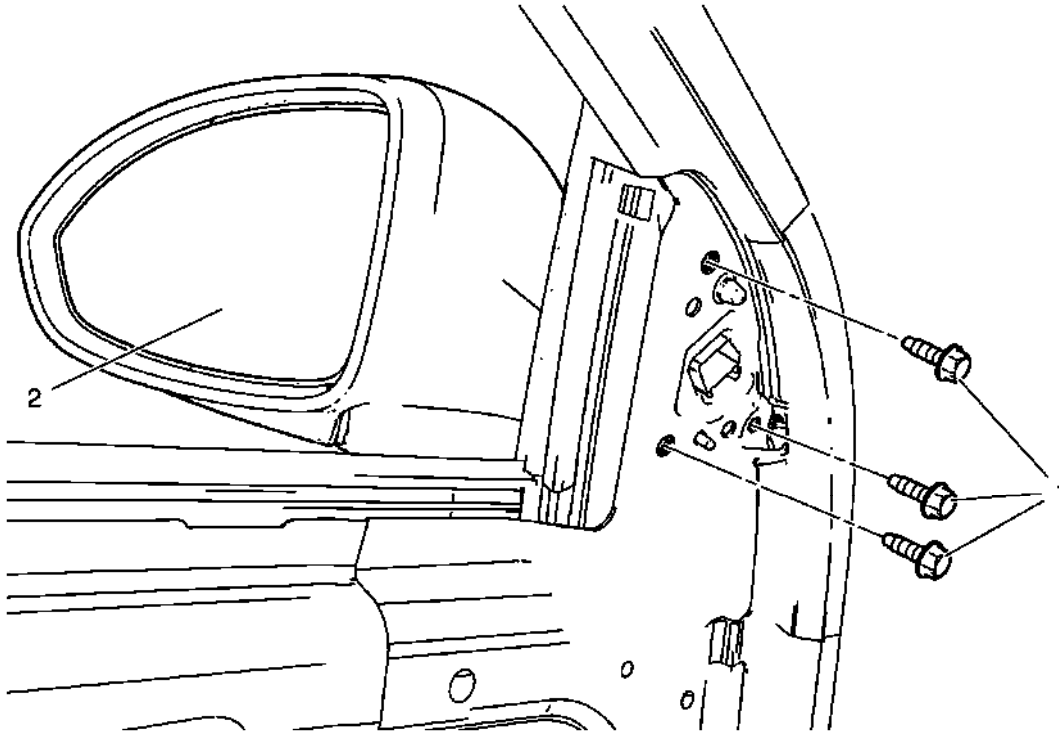


Fig. 3: View Of Outside Rearview Mirror And Mount Plate Bolts
Courtesy of GENERAL MOTORS COMPANY

Outside Rearview Mirror Replacement

Callout	Component Name
Preliminary Procedures Remove the front side door upper trim cover. Refer to <u>Front Side Door Upper Trim Cover Replacement</u> .	
1	Outside Rearview Mirror Mount Plate Bolt (Qty: 3) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 9 N.m (80 lb in)
	Outside Rearview Mirror

2	Procedure Disconnect electrical connector.
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OUTSIDE REARVIEW MIRROR HOUSING COVER REPLACEMENT

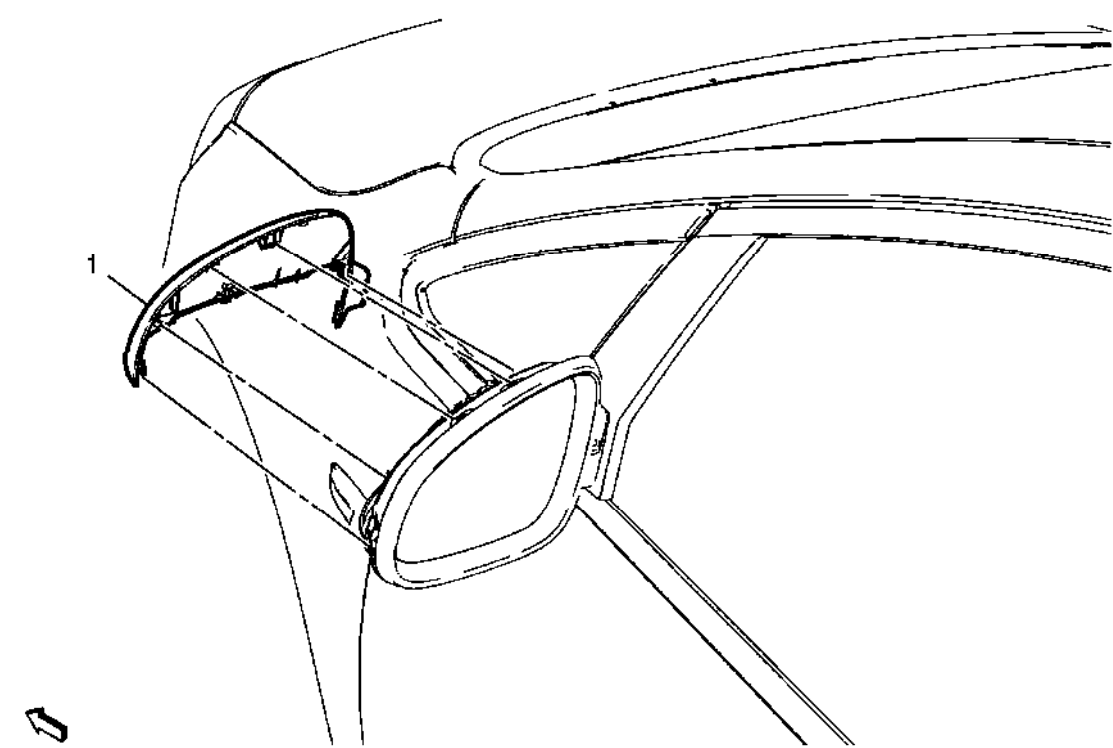


Fig. 4: Outside Rearview Mirror Housing Cover
Courtesy of GENERAL MOTORS COMPANY

Outside Rearview Mirror Housing Cover Replacement

Callout	Component Name
1	Outside Rearview Mirror Housing Cover Procedure 1. Using plastic pry tools, insert tools on top and bottom between the housing cover and mirror body. 2. Pry carefully and equally on top and bottom to release housing toward the front of vehicle. 3. Install housing cover to mirror body by applying pressure on housing cover toward the rear of vehicle until retainers are engaged.

OUTSIDE REARVIEW MIRROR REMOTE CONTROL SWITCH REPLACEMENT

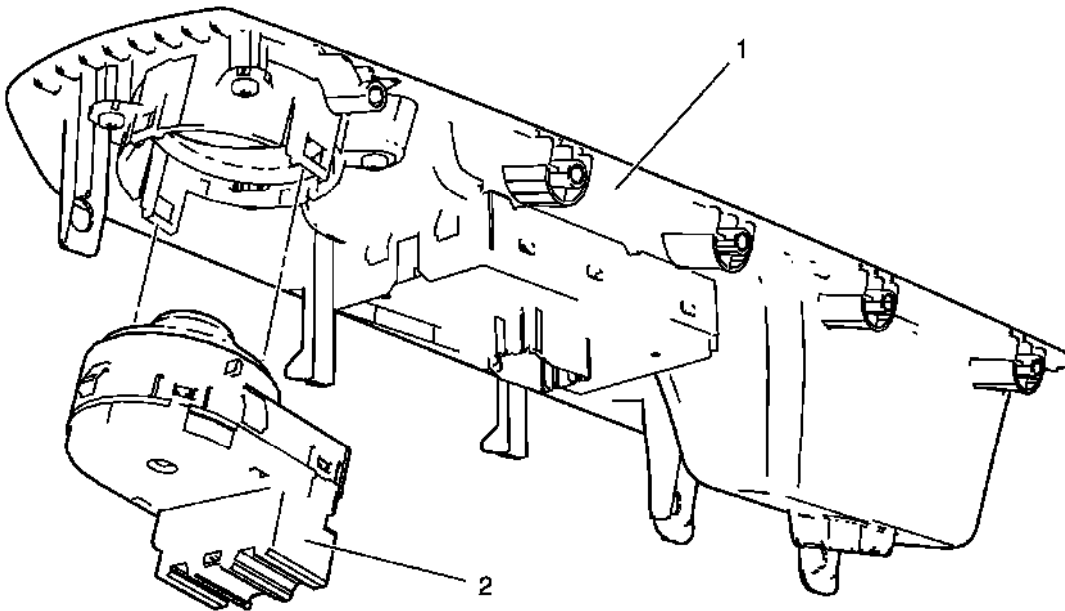


Fig. 5: View Of Outside Remote Control Rearview Mirror Switch And Bezel
Courtesy of GENERAL MOTORS COMPANY

Outside Rearview Mirror Remote Control Switch Replacement

Callout	Component Name
Preliminary Procedures Remove front side door window switch bezel. Refer to <u>Front Side Door Window Switch Bezel Replacement</u> .	
1	Side Window Switch Bezel
2	Outside Remote Control Rearview Mirror Switch
Procedure Using a plastic pry tool, gently pry on the sides to release the switch.	

OUTSIDE REARVIEW MIRROR INNER ACTUATOR REPLACEMENT

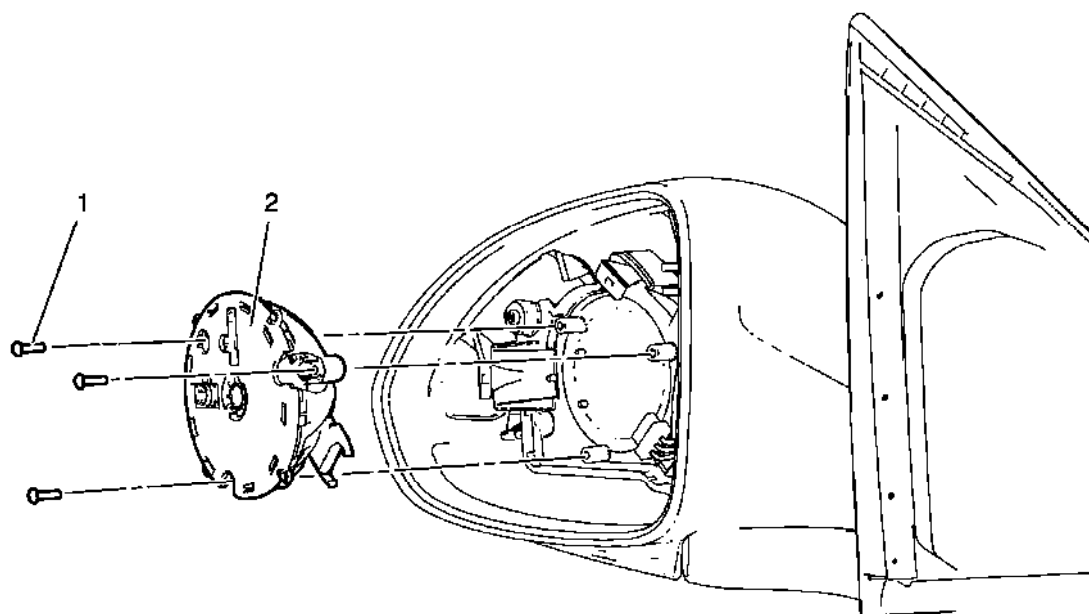


Fig. 6: Outside Rearview Mirror Inner Actuator
Courtesy of GENERAL MOTORS COMPANY

Outside Rearview Mirror Inner Actuator Replacement

Callout	Component Name
Preliminary Procedures Remove the outside rearview mirror glass. Refer to <u>Outside Rearview Mirror Glass Replacement</u> .	
1	Outside Rearview Mirror Inner Actuator Bolt (Qty: 3) CAUTION: Refer to <u>Fastener Caution</u> .
2	Outside Rearview Mirror Inner Actuator Procedure Disconnect the electrical connector.

OUTSIDE REARVIEW MIRROR GLASS REPLACEMENT

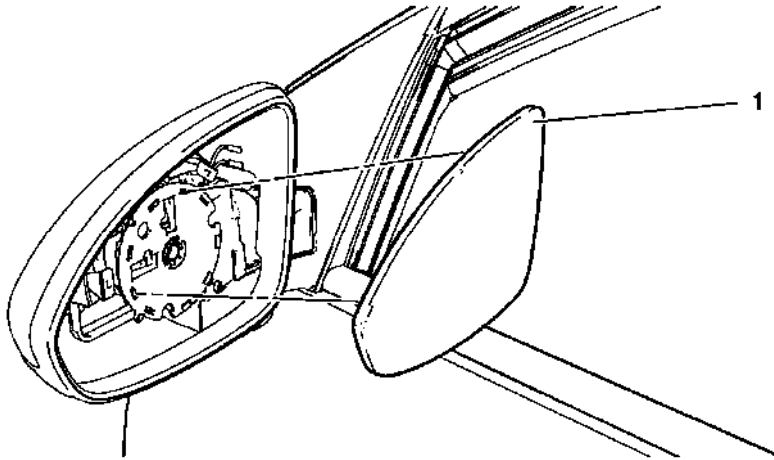


Fig. 7: View Of Outside Rearview Mirror Glass
Courtesy of GENERAL MOTORS COMPANY

Outside Rearview Mirror Glass Replacement

Callout	Component Name
1	Outside Rearview Mirror Glass WARNING: Refer to <u>Glass and Sheet Metal Handling Warning</u> . Procedure 1. Release the mirror glass backing from the mirror housing by pulling outward. 2. Disconnect electrical connector if equipped.

OUTSIDE REARVIEW MIRROR HOUSING REPLACEMENT

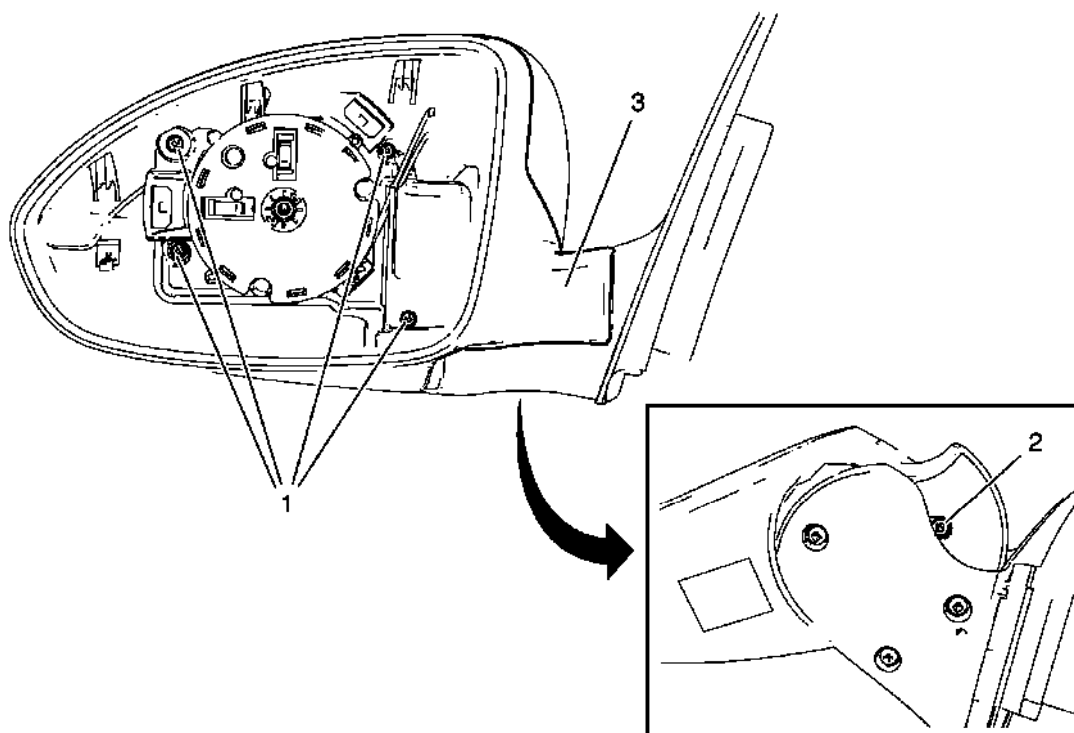
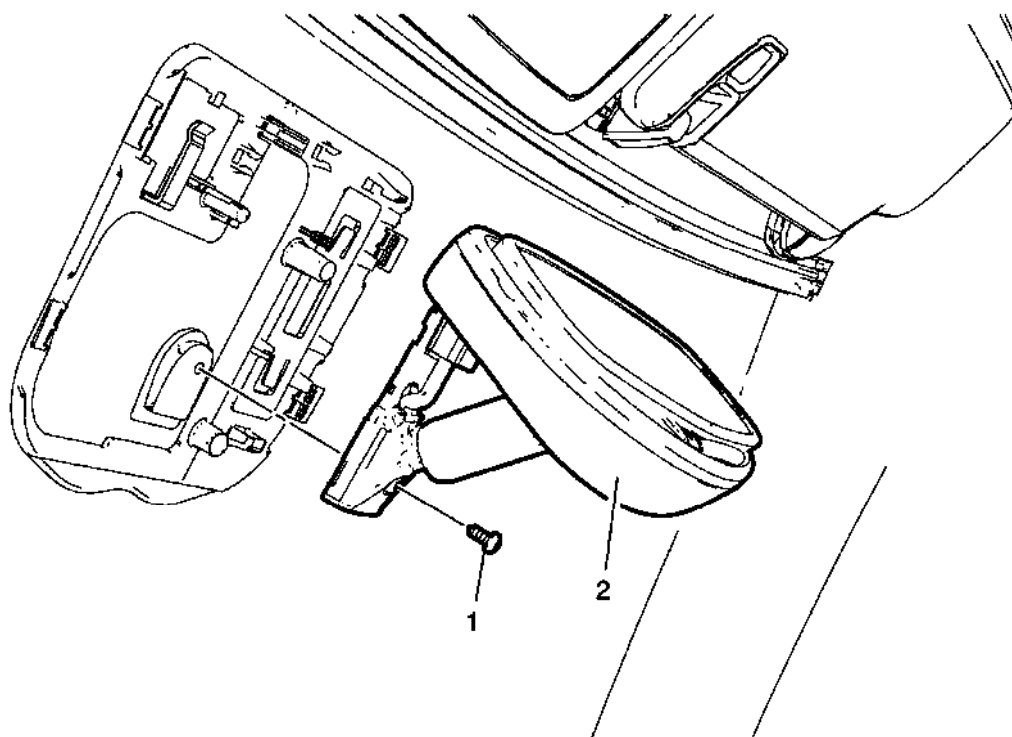


Fig. 8: Outside Rearview Mirror Housing
Courtesy of GENERAL MOTORS COMPANY

Outside Rearview Mirror Housing Replacement

Callout	Component Name
Preliminary Procedures Remove outside rearview mirror glass. Refer to <u>Outside Rearview Mirror Glass Replacement</u> .	
1	Outside Rearview Mirror Housing Screw (Qty: 4) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2.5 N.m (22 lb in)
2	Lower Outside Rearview Mirror Housing Screw Tighten 2.5 N.m (22 lb in)
3	Outside Rearview Mirror Housing

INSIDE REARVIEW MIRROR REPLACEMENT

**Fig. 9: Inside Rearview Mirror**

Courtesy of GENERAL MOTORS COMPANY

Inside Rearview Mirror Replacement

Callout	Component Name
Preliminary Procedure Remove the inside rearview mirror mount plate cover. Refer to <u>Inside Rearview Mirror Mount Plate Cover Replacement</u> .	
1	Inside Rearview Mirror Bolt CAUTION: Refer to <u>Fastener Caution</u> .
2	Inside Rearview Mirror Procedure 1. Disconnect the electrical connector. 2. Slide the mirror in an upward motion in order to remove.

DESCRIPTION AND OPERATION**AUTOMATIC DAY-NIGHT MIRROR DESCRIPTION AND OPERATION****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.

OUTSIDE MIRROR DESCRIPTION AND OPERATION

Power Mirror System Components

The power mirror system consists of the following components:

- Outside rearview mirror switch
- Mirror selector switch
- Driver outside rearview mirror
- Passenger outside rearview mirror

Each of the outside rearview mirror contains two motors. The vertical motor operates the mirror in the up and down directions, and the horizontal motor operates the mirror in the left and right directions.

Power Mirror System Controls

The outside rearview mirror switch is a four position directional switch: Up, Down, Left and Right.

The mirror select switch is a three position switch: left, neutral/fold, and right.

Power Mirror System Operation

The outside rearview mirror switch receives battery voltage from the underhood fuse block. The power mirror switch also receives a constant ground.

The four positions of the direction switch have dual switch contacts. Each of the contacts are connected to opposing sides of the appropriate power mirror motors through the selector switch. The selector switch completes these circuits depending on the position of the selector switch, L or R.

If the selector switch is placed in the L position and the up switch is pressed, battery voltage will be supplied to the left outside rearview mirror vertical motor through the left mirror motor vertical control circuit and ground through the left mirror motor common control circuit. If the down switch is pressed, battery voltage will be supplied to the left outside rearview mirror vertical motor through the left mirror motor common control circuit and ground through the left mirror motor vertical control circuit.

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The remainder of the mirror functions operate in the same manner as described above. Placing the power mirror switch in opposing positions, left/right or up/down, will reverse the polarity to the mirror motor, reversing the direction of movement.

Heated Mirrors (If Equipped)

The heated mirrors are controlled through the rear defog relay. Whenever the rear window defogger is turned on battery voltage is supplied to the mirror heater elements through the left and right mirror heater element control circuits.