

Rear View Mirrors

DTC Chart: DDM

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
B11F6:11	Driver Folding Mirror Motor: Circuit Short To Ground	GO to Pinpoint Test E
B11F6:15	Driver Folding Mirror Motor: Circuit Short To Battery or Open	GO to Pinpoint Test E
B1C09:11	Driver Left/Right Mirror Motor: Circuit Short To Ground	GO to Pinpoint Test B
B1C09:15	Driver Left/Right Mirror Motor: Circuit Short To Battery Or Open	GO to Pinpoint Test B
B1C10:11	Driver Up/Down Mirror Motor: Circuit Short To Ground	GO to Pinpoint Test B
B1C10:15	Driver Up/Down Mirror Motor: Circuit Short To Battery Or Open	GO to Pinpoint Test B
B1C13:11	Driver Up/Down Mirror Motor Feedback: Circuit Short To Ground	GO to Pinpoint Test C
B1C13:15	Driver Up/Down Mirror Motor Feedback: Circuit Short To Battery Or Open	GO to Pinpoint Test C
B1C14:11	Driver Left/Right Mirror Motor Feedback: Circuit Short To Ground	GO to Pinpoint Test C
B1C14:15	Driver Left/Right Mirror Motor Feedback: Circuit Short To Battery Or Open	GO to Pinpoint Test C
C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	GO to Pinpoint Test C
C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery or Open	GO to Pinpoint Test C
All other DDM Diagnostic Trouble Codes (DTCs)	-	REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

DTC Chart: PDM

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
B11F7:11	Passenger Folding Mirror Motor: Circuit Short To Ground	GO to Pinpoint Test E

B11F7:15	Passenger Folding Mirror Motor: Circuit Short To Battery or Open	GO to Pinpoint Test E
B1C11:11	Passenger Left/Right Mirror Motor: Circuit Short To Ground	GO to Pinpoint Test B
B1C11:15	Passenger Left/Right Mirror Motor: Circuit Short To Battery Or Open	GO to Pinpoint Test B
B1C12:11	Passenger Up/Down Mirror Motor: Circuit Short To Ground	GO to Pinpoint Test B
B1C12:15	Passenger Up/Down Mirror Motor: Circuit Short To Battery Or Open	GO to Pinpoint Test B
B1C15:11	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Ground	GO to Pinpoint Test C
B1C15:15	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Battery Or Open	GO to Pinpoint Test C
B1C16:11	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Ground	GO to Pinpoint Test C
B1C16:15	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Battery Or Open	GO to Pinpoint Test C
C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	GO to Pinpoint Test C
C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery or Open	GO to Pinpoint Test C
All other PDM Diagnostic Trouble Codes (DTCs)	-	REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

DTC Chart: FCIM

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
B1C83:12	Rear Defog Relay: Circuit Short to Battery	GO to Pinpoint Test D
B1C83:14	Rear Defog Relay: Circuit Short To Ground or Open	GO to Pinpoint Test D
All other FCIM Diagnostic Trouble Codes (DTCs)	-	Refer to the appropriate section in Group 415 for the procedure.

Symptom Chart(s)

Symptom Chart: Rear View Mirrors - Exterior

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

Condition	Possible Sources	Action <i>New: hover over Pinpoint Test links to show title</i>
One or both exterior mirrors fold inward due to wind pressure	Refer to the Pinpoint Test	GO to Pinpoint Test G
Both exterior mirrors are inoperative (with or without memory mirrors)	Refer to the Pinpoint Test	GO to Pinpoint Test F
A single mirror is inoperative/does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test A
A single mirror horizontal or vertical operation does not function correctly	Refer to the Pinpoint Test	GO to Pinpoint Test B
The exterior mirror memory recall feature is inoperative/does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test C
One or both heated exterior mirrors are inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test D
The heated exterior mirrors do not operate from the voice command	- Defrost system concern - Voice recognition system concern	- VERIFY the heated exterior mirrors operation using the FCIM defrost button (if equipped) or heated exterior mirror button (if equipped). - If the heated exterior mirrors are still inoperative, GO to Pinpoint Test D - If the heated exterior mirrors operate, DIAGNOSE the voice recognition system. REFER to: Information and Entertainment System (415-00 Information and Entertainment System - General Information, Diagnosis and Testing).
The heated exterior mirrors do not operate from the touchscreen command	- Defrost system concern - APIM concern	- VERIFY the heated exterior mirrors operation using the FCIM defrost button (if equipped) or heated exterior mirror button (if equipped). - If the heated exterior mirrors are still inoperative, GO to Pinpoint Test D - If the heated exterior mirrors operate, DIAGNOSE the touchscreen. REFER to: Information and Entertainment System (415-00 Information and Entertainment System - General Information, Diagnosis and Testing).
The RH and LH heated exterior mirrors do not defrost at the same rate	Normal operation of the heated exterior mirror	No action required, the system is operating correctly at this time.
The RH and/or LH power folding mirror is inoperative/does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test E
The RH and LH power folding mirror do not fold and/or unfold at the same rate of speed	Normal operation of the power folding mirror	No action required, the system is operating correctly at this time.
The RH and/or LH power telescoping mirror is inoperative/does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test H
An exterior mirror selection switch LED is inoperative (exterior mirror selection switch functions normally)	Exterior mirror selection switch	INSTALL a new left front door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).
The exterior mirror puddle lamp is inoperative or always on	Refer to the Pinpoint Test	REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).
The exterior mirror turn signal is inoperative or always on	Refer to the Pinpoint Test	REFER to: Turn Signal and Hazard Lamps (417-01 Exterior Lighting, Diagnosis and Testing).

The exterior mirror parking lamp is inoperative or always on	Refer to the Pinpoint Test	REFER to: Parking, Rear and License Plate Lamps (417-01 Exterior Lighting, Diagnosis and Testing).
The exterior mirror spot lamp is inoperative or always on	Refer to the Pinpoint Test	REFER to: Spot Lamps (417-01 Exterior Lighting, Diagnosis and Testing).
The BLISÂ® indicator is inoperative or always on	Refer to the Pinpoint Test	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
Ambient Air Temperature (AAT) sensor concerns	Refer to the Pinpoint Test	- For vehicles with EMTC, REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). - For vehicles with DATC, REFER to: Climate Control System - Vehicles With: Dual Automatic Temperature Control (DATC) (412-00 Climate Control System - General Information, Diagnosis and Testing).

Symptom Chart: Rear View Mirrors - Interior

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

Condition	Possible Sources	Action <i>New: hover over Pinpoint Test links to show title</i>
The interior mirror is blemished	Interior mirror glass/housing is dirty	CLEAN the affected interior mirror surface
The interior mirror vibrates or is loose	Interior mirror mounting loose	If the mirror is still on the windshield, do not remove . ATTEMPT to fully seat the mirror first. If the mirror is still loose or vibrates, REMOVE and REINSTALL the mirror. If the condition still exists, INSTALL a new interior mirror. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).
The interior auto-dimming mirror does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test I

Symptom Chart: Rear View Mirrors - Exterior Noise, Vibration and Harshness (NVH)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: Diagnostic Methods (100-00 General Information, Description and Operation).

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

Condition	Possible Sources	Action <i>New: hover over Pinpoint Test links to show title</i>

Exterior mirror housing vibrates or is loose	Power folding mirrors are not synchronized (if equipped)	SYNCHRONIZE the power folding mirrors. REFER to: Power Mirrors Synchronization (501-09 Rear View Mirrors, General Procedures).
	Exterior mirror mounting nuts loose	TIGHTEN the exterior mirror mounting nuts. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
	Aftermarket air deflector/stone shields	If possible, REMOVE the aftermarket parts and ROAD TEST the vehicle. If the concern is no longer present, ADVISE the customer that the aftermarket components were causing the undesired vibration.
Exterior mirror glass vibrates or is loose	- Exterior mirror motor mounting screws loose - Exterior mirror glass loose	PRESS the center of the exterior mirror glass up, down, left and right to make sure the exterior mirror glass is seated correctly. If the exterior mirror glass is still loose, REMOVE the exterior mirror glass. INSPECT the exterior mirror backing plate for damage. INSPECT the exterior mirror motor mounting screws and TIGHTEN if necessary. If the exterior mirror backing plate is damaged, INSTALL a new exterior mirror glass. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
Wind noise	Foam gasket between exterior mirror housing and door is misaligned or damaged	VERIFY the gasket is in good condition. If necessary, REPOSITION the gasket between the exterior mirror housing and the door. The foam gasket is not serviceable and if it cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
	Exterior mirror is not correctly fitted to the door	VERIFY there are no gaps between the exterior mirror and the door. If necessary, LOOSEN the exterior mirror nuts and REPOSITION the exterior mirror as necessary. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
	Exterior mirror impact damage	INSPECT the exterior mirror to ensure that there is no damage to the housing or glass.

Pinpoint Tests

A Single Mirror Is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- Power window concern
- Exterior mirror control switch (integral to the LH front window control switch)
- Exterior mirror motor
- Exterior mirror

Visual Inspection and Diagnostic Pre-Checks

- Inspect the suspect exterior mirror for damage or obstructions.

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

PINPOINT TEST A : A SINGLE MIRROR IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

A1 CHECK THE EXTERIOR MIRROR CONTROL SWITCH PARAMETER IDENTIFICATIONS (PIDS)

- Using a diagnostic scan tool, view the DDM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, view the following DDM mirror control switch Parameter Identifications (PIDs):
 - L_MIR_SEL
 - R_MIR_SEL
 - MIR_SW_DOWN
 - MIR_SW_UP
 - MIR_SW_L
 - MIR_SW_R
- While monitoring the Parameter Identifications (PIDs), switch the mirror control switch to the left mirror and press each directional control switch.
- While monitoring the Parameter Identifications (PIDs), switch the mirror control switch to the right mirror and press each directional control switch.

Do the Parameter Identifications (PIDs) agree with the mirror control switch presses?

Yes	GO to A2
No	INSTALL a new LH front door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).

A2 CHECK THE SUSPECT EXTERIOR MIRROR MOTOR COMMON CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: suspect exterior mirror [C521](#) (LH) or [C622](#) (RH)
- Disconnect: DDM [C501B](#) (LH mirror) or PDM [C652B](#) (RH mirror).
- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C501B-17	Ω	C521-4

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C652B-17	Ω	C622-4

Is the resistance less than 3 ohms?

Yes	GO to A3
No	REPAIR the circuit.

A3 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
 - Open or short circuits
 - Damaged or pushed out pins
 - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror motor in question. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

A Single Mirror Horizontal Or Vertical Operation Does Not Function Correctly

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

DDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C09:11	Driver Left/Right Mirror Motor: Circuit Short To Ground	A continuous and on-demand DTC that sets in the DDM if the DDM detects a higher than expected current draw when voltage is applied to the horizontal mirror motor circuit.
B1C09:15	Driver Left/Right Mirror Motor: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the DDM if the DDM detects a lower than expected current draw when voltage is applied to the horizontal mirror motor circuit.
B1C10:11	Driver Up/Down Mirror Motor: Circuit Short To Ground	A continuous and on-demand DTC that sets in the DDM if the DDM detects a higher than expected current draw when voltage is applied to the vertical mirror motor circuit.
B1C10:15	Driver Up/Down Mirror Motor: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the DDM if the DDM detects a lower than expected current draw when voltage is applied to the vertical mirror motor circuit.

PDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C11:11	Passenger Left/Right Mirror Motor: Circuit Short To Ground	A continuous and on-demand DTC that sets in the PDM if the PDM detects a higher than expected current draw when voltage is applied to the horizontal mirror motor circuit.
B1C11:15	Passenger Left/Right Mirror Motor: Circuit Short To Battery Or Open	A continuous memory DTC that sets in the PDM if the PDM detects a lower than expected current draw when voltage is applied to the horizontal mirror motor circuit.
B1C12:11	Passenger Up/Down Mirror Motor: Circuit Short To Ground	A continuous memory DTC that sets in the PDM if the PDM detects a higher than expected current draw when voltage is applied to the vertical mirror motor circuit.
B1C12:15	Passenger Up/Down Mirror Motor: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the PDM if the PDM detects a lower than expected current draw when voltage is applied to the vertical mirror motor circuit.

Possible Causes

- Wiring, terminals or connectors
- Exterior mirror control switch (integral to the LH front window control switch)
- Power mirror system concern
- Exterior mirror motor
- Exterior mirror
- DDM
- PDM

Visual Inspection and Diagnostic Pre-Checks

- Inspect the suspect exterior mirror for damage or obstructions.

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

PINPOINT TEST B : A SINGLE MIRROR HORIZONTAL OR VERTICAL OPERATION DOES NOT FUNCTION CORRECTLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

B1 CHECK THE MIRROR MOVEMENT

- Ignition ON.
- Operate the suspect exterior mirror in the up, down, left and right directions.

Does the suspect exterior mirror operate in any direction?

Yes	GO to B2
No	GO to Pinpoint Test A

B2 CHECK THE EXTERIOR MIRROR CONTROL SWITCH PARAMETER IDENTIFICATIONS (PIDS)

- Using a diagnostic scan tool, view the DDM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, view the following DDM mirror control switch Parameter Identifications (PIDs):
 - L_MIR_SEL
 - R_MIR_SEL
 - MIR_SW_DOWN
 - MIR_SW_UP
 - MIR_SW_L
 - MIR_SW_R
- While monitoring the Parameter Identifications (PIDs), press the left mirror selection switch and press each directional control switch.
- While monitoring the Parameter Identifications (PIDs), press the right mirror selection switch and press each directional control switch.

Do the Parameter Identifications (PIDs) agree with the mirror control switch presses?

Yes	GO to B3
No	INSTALL a new LH front door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation).

B3 CHECK THE OUTPUT TO THE SUSPECT EXTERIOR MIRROR

NOTICE: The following step uses a test lamp to simulate normal circuit loads. Use only a Rotunda Test Lamp (SGT27000) or 250-300mA incandescent bulb test lamp. To avoid connector terminal damage, use the Rotunda Flex Probe kit for the test lamp probe connection to the vehicle. Do not use the test lamp probe directly on any connector.

- Ignition OFF.
- Disconnect: suspect exterior mirror [C521](#) (LH) or [C622](#) (RH)
- Ignition ON.
- Select the suspect exterior mirror by pressing the appropriate exterior mirror selection switch.
- Connect:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-5		Ground
C521-4		Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-5		Ground
C622-4		Ground

- Operate the mirror in left/right directions.
- Connect:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-3		Ground
C521-4		Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-3		Ground
C622-4		Ground

- Operate the mirror in up/down directions.

Does the test lamp illuminate only when the direction button is pressed each directions?

Yes	GO to B4
No	GO to B5

B4 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
 - Open or short circuits
 - Damaged or pushed out pins
 - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror motor in question. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

B5 CHECK THE SUSPECT EXTERIOR MIRROR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: DDM [C501B](#) (LH mirror) or PDM [C652B](#) (RH mirror).
- Ignition ON.
- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-3		Ground
C521-4		Ground
C521-5		Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-3		Ground
C622-4		Ground
C622-5		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to B6

B6 CHECK THE SUSPECT EXTERIOR MIRROR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-3	Ω	Ground
C521-4	Ω	Ground
C521-5	Ω	Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-3	Ω	Ground
C622-4	Ω	Ground
C622-5	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to B7
No	REPAIR the circuit in question.

B7 CHECK THE SUSPECT EXTERIOR MIRROR CIRCUITS FOR AN OPEN

- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-3	Ω	C501B-7
C521-4	Ω	C501B-17
C521-5	Ω	C501B-8

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-3	Ω	C652B-7
C622-4	Ω	C652B-17
C622-5	Ω	C652B-8

Are the resistances less than 3 ohms?

Yes	GO to B8
No	REPAIR the circuit in question.

B8 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) / PDM (PASSENGER DOOR MODULE) OPERATION

- Disconnect and inspect all DDM/ PDM connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DDM/ PDM connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DDM/ PDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation). REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Exterior Mirror Memory Recall Feature Is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

DDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C13:11	Driver Up/Down Mirror Motor Feedback: Circuit Short To Ground	A continuous and on-demand DTC that sets in the DDM if the DDM detects a short to ground from the vertical position feedback circuit.
B1C13:15	Driver Up/Down Mirror Motor Feedback: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the DDM if the DDM detects a short to voltage or open from the vertical position feedback circuit.
B1C14:11	Driver Left/Right Mirror Motor Feedback: Circuit Short To Ground	A continuous and on-demand DTC that sets in the DDM if the DDM detects a short to ground from the horizontal position feedback circuit.
B1C14:15	Driver Left/Right Mirror Motor Feedback: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the DDM if the DDM detects a short to voltage or open from the horizontal position feedback circuit.
C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	A continuous and on-demand DTC that sets in the DDM/ PDM if the DDM/ PDM detects a short to ground from the exterior mirror position sensor voltage supply circuit.
C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery or Open	A continuous and on-demand DTC that sets in the DDM/ PDM if the DDM/ PDM detects a short to voltage or open from the exterior mirror position sensor voltage supply circuit.

PDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C15:11	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Ground	A continuous and on-demand DTC that sets in the PDM if the PDM detects a short to ground from the vertical position feedback circuit.
B1C15:15	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the PDM if the PDM detects a short to voltage or open from the vertical position feedback circuit.
B1C16:11	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Ground	A continuous and on-demand DTC that sets in the PDM if the PDM detects a short to ground from the horizontal position feedback circuit.
B1C16:15	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Battery Or Open	A continuous and on-demand DTC that sets in the PDM if the PDM detects a short to voltage or open from the horizontal position feedback circuit.
C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	A continuous and on-demand DTC that sets in the DDM/ PDM if the DDM/ PDM detects a short to ground from the exterior mirror position sensor voltage supply circuit.
C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery or Open	A continuous and on-demand DTC that sets in the DDM/ PDM if the DDM/ PDM detects a short to voltage or open from the exterior mirror position sensor voltage supply circuit.

Possible Causes

- Wiring, terminals or connectors
- Memory seat system concern
- Power mirror system concern
- Exterior mirror motor
- Exterior mirror
- DDM
- PDM

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

NOTE: If the DDM or PDM detects a mirror motor feedback circuit fault, a timeout strategy disable the memory operations for 30 seconds to prevent system damage. After the 30 seconds timeout, normal operation resumes.

PINPOINT TEST C : THE EXTERIOR MIRROR MEMORY RECALL FEATURE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

C1 CHECK THE MEMORY SEAT OPERATION

- Ignition ON.
- Check the operation of the memory seat recall function.

Does the memory seat recall function operate?

Yes	GO to C2
No	DIAGNOSE the memory seat system prior to continuing diagnostics for the exterior mirror memory recall feature. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).

C2 CHECK THE POWER MIRRORS OPERATION

- Check the operation of the of the up/down and left/right function of the suspect power mirrors.

Does the suspect mirror operate in all directions?

Yes	GO to C3
No	REFER to the exterior mirror symptom chart in this section to diagnose the suspect mirror prior to continuing this test.

C3 CHECK THE SUSPECT EXTERIOR MIRROR POSITION SENSOR CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: suspect exterior mirror [C521](#) (LH) or [C622](#) (RH)
- Disconnect: DDM [C501B](#) (LH mirror) or PDM [C652B](#) (RH mirror).
- Ignition ON.
- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-20		Ground
C521-10		Ground
C521-11		Ground
C521-9		Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-20		Ground
C622-10		Ground
C622-11		Ground
C622-9		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to C4

C4 CHECK THE SUSPECT EXTERIOR MIRROR POSITION SENSOR CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-20	Ω	Ground
C521-10	Ω	Ground
C521-11	Ω	Ground
C521-9	Ω	Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-20	Ω	Ground
C622-10	Ω	Ground
C622-11	Ω	Ground
C622-9	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to C5
No	REPAIR the circuit in question.

C5 CHECK THE SUSPECT EXTERIOR MIRROR POSITION SENSOR CIRCUITS FOR AN OPEN

- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-20	Ω	C501B-15
C521-10	Ω	C501B-6
C521-11	Ω	C501B-5
C521-9	Ω	C501B-16

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-20	Ω	C652B-15
C622-10	Ω	C652B-6
C622-11	Ω	C652B-5
C622-9	Ω	C652B-16

Are the resistances less than 3 ohms?

Yes	GO to C6
No	REPAIR the circuit in question.

C6 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
 - Open or short circuits
 - Damaged or pushed out pins
 - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror motor. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to C7
No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

C7 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) / PDM (PASSENGER DOOR MODULE) OPERATION

- Disconnect and inspect all DDM/ PDM connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DDM/ PDM connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DDM/ PDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation). REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or Both Heated Exterior Mirrors Are Inoperative

Refer to Wiring Diagrams Cell [56](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

REFER to: Glass, Frames and Mechanisms - System Operation and Component Description (501-11 Glass, Frames and Mechanisms, Description and Operation).

FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1C83:12	Rear Defog Relay: Circuit Short to Battery	A continuous and on-demand DTC that sets in the FCIM if the FCIM detects a short to voltage on the heated mirror/rear window defrost relay control circuit.
B1C83:14	Rear Defog Relay: Circuit Short To Ground or Open	A continuous and on-demand DTC that sets in the FCIM if the FCIM detects an open or short to ground on the heated mirror/rear window defrost relay control circuit.

Possible Causes

- Fuse
- Wiring, terminals or connectors
- Rear window defrost relay
- Exterior mirror glass
- Exterior spotter mirror glass

- Exterior mirror
- FCIM
- BJB

Visual Inspection and Diagnostic Pre-Checks

- Inspect the suspect exterior mirror housing and glass for damage.
- Inspect BJB fuse 10 (15A).

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

PINPOINT TEST D : ONE OR BOTH HEATED EXTERIOR MIRRORS ARE INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)	
D1 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)	
• Ignition ON. • Using a diagnostic scan tool, perform the FCIM self-test.	
Is Diagnostic Trouble Codes (DTCs) B1C83:14 retrieved?	
Yes	GO to D2
No	GO to D5
D2 PERFORM THE FCIM (FRONT CONTROLS INTERFACE MODULE) SELF TEST WITH A KNOWN GOOD RELAY INSTALLED	
• Ignition OFF. • Replace the rear window defrost relay with a known good relay. • Ignition ON. • Using a diagnostic scan tool, clear the FCIM Diagnostic Trouble Codes (DTCs). • Using a diagnostic scan tool, perform the FCIM self-test.	
Is Diagnostic Trouble Codes (DTCs) B1C83:14 present?	
Yes	GO to D3
No	INSTALL a new rear window defrost relay.
D3 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR A SHORT TO GROUND	

- Ignition OFF.
- Disconnect: Rear Window Defrost Relay.
- Disconnect: FCIM [C2402A](#).
- Measure:

With Centerstack Infotainment Display

Positive Lead	Measurement / Action	Negative Lead
C2402A-7	Ω	Ground

Without Centerstack Infotainment Display

Positive Lead	Measurement / Action	Negative Lead
C2402A-4	Ω	Ground

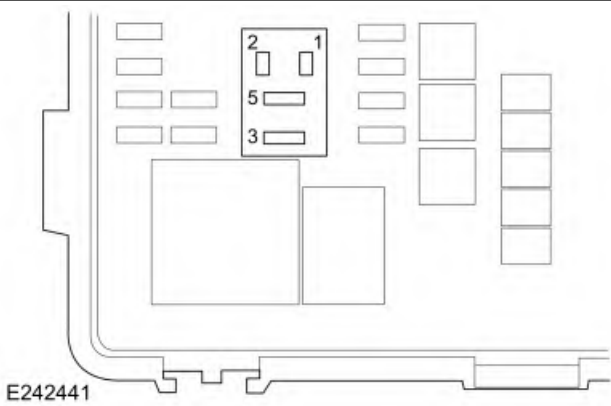
Is the resistance greater than 10,000 ohms?

Yes	GO to D4
No	REPAIR the circuit.

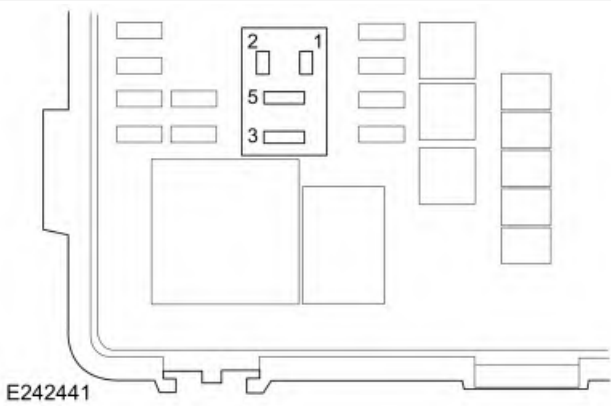
D4 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR AN OPEN

- Measure:

With Centerstack Infotainment Display

Positive Lead	Measurement / Action	Negative Lead
C2402A-7	Ω	 E242441 Rear Window Defrost Relay, cavity 2

Without Centerstack Infotainment Display

Positive Lead	Measurement / Action	Negative Lead
C2402A-4	Ω	 E242441 Rear Window Defrost Relay, cavity 2

Is the resistance less than 3 ohms?

Yes	GO to D13
No	REPAIR the circuit.

D5 CHECK THE OPERATION OF THE HEATED EXTERIOR MIRRORS GLASS

NOTE: The defrost system activates for 10 minutes

- Start the engine.
- Activate the heated mirror/rear window defrost system.
- With the rear window defrost ON, using an infrared temperature gun or equivalent, measure the temperature of the LH and RH exterior mirrors glass for approximately 30 seconds, noting changes in temperature.

Does the temperature of at least one exterior mirror glass rise?

Yes	GO to D6
No	GO to D8

D6 CHECK THE VOLTAGE TO THE INOPERATIVE HEATED EXTERIOR REAR VIEW MIRROR GLASS

- Ignition OFF.
- Disconnect: suspect exterior mirror [C521](#) (LH) or [C622](#) (RH)
- Start the engine.
- **NOTE:** *The defrost system activates for 10 minutes*

With the engine running, activate the heated mirror/rear window defrost system.

- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-1		Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to D7
No	REPAIR the circuit.

D7 CHECK THE INOPERATIVE EXTERIOR REAR VIEW MIRROR GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-8	Ω	Ground

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-8	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to D14
No	REPAIR the circuit

D8 CHECK THE REAR WINDOW DEFROST RELAY

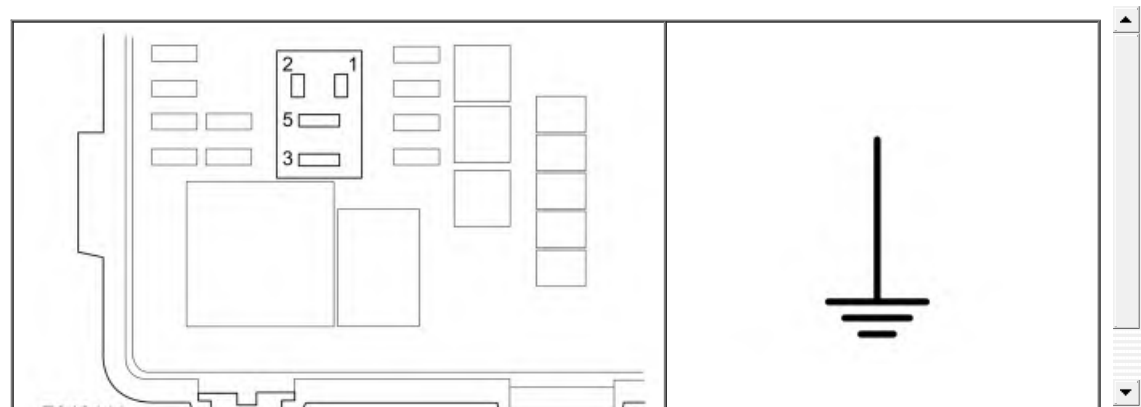
- Ignition OFF.
 - Replace the rear window defrost relay with a known good relay.
 - Start the engine.
 - **NOTE:** *The defrost system activates for 10 minutes.*
- Activate the heated mirror/rear window defrost switch to the ON position.
- With the rear window defrost ON, using an infrared temperature gun or equivalent, measure the temperature of the LH and RH exterior mirrors glass for approximately 30 seconds, noting changes in temperature.

Does the temp of the exterior mirrors glass rise?

Yes	INSTALL a new rear window defrost relay.
No	GO to D9

D9 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR SUPPLY VOLTAGE

- Ignition OFF.
- Disconnect: Rear Window Defrost Relay.
- Measure:



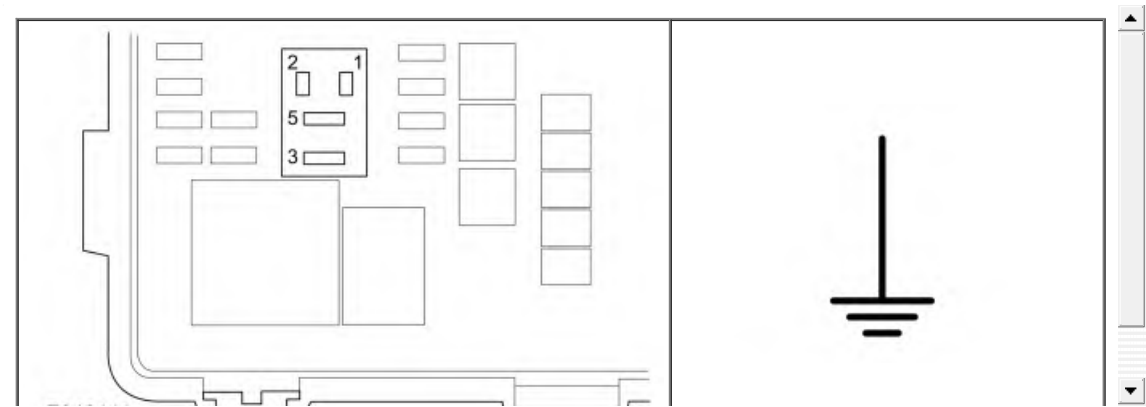
Positive Lead	Measurement / Action	Negative Lead
Rear Window Defrost Relay, cavity 3		Ground

Is the voltage greater than 11 volts?

Yes	GO to D10
No	REPAIR or INSTALL a new BJB.

D10 CHECK THE REAR WINDOW DEFROST RELAY CONTROL VOLTAGE SUPPLY

- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
Rear Window Defrost Relay, cavity 1		Ground

Is the voltage greater than 11 volts?

Yes	GO to D11
No	REPAIR the circuit.

D11 CHECK THE HEATED EXTERIOR MIRROR SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: Rear Window Defrost Relay.
- Disconnect: LH Exterior Mirror [C521](#).
- Measure:



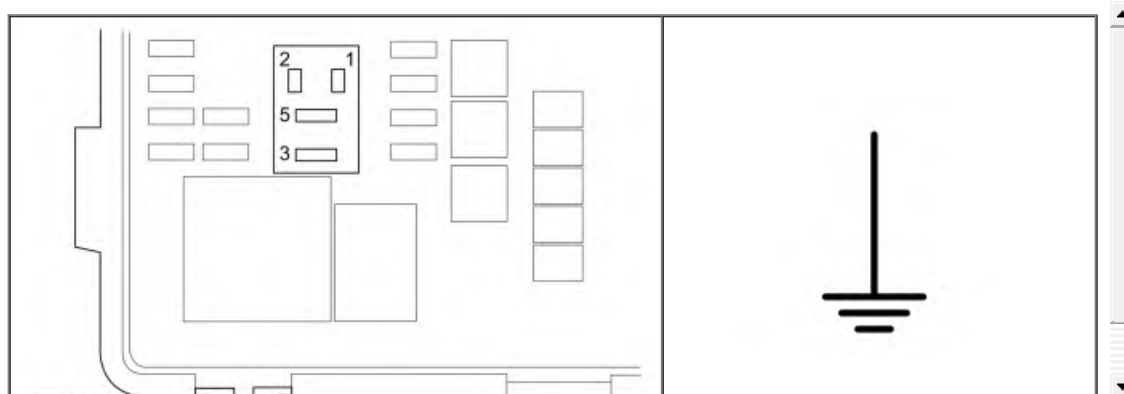
Positive Lead	Measurement / Action	Negative Lead
Rear Window Defrost Relay, cavity 5	Ω	C521-1

Is the resistance less than 3 ohms?

Yes	GO to D12
No	VERIFY that BJB fuse 10 (15A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

D12 CHECK THE REAR WINDOW DEFROST RELAY CONTROL CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: FCIM [C2402A](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
Rear Window Defrost Relay, cavity 2		Ground

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to D13

D13 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Disconnect and inspect all FCIM connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the FCIM connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, Click here to access Guided Routine (FCIM) .
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

D14 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
 - Open or short circuits
 - Damaged or pushed out pins
 - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror glass. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

The RH And/Or LH Power Folding Mirror Is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

DTC	Description	Fault Trigger Conditions
B11F6:11	Driver Folding Mirror Motor: Circuit Short To Ground	A continuous memory and on-demand DTC that sets in the DDM if the DDM detects a greater than expected current draw when voltage is applied to the LH exterior mirror fold in circuit.
B11F6:15	Driver Folding Mirror Motor: Circuit Short To Battery or Open	A continuous memory and on-demand DTC that sets in the DDM if the DDM detects a lower than expected current draw when voltage is applied to the LH exterior mirror fold in circuit.
B11F7:11	Passenger Folding Mirror Motor: Circuit Short To Ground	A continuous memory and on-demand DTC that sets in the PDM if the PDM detects a greater than expected current draw when voltage is applied to the RH exterior mirror fold in circuit.
B11F7:15	Passenger Folding Mirror Motor: Circuit Short To Battery or Open	A continuous memory and on-demand DTC that sets in the PDM if the PDM detects a lower than expected current draw when voltage is applied to the RH exterior mirror fold in circuit.

Possible Causes

- The power fold mirror motor lockout feature is active
- Binding or obstructed power fold mirror
- Power fold mirrors not synchronized
- Communication network concern
- Power window concern
- Wiring, terminals or connectors
- Exterior mirror fold switch (integral to the LH front door window control switch)
- Exterior mirror
- Door module

Visual Inspection and Diagnostic Pre-Checks

- Verify all of the power windows can be opened and closed normally using the LH front door window control switch.
- Verify that the power folding mirrors are not binding or obstructed.
- Verify the lockout feature is disabled.

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

PINPOINT TEST E : THE RH (RIGHT-HAND) AND/OR LH (LEFT-HAND) POWER FOLDING MIRROR IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

NOTE: The power folding mirrors must be synchronized anytime the RH, LH, or both power folding mirrors are folded or unfolded without using the power folding mirror control switch, or if a new power folding mirror has been installed. Refer to Power Folding Mirrors Synchronization in this section.

NOTE: If the exterior mirrors are folded and unfolded several times consecutively, the power lockout feature will disable the system for approximately 3-10 minutes to prevent damage to the power fold motors. After 3-10 minutes have elapsed, normal operation resumes.

E1 PERFORM A NETWORK TEST

- Ignition ON.
- Using a diagnostic scan tool, perform a network test.

Do the DDM and PDM pass the network test?

Yes	GO to E2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

E2 CHECK THE DOOR MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, perform the DDM and PDM self-test.

Are any DDM DTC Diagnostic Trouble Codes (DTCs) or PDM Diagnostic Trouble Codes (DTCs) present?

Yes	For DDM DTC B11F6:15 or PDM DTC B11F7:15, GO to E7 For DDM DTC B11F6:11 or PDM DTC B11F7:11, GO to E5 For all other DDM or PDM Diagnostic Trouble Codes (DTCs), REFER to the DTC charts in this section.
No	If both power folding mirrors are inoperative, GO to E3 If only one power folding mirror is inoperative, GO to E4

E3 CHECK THE LH (LEFT-HAND) FRONT DOOR WINDOW CONTROL SWITCH

- Operate all windows using the LH front door window control switch.

Do all the power windows operate correctly?

Yes	INSTALL a new LH front door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). If the concern is still present after switch replacement, GO to E11
No	DIAGNOSE the power windows before continuing this test. REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).

E4 CHECK THE FOLD CIRCUIT FOR VOLTAGE AT THE SUSPECT EXTERIOR MIRROR

NOTICE: The following step uses a test lamp to simulate normal circuit loads. Use only a Rotunda Test Lamp (SGT27000) or 250-300mA incandescent bulb test lamp. To avoid connector terminal damage, use the Rotunda Flex Probe kit for the test lamp probe connection to the vehicle. Do not use the test lamp probe directly on any connector.

- Ignition OFF.
- Disconnect: Suspect Exterior Mirror [C521](#) or [C622](#).
- Connect:

LH Mirror

Lead 1	Measurement / Action	Lead 2
C521-19		C516-18

RH Mirror

Lead 1	Measurement / Action	Lead 2
C622-19		C601-18

- Ignition ON.
- Press the exterior mirror fold switch.

Does the test light illuminate when the exterior mirror fold switch is pressed?

Yes	GO to E12
No	For a RH power folding mirror concern, GO to E10 For a LH power folding mirror concern, GO to E11

E5 CHECK THE DOOR MODULE DIAGNOSTIC TROUBLE CODES (DTCS) WITH THE SUSPECT EXTERIOR MIRROR DISCONNECTED

- Ignition OFF.
- Disconnect: Suspect Exterior Mirror [C521](#) (LH) or [C622](#) (RH).
- Ignition ON.
- Using a diagnostic scan tool, clear the DDM (LH power folding mirror concern) or PDM (RH power folding mirror concern) Diagnostic Trouble Codes (DTCs) and repeat the self-test.

Is DDM DTC B11F6:15 or PDM DTC B11F7:15 present?

Yes	GO to E12
No	GO to E6

E6 CHECK THE EXTERIOR MIRROR FOLD IN CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: DDM [C501B](#) (LH power folding mirror concern) or PDM [C652B](#) (RH power folding mirror concern).
- Measure:

DRIVER DOOR MODULE (DDM)	
--------------------------	--

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C501B-18	Ω	Ground

PASSENGER DOOR MODULE (PDM)	
-----------------------------	--

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C652B-18	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	For a LH concern, GO to E11 For a RH concern, GO to E10
No	REPAIR the circuit.

E7 CHECK THE DOOR MODULE DIAGNOSTIC TROUBLE CODES (DTCS) WITH THE FOLD CIRCUITS JUMPERED TOGETHER

- Ignition OFF.
- Disconnect: suspect exterior mirror [C521](#) or [C622](#).
- Connect:

EXTERIOR MIRROR LH

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-19		C521-18

EXTERIOR MIRROR RH

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-19		C622-18

- Ignition ON.
- Using a diagnostic scan tool, clear the DDM (LH concern) or PDM (RH concern) Diagnostic Trouble Codes (DTCs) and repeat the self-test.

Is DDM DTC B11F6:11 or PDM DTC B11F7:11 present?

Yes	REMOVE the fused jumper wire. GO to E8
No	REMOVE the fused jumper wire. GO to E12

E8 CHECK THE FOLD CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: DDM [C501B](#) (LH power folding mirror concern) or PDM [C652B](#) (RH power folding mirror concern).
- Ignition ON.
- Measure:

EXTERIOR MIRROR LH	
--------------------	--

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-19		Ground
C521-18		Ground

EXTERIOR MIRROR RH	
--------------------	--

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-19		Ground
C622-18		Ground

Is any voltage present?

Yes	REPAIR the affected circuit.
No	GO to E9

- Ignition OFF.
- Measure:

EXTERIOR MIRROR LH	DRIVER DOOR MODULE (DDM)
--------------------	--------------------------

LH Mirror

Positive Lead	Measurement / Action	Negative Lead
C521-19	Ω	C501B-9
C521-18	Ω	C501B-18

EXTERIOR MIRROR RH	PASSENGER DOOR MODULE (PDM)
--------------------	-----------------------------

RH Mirror

Positive Lead	Measurement / Action	Negative Lead
C622-19	Ω	C652B-9
C622-18	Ω	C652B-18

Are the resistances less than 3 ohms?

Yes	For a LH power folding mirror concern, GO to E11 For a RH power folding mirror concern, GO to E10
No	REPAIR the affected circuit.

E10 CHECK FOR CORRECT PDM (PASSENGER DOOR MODULE) OPERATION

- Disconnect and inspect all PDM connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PDM connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

E11 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Disconnect and inspect all DDM connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DDM connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

E12 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
 - Open or short circuits
 - Damaged or pushed out pins
 - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

PINPOINT TEST F :

Normal Operation and Fault Conditions

Both exterior mirrors are inoperative (with or without memory mirrors)

Possible Sources

- Wiring, terminals or connectors
- Power window concern
- Exterior mirror control switch (integral to the LH front door window control switch)
- DDM

F1 CHECK FOR CORRECT EXTERIOR MIRROR OPERATION

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Was an obvious cause found?

Yes	VERIFY that all power windows can be operated normally from the LH front door window control switch. If all power windows operate normally from the LH front door window control switch, INSTALL a new LH front door window control switch. REFER to: Front Door Window Control Switch - Vehicles With: Front Power Windows (501-11 Glass, Frames and Mechanisms, Removal and Installation). If all power window do not operate normally from the LH front door window control switch, DIAGNOSE the power windows before continuing diagnostics for the exterior mirrors. REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
No	The repair is complete.

PINPOINT TEST G :

Normal Operation and Fault Conditions

One or both exterior mirrors fold inward due to wind pressure.

Possible Sources

- Mirror structural bracket is damaged.
- Power folding mirrors are not synchronized (vehicles equipped with folding mirrors only)

G1 CHECK FOR CORRECT EXTERIOR MIRROR OPERATION

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Was an obvious cause found?

Yes	For vehicles equipped with power folding mirrors, SYNCHRONIZE the power folding mirrors. REFER to: Power Mirrors Synchronization (501-09 Rear View Mirrors, General Procedures). If the concern is still present after the power folding mirrors synchronization procedure was performed, INSPECT the mirror for structural damage. If necessary, INSTALL a new mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation). For vehicles not equipped with power folding mirrors, INSPECT the mirror for structural damage. If necessary, INSTALL a new mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	The repair is complete.

The RH And/Or LH Power Telescoping Mirror Is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

Possible Causes

- The power telescoping mirror motor lockout feature is active
- Binding or obstructed power telescoping mirror
- Power telescoping mirrors not synchronized
- Fuse
- Wiring, terminals or connectors
- Power telescoping mirror relay
- Power telescoping mirror control switch (integral to the LH front door window control switch)
- Power telescoping mirror

Visual Inspection and Diagnostic Pre-Checks

- Verify that the power telescoping mirrors are not binding or obstructed.
- Verify all of the power windows can be opened and closed normally using the LH front door window control switch.
- Inspect BJB fuse 82 (10A).
- Verify the lockout feature is disabled.

NOTE: Clean the entire mirror assembly and glass to assist in verification of the customer concern and/or impact damage. Do not clean any mirror glass or housing with an ice scraper, razor blade, abrasive pad, harsh chemicals or petroleum based cleaning products, as these may damage the mirror glass and/or housing.

PINPOINT TEST H : THE RH (RIGHT-HAND) AND/OR LH (LEFT-HAND) POWER TELESCOPING MIRROR IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

NOTE: If the exterior mirrors are extended and retracted several times consecutively, the power lockout feature will disable the system for approximately 3-10 minutes to prevent damage to the power telescoping mirror motors. After 3-10 minutes have elapsed, normal operation resumes.

NOTE: The trailer tow power telescoping mirrors must be synchronized anytime the RH, LH or both power telescoping mirrors are folded or unfolded without using the power telescoping mirror control switch, or if a new power telescoping mirror has been installed. Refer to Power Folding Mirrors Synchronization in this section.

H1 VERIFY THE OPERATION OF THE POWER TELESCOPING MIRRORS

- Ignition ON.
- Activate the power telescoping mirrors inward and outward.

Does the concern affect both power telescoping mirrors?

Yes	VERIFY the BJB fuse 82 (10A) is OK. If the fuse is OK, GO to H2 If the fuse is not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.
No	GO to H8

H2 CHECK FOR VOLTAGE TO THE TELESCOPING EXTERIOR MIRROR SWITCH

- Ignition OFF.
- Disconnect: Telescoping Exterior Mirror Switch [C577](#)
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C577-4		Ground

Is the voltage greater than 11 volts?

Yes	GO to H3
No	VERIFY the BCM fuse 23 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

H3 CHECK THE TELESCOPING EXTERIOR MIRROR SWITCH RELAY CONTROL CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect BJB [C1035B](#).
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C577-3		Ground
C577-7		Ground

Is any voltage present?

Yes	REPAIR the affected circuit.
No	GO to H4

H4 CHECK THE TELESCOPING EXTERIOR MIRROR SWITCH RELAY CONTROL CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C577-3	Ω	Ground
C577-7	Ω	Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to H5
No	REPAIR the affected circuit.

H5 CHECK THE TELESCOPING EXTERIOR MIRROR SWITCH RELAY CONTROL CIRCUITS FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C577-3	Ω	C1035B-13
C577-7	Ω	C1035B-20

Are the resistances less than 3 ohms?

Yes	GO to H6
No	REPAIR the affected circuit.

H6 CHECK THE TELESCOPING EXTERIOR MIRROR SWITCH CONTROL CIRCUITS FOR A SHORT TOGETHER

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C577-3	Ω	C577-7

Is the resistance greater than 10,000 ohms?

Yes	GO to H7
No	REPAIR the circuits.

H7 CHECK THE TELESCOPING EXTERIOR MIRROR EXTEND AND RETRACT COMMON CIRCUITS FOR AN OPEN

- Disconnect LH Exterior Mirror [C521](#) .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C521-16	Ω	C1035B-10
C521-17	Ω	C1035B-4

Are the resistances less than 3 ohms?

Yes	⚠️ INSTALL a new telescoping exterior mirror switch. ⚠️ If the concern is still present after replacing the telescoping exterior mirror switch, INSTALL a new BJB.
No	REPAIR the affected circuit.

H8 CHECK THE TELESCOPING EXTERIOR MIRROR EXTEND AND RETRACT CIRCUITS FOR AN OPEN BETWEEN THE BJB (BATTERY JUNCTION BOX) AND THE SUSPECT MIRROR

- Ignition OFF.
- Disconnect BJB [C1035B](#) .
- Disconnect suspect exterior mirror [C521](#) (LH) or [C622](#) (RH).
- Measure:

LH Concern

Positive Lead	Measurement / Action	Negative Lead
C521-16	Ω	C1035B-10
C521-17	Ω	C1035B-4

RH Concern

Positive Lead	Measurement / Action	Negative Lead
C622-16	Ω	C1035B-10
C622-17	Ω	C1035B-4

Is the resistance less than 3 ohms?

Yes	GO to H9
No	REPAIR the affected circuit.

H9 CHECK THE EXTERIOR MIRROR JUMPER HARNESS

- Inspect the exterior mirror jumper harness between the vehicle harness and the mirror motors for:
 - Open or short circuits
 - Damaged or pushed out pins
 - Corrosion

Is the harness OK?

Yes	INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	REPAIR the harness as necessary. If the harness cannot be repaired, INSTALL a new exterior mirror. REFER to: Exterior Mirror (501-09 Rear View Mirrors, Removal and Installation).

Refer to Wiring Diagrams Cell [124](#) for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: Rear View Mirrors - System Operation and Component Description (501-09 Rear View Mirrors, Description and Operation).

Possible Causes

- Fuse
- Wiring, terminals or connectors
- TR data concern
- Reverse lamp concern
- Interior auto-dimming mirror
- IPMA (integral to the interior auto-dimming mirror) (if equipped)

Visual Inspection and Diagnostic Pre-Checks

- Inspect BCM fuse 36 (15A).

PINPOINT TEST I : THE INTERIOR AUTO-DIMMING MIRROR DOES NOT OPERATE CORRECTLY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector. Use only Rotunda Flex Probes (NUD105-R025D)

I1 VERIFY THE OPERATION OF THE REVERSE LAMPS

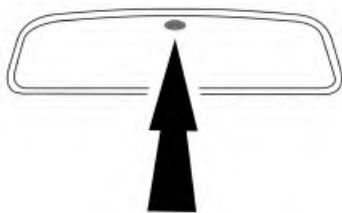
- Ignition ON.
 - **NOTE:** If the TR sensor is malfunctioning and the reverse lamps are inoperative or always on, the interior auto-dimming mirror will not function properly.
- Move the selector lever through the entire range while monitoring the reverse lamps.
- Select PARK.

Do the reverse lamps illuminate **ONLY** in REVERSE?

Yes	GO to I2
No	DIAGNOSE the reversing lamps. REFER to: Reversing Lamps (417-01 Exterior Lighting, Diagnosis and Testing).

I2 INSPECT THE MIRROR FOR PROPER INSTALLATION

- Inspect the interior auto-dimming mirror to make sure the rearward facing sensor is at the top of the mirror glass.



E149165

Is the rearward facing sensor at the top of the interior auto-dimming mirror glass?

Yes	GO to I3
No	INSTALL the interior auto-dimming mirror with the rearward facing sensor at the top of the mirror glass. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).

I3 VERIFY THE FORWARD AND REARWARD FACING SENSORS ARE NOT BLOCKED

- Visually verify the forward and rearward facing sensors are not blocked or obstructed. Sources of obstruction can include:
 - Stickers, window decals or tags.
 - Toll road or parking passes.
 - Fold-down screens for TVs or DVD players.
 - Non-OEM window tinting.
 - Dirt and debris.
 - Camper shells.
 - Decorative objects hung from mirror.

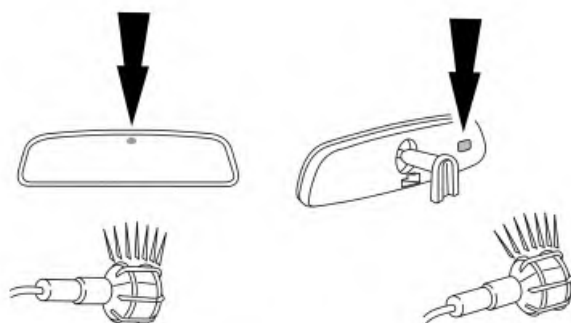
Are either of the sensors blocked?

Yes	If possible, REMOVE the obstruction. If it is not possible to remove the obstruction, ADVISE the customer the blockage will affect the operation of the auto-dimming mirror.
No	GO to I4

I4 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - DAYLIGHT CONDITIONS

- **NOTE:** Base electrochromatic mirror shown. IPMA mirror is similar.

Use a bright lamp to illuminate the forward facing sensor and the rearward facing sensor. The mirror should adjust to a high reflectance state (mirror will be clear).



- E149159

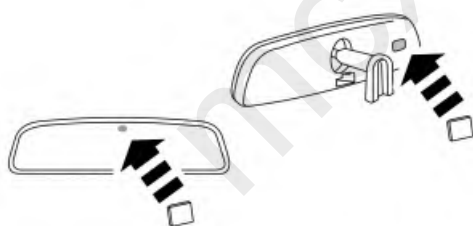
Did the mirror adjust to a high reflectance (clear) state?

Yes	GO to I5
No	INSTALL a new interior auto-dimming mirror. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).

I5 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - NIGHTTIME CONDITIONS

- **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Cover the forward and rearward facing sensors with black electrical tape or other dark material. The mirror should adjust to a high reflectance state (mirror will be clear).



- E149155

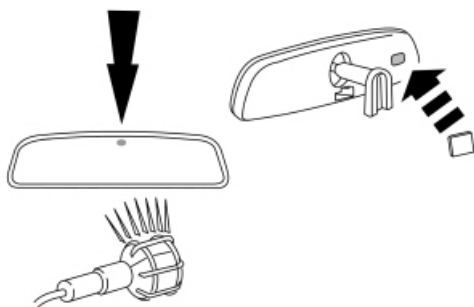
Did the mirror adjust to a high reflectance (clear) state?

Yes	GO to I6
No	INSTALL a new interior auto-dimming mirror. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).

I6 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - NIGHTTIME CONDITIONS WITH GLARE

- **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Remove the black electrical tape or other dark material from the rearward facing sensor.



- E149156
- Use a bright light to illuminate the rearward facing sensor. The mirror should adjust to a lower reflectance state (mirror will be dark).

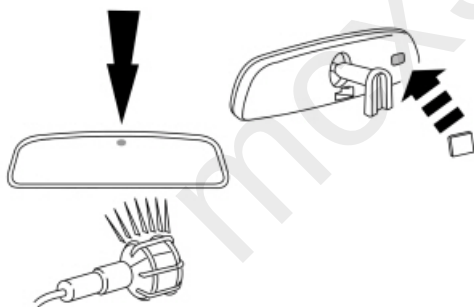
Did the mirror adjust to a low reflectance (dark) state?

Yes	GO to 17
No	GO to 18

I7 VERIFY THE OPERATION OF THE INTERIOR AUTO-DIMMING MIRROR - VEHICLE IN REVERSE AND NIGHTTIME CONDITIONS WITH GLARE

- **NOTE:** Covering the sensor(s) with a finger or hand is not adequate for this step.

Continue to illuminate the rearward facing sensor with the forward facing sensor covered.



- E149156
- Select REVERSE.

Did the mirror adjust to a high reflectance (clear) state after reverse was selected?

Yes	Select PARK. The system is operating correctly at this time. REVIEW the operation of the interior auto-dimming mirror feature with the customer.
No	If the vehicle is equipped with an IPMA, GO to I11 If the vehicle is not equipped with an IPMA, GO to I10

I8 CHECK FOR VOLTAGE TO THE INTERIOR AUTO-DIMMING MIRROR

- Ignition OFF.
- Disconnect: Interior Auto-Dimming Mirror [C9039](#) (without IPMA) or Interior Auto-Dimming Mirror [C9012](#) (with IPMA).

- Ignition ON.
- Measure:

AUTO-DIMMING INTERIOR MIRROR	
------------------------------	--

Without IPMA

Positive Lead	Measurement / Action	Negative Lead
C9039-1		Ground

AUTO-DIMMING INTERIOR MIRROR	
------------------------------	---

With IPMA

Positive Lead	Measurement / Action	Negative Lead
C9012-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to I9
No	VERIFY that BCM fuse 36 (15A) is OK. If the fuse is OK, REPAIR the circuit. If the fuse is not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

- Ignition OFF.
- Measure:

AUTO-DIMMING INTERIOR MIRROR	
------------------------------	--

Without IPMA

Positive Lead	Measurement / Action	Negative Lead
C9039-4	Ω	Ground

AUTO-DIMMING INTERIOR MIRROR	
------------------------------	---

With IPMA

Positive Lead	Measurement / Action	Negative Lead
C9012-7	Ω	Ground

Is the resistance less than 3 ohms?

Yes	Vehicles with an IPMA, GO to I12 Vehicles without an IPMA, GO to I10
No	REPAIR the circuit.

I10 CHECK THE REVERSE INHIBIT CIRCUIT FOR VOLTAGE AT THE INTERIOR AUTO-DIMMING MIRROR WITH THE VEHICLE IN REVERSE

- Ignition ON.
- Select REVERSE.
- Measure:

AUTO-DIMMING INTERIOR MIRROR	
------------------------------	--

With Parking Aid Camera Display

Positive Lead	Measurement / Action	Negative Lead
C9039-9		Ground

AUTO-DIMMING INTERIOR MIRROR	
------------------------------	--

Without Parking Aid Camera Display

Positive Lead	Measurement / Action	Negative Lead
C9039-3		Ground

Is the voltage greater than 11 volts?

Yes	INSTALL a new interior auto-dimming mirror. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	REPAIR the circuit.

I11 PERFORM A NETWORK TEST

- Select PARK.
- Using a diagnostic scan tool, perform a network test.

Do the PCM, GWM and IPMA pass the network test?

Yes	GO to I12
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

I12 CHECK FOR IPMA (IMAGE PROCESSING MODULE A) DIAGNOSTIC TROUBLE CODES (DTCs)

- Ignition ON.
- Select REVERSE.
- Wait 15 seconds.
- Select PARK.
- Using a diagnostic scan tool, check the IPMA Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Lane Keeping System (419-07 Lane Keeping System, Diagnosis and Testing).
No	GO to I13

I13 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Disconnect and inspect all IPMA connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins).
 - damaged or bent pins - install new terminals/pins.
 - pushed-out pins - install new pins as necessary.
- Reconnect the IPMA connectors and related in-line connectors. Make sure they seat and latch correctly.
- Operate the system to determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPMA (integral to the interior auto-dimming mirror). REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

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