

Locks, Latches and Entry Systems

DTC Charts

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).

BCM DTC Chart

DTC	Description	Action
B10AB:00	Remote Keyless Entry Synchronization: No Sub Type Information	GO to Pinpoint Test R
B10C6:01	Exterior Trunk Antenna: General Electrical Failure	GO to Pinpoint Test W
B11C6:01	Passenger Door External Antenna: General Electrical Failure	GO to Pinpoint Test V
B11CA:01	Driver Door External Antenna: General Electrical Failure	GO to Pinpoint Test V
B1218:00	Transmitter Identification Code: No Sub Type Information	GO to Pinpoint Test R
B121A:11	Keypad Illumination Output: Circuit Short To Ground	• If the keyless keypad illumination is inoperative, GO to Pinpoint Test P • If the keyless keypad illumination is always on, GO to Pinpoint Test Q
B121A:15	Keypad Illumination Output: Circuit Short To Battery or Open	GO to Pinpoint Test P
B121B:01	Keypad Input Switch: General Electrical Failure	GO to Pinpoint Test O
B1336:01	Left Front Door External Antenna: General Electrical Failure	GO to Pinpoint Test V
B1337:01	Right Front Door External Antenna: General Electrical Failure	GO to Pinpoint Test V

B1381:11	Left Front Door Handle Proximity Sensor: Circuit Short To Ground	GO to Pinpoint Test V
B1381:15	Left Front Door Handle Proximity Sensor: Circuit Short To Battery or Open	GO to Pinpoint Test V
B1381:29	Left Front Door Handle Proximity Sensor: Signal Invalid	GO to Pinpoint Test V
B1382:11	Right Front Door Handle Proximity Sensor: Circuit Short To Ground	GO to Pinpoint Test V
B1382:15	Right Front Door Handle Proximity Sensor: Circuit Short To Battery or Open	GO to Pinpoint Test V
B1382:29	Right Front Door Handle Proximity Sensor: Signal Invalid	GO to Pinpoint Test V
C1017:11	Boot/Trunk Primary Switch: Circuit Short To Ground	GO to Pinpoint Test N
U0258:87	Lost Communication With Radio Transceiver: Missing Message	GO to Pinpoint Test Y
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

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).

RTM DTC Chart

DTC	Description	Action
U0146:00	Lost Communication With Gateway "A": No Sub Type Information	GO to Pinpoint Test X
U1A00:00	Private Communication Network: No Sub Type Information	GO to Pinpoint Test Y
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Tire Pressure Monitoring System (TPMS) (204-04B Tire Pressure Monitoring System (TPMS), Diagnosis and Testing).

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).

DDM DTC Chart

DTC	Description	Action
B1088:83	LIN Bus "B": Value of Signal Protection Calculation Incorrect	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B1088:87	LIN Bus "B": Missing Message	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B108F:23	Cabin Lock/Unlock Switch: Signal Stuck Low	GO to Pinpoint Test K
B1165:11	Left Front Puddle Lamp Output: Circuit Short To Ground	REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).
B1165:15	Left Front Puddle Lamp Output: Circuit Short To Battery or Open	REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).
B117E:07	Front Power Window Up: Mechanical Failure	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B117E:16	Front Power Window Up: Circuit Voltage Below Threshold	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B117E:4B	Front Power Window Up: Over Temperature	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B117E:92	Front Power Window Up: Performance or Incorrect Operation	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B1189:29	Front Window Position Sensor: Signal Invalid	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B118C:11	Left Blind Spot Warning Indicator: Circuit Short To Ground	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
B118C:15	Left Blind Spot Warning Indicator: Circuit Short To Battery or Open	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
B11F6:11	Driver Folding Mirror Motor: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).

B11F6:15	Driver Folding Mirror Motor: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B12C5:71	Front Window Lifter Motor Up Relay: Actuator Stuck	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B12C8:71	Front Window Lifter Motor Down Relay: Actuator Stuck	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B13F1:4B	Driver Power Window Motor: Over Temperature	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B1C03:23	Memory #1 Switch: Signal Stuck Low	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1C04:23	Memory #2 Switch: Signal Stuck Low	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1C05:23	Memory #3 Switch: Signal Stuck Low	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1C09:11	Driver Left/Right Mirror Motor: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C09:15	Driver Left/Right Mirror Motor: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C10:11	Driver Up/Down Mirror Motor: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C10:15	Driver Up/Down Mirror Motor: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C13:11	Driver Up/Down Mirror Motor Feedback: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C13:15	Driver Up/Down Mirror Motor Feedback: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C14:11	Driver Left/Right Mirror Motor Feedback: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).

B1C14:15	Driver Left/Right Mirror Motor Feedback: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1D06:11	Left Turn Indicator: Circuit Short To Ground	REFER to: Turn Signal and Hazard Lamps (417-01 Exterior Lighting, Diagnosis and Testing).
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
C1B14:15	Sensor Supply Voltage A: Circuit Short To Battery or Open	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
U0010:00	Medium Speed CAN Communication Bus: No Sub Type Information	The module was unable to communicate on the network at a point in time. The fault is not currently present (the module had to communicate with the scan tool to report this DTC). VERIFY the continuity of the connectors and wiring. Refer to Wiring Diagrams Cell 14 Module Communications Network for schematic and connector information.
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	GO to Pinpoint Test Z
U0208:00	Lost Communication With "Seat Control Module A": No Sub Type Information	GO to Pinpoint Test AA
U0232:00	Lost Communication With Side Obstacle Detection Control Module - Left: No Sub Type Information	GO to Pinpoint Test AB
U0300:00	Internal Control Module Software Incompatibility: No Sub Type Information	CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC is retrieved again, INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U0300:4A	Internal Control Module Software Incompatibility: Incorrect Component Installed	PERFORM the PMI using as-built data. CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC returns, INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U0422:00	Invalid Data Received From Body Control Module: No Sub Type Information	RETRIEVE and REPAIR all non-network Diagnostic Trouble Codes (DTCs) from the BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

U0509:00	Invalid Data Received From "Seat Control Module A": No Sub Type Information	RETRIEVE and REPAIR all non-network Diagnostic Trouble Codes (DTCs) from the DSM. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
U2010:00	Switch Illumination: No Sub Type Information	REFER to: Instrument Panel and Interior Switches Illumination (413-00 Instrument Panel and Interior Switches Illumination, Diagnosis and Testing).
U2013:24	Switch Pack: Signal Stuck High	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
U2014:00	Control Module Hardware: No Sub Type Information	INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U2100:00	Initial Configuration Not Complete: No Sub Type Information	PERFORM the PMI using as-built data. CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC returns, INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U3000:04	Control Module: System Internal Failure	INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).

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).

PDM DTC Chart

DTC	Description	Action
B108F:23	Cabin Lock/Unlock Switch: Signal Stuck Low	GO to Pinpoint Test K
B1166:11	Right Front Puddle Lamp Output: Circuit Short To Ground	REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).
B1166:15	Right Front Puddle Lamp Output: Circuit Short To Battery or Open	REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).
B117E:07	Front Power Window Up: Mechanical Failure	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).

B117E:16	Front Power Window Up: Circuit Voltage Below Threshold	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B117E:4B	Front Power Window Up: Over Temperature	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B117E:92	Front Power Window Up: Performance or Incorrect Operation	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B1189:29	Front Window Position Sensor: Signal Invalid	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B118D:11	Right Blind Spot Warning Indicator: Circuit Short To Ground	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
B118D:15	Right Blind Spot Warning Indicator: Circuit Short To Battery or Open	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
B11F7:11	Passenger Folding Mirror Motor: Circuit Short To Ground	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
B11F7:15	Passenger Folding Mirror Motor: Circuit Short To Battery or Open	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
B12C5:71	Front Window Lifter Motor Up Relay: Actuator Stuck	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B12C8:71	Front Window Lifter Motor Down Relay: Actuator Stuck	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B13F2:4B	Passenger Power Window Motor: Over Temperature	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
B1C11:11	Passenger Left/Right Mirror Motor: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C11:15	Passenger Left/Right Mirror Motor: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).

B1C12:11	Passenger Up/Down Mirror Motor: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C12:15	Passenger Up/Down Mirror Motor: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C15:11	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C15:15	Passenger Up/Down Mirror Motor Feedback: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C16:11	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1C16:15	Passenger Left/Right Mirror Motor Feedback: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
B1D07:11	Right Turn Indicator: Circuit Short To Ground	REFER to: Turn Signal and Hazard Lamps (417-01 Exterior Lighting, Diagnosis and Testing).
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
C1B14:15	Sensor Supply Voltage A: Circuit Short To Battery or Open	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
C1B15:11	Sensor Supply Voltage B: Circuit Short To Ground	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
C1B15:15	Sensor Supply Voltage B: Circuit Short To Battery or Open	REFER to: Rear View Mirrors (501-09 Rear View Mirrors, Diagnosis and Testing).
U0010:00	Medium Speed CAN Communication Bus: No Sub Type Information	The module was unable to communicate on the network at a point in time. The fault is not currently present (the module had to communicate with the scan tool to report this DTC). VERIFY the continuity of the connectors and wiring. Refer to Wiring Diagrams Cell 14 Module Communications Network for schematic and connector information.
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	GO to Pinpoint Test Z

U0208:00	Lost Communication With "Seat Control Module A": No Sub Type Information	GO to Pinpoint Test AA
U0233:00	Lost Communication With Side Obstacle Detection Control Module - Right: No Sub Type Information	GO to Pinpoint Test AC
U0300:00	Internal Control Module Software Incompatibility: No Sub Type Information	CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC is retrieved again, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U0300:4A	Internal Control Module Software Incompatibility: Incorrect Component Installed	PERFORM the PMI using as-built data. CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC returns, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U0422:00	Invalid Data Received From Body Control Module: No Sub Type Information	RETRIEVE and REPAIR all non-network Diagnostic Trouble Codes (DTCs) from the BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).
U0509:00	Invalid Data Received From "Seat Control Module A": No Sub Type Information	RETRIEVE and REPAIR all non-network Diagnostic Trouble Codes (DTCs) from the DSM. REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
U2002:24	Switch: Signal Stuck High	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).
U2010:00	Switch Illumination: No Sub Type Information	REFER to: Instrument Panel and Interior Switches Illumination (413-00 Instrument Panel and Interior Switches Illumination, Diagnosis and Testing).
U2014:00	Control Module Hardware: No Sub Type Information	CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC returns, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U2100:00	Initial Configuration Not Complete: No Sub Type Information	PERFORM the PMI using as-built data. CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC returns, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
U3000:04	Control Module: System Internal Failure	CLEAR the Diagnostic Trouble Codes (DTCs) and REPEAT the self-test. If the DTC returns, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).

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).

PCM DTC Chart

DTC	Description	Action
P1594	Forced Engine Shutdown - Remote Start System Fault, No Unattended Vehicle Timeout	GO to Pinpoint Test AD
P1595	Forced Engine Shutdown - Remote Start System Fault, Transmission Range Not In Park Position	GO to Pinpoint Test AD
All other Diagnostic Trouble Codes (DTCs)	-	Refer to the appropriate section in Group 303 for the procedure.

Symptom Charts

Symptom Chart: Handles, Locks, Latches and Entry Systems - Mechanical

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).

Condition	Possible Sources	Actions
Hard to open or close a door from either door handle	Refer to the Pinpoint Test	GO to Pinpoint Test A
A door is difficult or does not open from the exterior door handle	Refer to the Pinpoint Test	GO to Pinpoint Test B
A door is difficult or does not open from the interior door handle	Refer to the Pinpoint Test	GO to Pinpoint Test C
The exterior door release handle sticks	Refer to the Pinpoint Test	GO to Pinpoint Test D
The interior door release handle sticks	Refer to the Pinpoint Test	GO to Pinpoint Test E

The manual interior lock rod inoperative does not lock/unlock the door latch	• Bent or binding lock rod • Door latch	• OPERATE the door lock rod manually while observing the door lock rod for any binding or if the rod is bent. ◦ If the rod is bent or damaged, REPAIR as necessary. ◦ If the rod is OK, INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
Squeak-rattle-chucking noise from door	• Refer to the Pinpoint Test	• GO to Pinpoint Test F
The manual door lock cylinder is inoperative	• Refer to the Pinpoint Test	• GO to Pinpoint Test G
The ignition lock cylinder cannot be returned to OFF	• Refer to the Pinpoint Test	• REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).
The ignition lock cylinder is difficult to turn	• Refer to the Pinpoint Test	• GO to Pinpoint Test H
The key is hard to insert into the ignition lock cylinder	• Refer to the Pinpoint Test	• GO to Pinpoint Test H

Symptom Chart: Handles, Locks, Latches and Entry Systems - Electrical

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).

Condition	Possible Sources	Actions
All door locks are inoperative	• Refer to the Pinpoint Test	• GO to Pinpoint Test I
A single or more than one door lock is inoperative	• Refer to the Pinpoint Test	• GO to Pinpoint Test J
The door locks operate only one way	• Refer to the Pinpoint Test	• GO to Pinpoint Test K
All door locks are inoperative from one door lock control switch	• Refer to the Pinpoint Test	• GO to Pinpoint Test L

The tailgate lock is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test M
The tailgate latch release is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test N
The doors do not lock or unlock using the keyless entry keypad	Refer to the Pinpoint Test	GO to Pinpoint Test O
The keyless entry keypad illumination is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test P
The keyless entry keypad illumination is always on	Refer to the Pinpoint Test	GO to Pinpoint Test Q
The RKE transmitter is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test R
An individual button/feature is inoperative from the RKE transmitter	Refer to the Pinpoint Test	GO to Pinpoint Test S
The RKE transmitter has poor range performance	Refer to the Pinpoint Test	GO to Pinpoint Test T
The remote start feature is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test U
The remote start feature operates, but the remote start feedback LED is inoperative	Passive key	DISCARD the suspect passive key. PROGRAM a new passive key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
The memory seat does not operate using the RKE transmitter	RKE transmitter not programmed to the memory seat	Program the RKE transmitter to the desired memory button. REFER to the Memory Function in the Owner's Literature.

The smart unlock is inoperative	Refer to the Pinpoint Test	- For vehicles not equipped with push button start, DIAGNOSE the key-in-ignition warning chime. REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). - For vehicles equipped with push button start, DIAGNOSE the passive key not starting the vehicle from various areas within the interior of the vehicle. REFER to: Passive Anti-Theft System (PATS) (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Diagnosis and Testing).
The 2-stage door unlocking does not operate correctly	The 2-stage door unlocking is disabled	ENABLE the 2-stage door unlocking. REFER to: Staged Unlock Programming (501-14 Handles, Locks, Latches and Entry Systems, General Procedures).
A door passive entry feature is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test V
The tailgate passive entry feature is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test W

Pinpoint Tests

Hard To Open Or Close a Door From Either Door Handle

Normal Operations and Fault Conditions

The door latch can be actuated from the interior or exterior door handle. When actuated, the door latch releases and allows the door to open. If the door latch or the door hinges have insufficient lubrication or if the striker or door are misaligned, it causes extra force to be used when opening or closing the door.

Possible Causes

- Door alignment
- Door hinges
- Striker adjustment
- Door latch

PINPOINT TEST A : HARD TO OPEN OR CLOSE A DOOR FROM EITHER DOOR HANDLE

A1 CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES

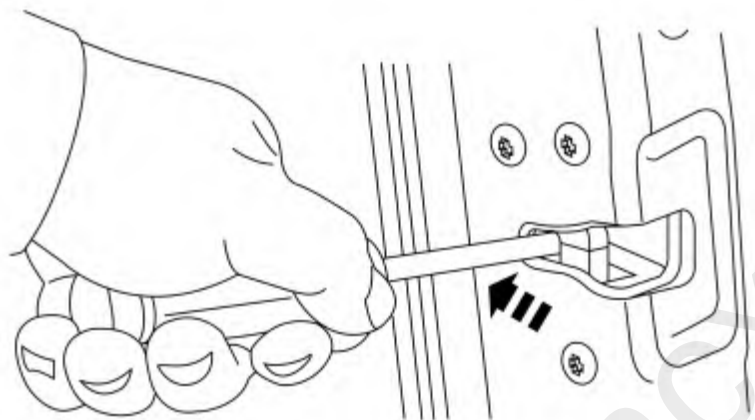
- Open the door using both the interior and the exterior door handles.

Does the door open normally from one of the door handles?

Yes	If the door is difficult/does not open from the exterior door handle, GO to Pinpoint Test B If the door is difficult/does not open from the interior door handle, GO to Pinpoint Test C
No	GO to A2

A2 CHECK THE LATCH OPERATION

- Open the door.
- Using a screwdriver, fully close the latch (2 clicks).



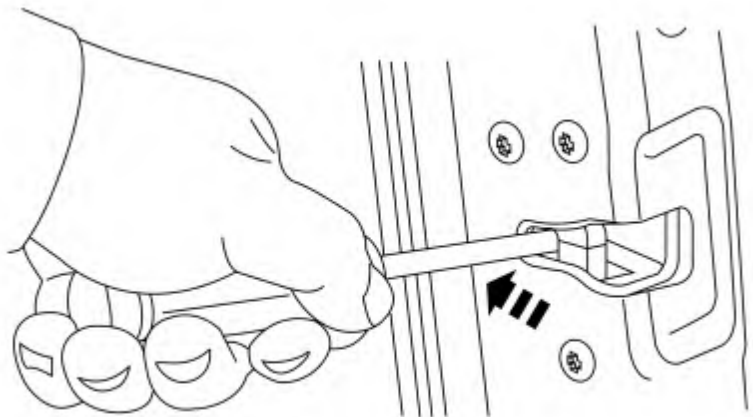
- E191453
- Verify the latch releases easily while pulling on the interior/exterior door handle.

Does the latch release easily?

Yes	GO to A4
No	GO to A3

A3 CHECK THE LATCH OPERATION AFTER LUBRICATION

- Lubricate the door latch.
REFER to: [Door Latch Lubrication](#) (501-14 Handles, Locks, Latches and Entry Systems, General Procedures).
- Using a screwdriver, fully close the latch (2 clicks).



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- Verify the latch releases easily while pulling on the interior/exterior door handle.

Does the latch release easily?

Yes	The concern was caused by an insufficiently lubricated door latch.
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

A4 CHECK THE STRIKER ADJUSTMENT

- Check the adjustment of the striker.

Is the striker adjusted correctly?

Yes	GO to A5
No	ADJUST the striker as necessary.

A5 CHECK THE DOOR ALIGNMENT

- Check the alignment of the door.

Is the door aligned correctly?

Yes	LUBRICATE the door hinges.
No	ADJUST the door as necessary. REFER to: Front Door Alignment - Regular Cab/SuperCrew (501-03 Body Closures, General Procedures). REFER to: Front Door Alignment - SuperCab (501-03 Body Closures, General Procedures). REFER to: Rear Door Alignment - SuperCrew (501-03 Body Closures, General Procedures).

A Door Is Difficult Or Does Not Open From The Exterior Door Handle

Normal Operations and Fault Conditions

The exterior door handle is connected to the door latch with an actuating cable. When the exterior door handle is pulled, the actuating cable pulls on the latch lever. When the latch lever moves, the door latch releases, allowing the door to open.

Possible Causes

- Broken or binding cable/linkage
- Door handle reinforcement
- Door latch

PINPOINT TEST B : A DOOR IS DIFFICULT OR DOES NOT OPEN FROM THE EXTERIOR DOOR HANDLE

B1 CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES

- Open and close the door using both the interior and exterior door handles.

Does the door open normally from one of the door handles?

Yes	If the door is difficult/does not open from only the exterior door handle, GO to B2 If the door is difficult/does not open from only the interior door handle, GO to Pinpoint Test C
No	GO to B2

B2 CHECK THE EXTERIOR DOOR HANDLE CABLE OPERATION

- Disconnect the exterior door handle actuating cable from the door latch.
- Operate the exterior door handle while observing the linkage and cable.

Are any of the exterior door handle components or linkages binding or broken?

Yes	REPAIR as necessary.
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

A Door Is Difficult Or Does Not Open From The Interior Door Handle

Normal Operations and Fault Conditions

The interior door handle is connected to the door latch by an actuating cable. When the interior door handle is pulled, the cable pulls on the latch lever. When the latch lever moves, the door latch releases, allowing the door to open.

Possible Causes

- Broken or binding cable/linkage
- Door latch

Visual Inspection and Diagnostic Pre-checks

- For the rear SuperCrew doors, make sure the child safety lock is in the unlock position

PINPOINT TEST C : A DOOR IS DIFFICULT OR DOES NOT OPEN FROM THE INTERIOR DOOR HANDLE

C1 CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES

NOTE: For the rear SuperCrew doors, make sure the child safety lock is in the unlock position.

- Open the door using both the interior and exterior door handles.

Does the door open normally from one of the door handles?

Yes	If the door is difficult/does not open from only the interior door handle, GO to C2 If the door is difficult/does not open from only the exterior door handle, GO to Pinpoint Test B
No	GO to Pinpoint Test A

C2 CHECK THE INTERIOR DOOR HANDLE AND CABLE/LINKAGE OPERATION

- Remove the door trim panel.
REFER to: [Front Door Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
REFER to: [Rear Door Trim Panel - SuperCrew](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
- Install the interior door handle back onto the release cable.
- Operate the interior door handle while observing the cable/linkage.

Are any of the interior door handle components or cable/linkages binding or broken?

Yes	REPAIR as necessary.
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

The Exterior Door Release Handle Sticks

Normal Operations and Fault Conditions

The exterior door handle is connected to the door latch with an actuating cable. When the exterior door handle is pulled, the actuating cable pulls on the latch lever. When the latch lever moves, the door latch releases, allowing the door to open. The handle has a return spring to make sure the handle returns to a closed position.

Possible Causes

- Broken or binding cable/linkage
- Broken handle return spring

- Door latch

PINPOINT TEST D : THE EXTERIOR DOOR RELEASE HANDLE STICKS

D1 CHECK FOR A BROKEN RETURN SPRING

- Remove the door trim panel.
REFER to: [Front Door Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
REFER to: [Rear Door Trim Panel - SuperCrew](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
- Disconnect the exterior door handle actuating cable from the door latch.
- Pull and release the exterior door handle.

Does the exterior door handle return to a closed position once released?

Yes	GO to D2
No	INSTALL a new exterior door handle. REFER to: Exterior Front Door Handle (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Exterior Rear Door Handle - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

D2 CHECK THE EXTERIOR DOOR HANDLE AND CABLE/LINKAGE OPERATION

- Operate the exterior door handle while observing the cable/linkage.

Are any of the exterior door handle components or cable/linkages binding?

Yes	REPAIR as necessary.
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

The Interior Door Release Handle Sticks

Normal Operations and Fault Conditions

The interior door handle is connected to the door latch by an actuating cable. When the interior door handle is pulled, the cable pulls on the latch lever. When the latch lever is moved, the door latch releases, allowing the door to open. The handle has a return spring to make sure the handle returns to a closed position.

Possible Causes

- Binding cable
- Broken handle return spring
- Door latch

PINPOINT TEST E : THE INTERIOR DOOR RELEASE HANDLE STICKS

E1 CHECK FOR A BROKEN RETURN SPRING

- Remove the interior door handle.
REFER to: [Interior Front Door Handle](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
REFER to: [Interior Rear Door Handle - SuperCrew](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
- Pull and release the interior door handle.

Does the interior door handle return to a closed position once released?

Yes	GO to E2
No	INSTALL a new interior door handle. REFER to: Interior Front Door Handle (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Interior Rear Door Handle - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

E2 CHECK THE INTERIOR DOOR HANDLE CABLE OPERATION

- Remove the interior door latch release cable.
- Observe the door latch release cable for any damage or binding.

Is the door latch release cable OK?

Yes	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	REPAIR as necessary.

Squeak-Rattle-Chucking Noise From Door

Possible Causes

- Door alignment
- Striker adjustment
- Door latch

PINPOINT TEST F : SQUEAK-RATTLE-CHUCKING NOISE FROM DOOR

F1 CHECK FOR ANY LOOSE COMPONENTS

- Remove the door trim panel.
REFER to: [Front Door Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
REFER to: [Rear Door Trim Panel - SuperCrew](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
- Inspect inside the door for any loose components.

Are there any loose components inside the door?

Yes	REPAIR as necessary.
No	GO to F2

F2 CHECK THE STRIKER ADJUSTMENT

- Check the adjustment of the striker.

Is the striker adjusted correctly?

Yes	GO to F3
No	ADJUST the striker as necessary.

F3 CHECK THE DOOR ALIGNMENT

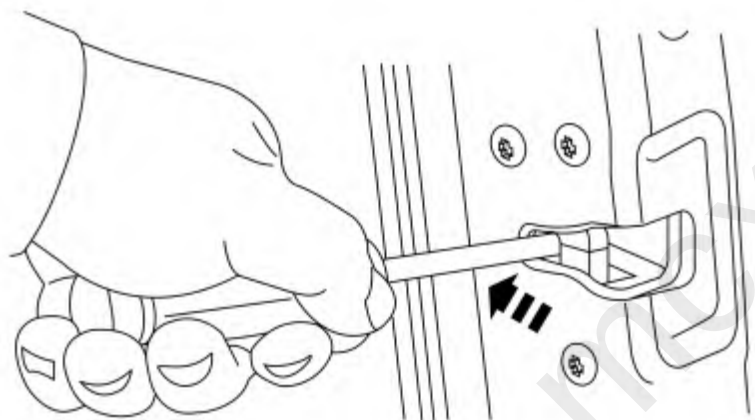
- Check the alignment of the door.

Is the door aligned correctly?

Yes	GO to F4
No	ADJUST the door as necessary. REFER to: Front Door Alignment - Regular Cab/SuperCrew (501-03 Body Closures, General Procedures). REFER to: Front Door Alignment - SuperCab (501-03 Body Closures, General Procedures). REFER to: Rear Door Alignment - SuperCrew (501-03 Body Closures, General Procedures).

F4 CHECK THE LATCH OPERATION AFTER LUBRICATION

- Lubricate the door latch.
REFER to: [Door Latch Lubrication](#) (501-14 Handles, Locks, Latches and Entry Systems, General Procedures).
- Using a screwdriver, fully close the latch (2 clicks).



E191453

- Operate the door latch and listen for the noise.

Is the original noise still present after the latch is lubricated?

Yes	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
-----	--

No	The concern was caused by an insufficiently lubricated door latch.
----	--

The Manual Door Lock Cylinder Is Inoperative

Normal Operations and Fault Conditions

The door lock cylinder is connected to the door latch via a lock rod and can be used to manually lock/unlock the door.

Possible Causes

- Bent or binding lock rod and lever
- Door lock cylinder
- Door latch

PINPOINT TEST G : THE MANUAL DOOR LOCK CYLINDER IS INOPERATIVE

G1 CHECK THE LOCK AND UNLOCK OPERATION

- Insert a key into the lock cylinder and rotate the lock cylinder to the lock and unlock positions.

Does the door lock cylinder freely rotate without locking and unlocking the door?

Yes	GO to G2
No	GO to G4

G2 CHECK THE DOOR LOCK CYLINDER (FREE-SPIN)

- Remove the door lock cylinder.
REFER to: [Door Lock Cylinder](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
- Operate the door lock cylinder with the key while holding the lever on the lock cylinder.

Does the key in the door lock cylinder rotate freely while the lever is stationary?

Yes	INSTALL a new door lock cylinder. REFER to: Door Lock Cylinder (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	GO to G3

G3 CHECK THE DOOR LOCK CYLINDER LINKAGE CONNECTION

- Inspect the door lock cylinder linkage.

Is the door lock cylinder rod and lever disconnected?

Yes	CONNECT the door lock cylinder rod and lever.
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

G4 CHECK THE LOCK CYLINDER OPERATION AFTER LUBRICATION

- Spray a lock lubricant (such as Motorcraft® XL-1) into the lock cylinder opening for a couple of seconds.
- Operate the door lock cylinder with the key.

Does the door lock and unlock using the door lock cylinder?

Yes	The concern was caused by an insufficiently lubricated lock cylinder. SPRAY a multi-purpose grease (such as Motorcraft® XL-5) into the lock cylinder for a couple seconds to provide long term lubrication.
No	GO to G5

G5 CHECK THE DOOR LOCK CYLINDER FOR BINDING

- Remove the door lock cylinder.
REFER to: [Door Lock Cylinder](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
- Operate the door lock cylinder with the key.

Does the door lock cylinder rotate freely?

Yes	GO to G6
No	INSTALL a new door lock cylinder. REFER to: Door Lock Cylinder (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

G6 CHECK THE DOOR LOCK CYLINDER LINKAGE

- Operate the door lock using the door lock cylinder linkage.
- Operate the door lock cylinder with the key.

Is the door lock cylinder rod and lever binding, damaged or disconnected?

Yes	REPAIR as necessary
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

The Ignition Lock Cylinder Is Difficult To Turn

Normal Operations and Fault Conditions

The ignition lock cylinder mechanically rotates the ignition switch within the ignition lock cylinder housing. Insertion and extraction of the key and rotation of the lock cylinder using a correctly cut key should be smooth and require minimal effort.

Possible Causes

- Key
- Ignition switch
- Ignition lock cylinder

PINPOINT TEST H : THE IGNITION LOCK CYLINDER IS DIFFICULT TO TURN

H1 CHECK THE KEY

- Inspect the key for an incorrect cut, burrs or damage.

Is the key correctly cut and free of burrs and damage?

Yes	GO to H2
No	REPLACE and PROGRAM a new key

H2 CHECK THE IGNITION LOCK CYLINDER OPERATION

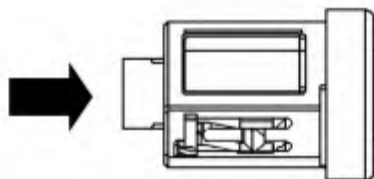
- Insert the key into the ignition lock cylinder and rotate the key through all ignition switch positions.

Does the key rotate through all ignition switch positions without excessive effort?

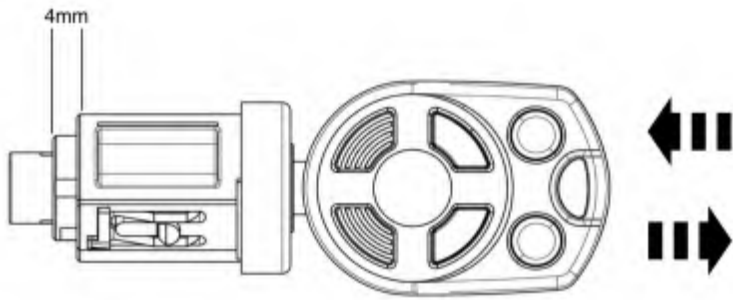
Yes	The mechanical function of the ignition lock cylinder is OK.
No	GO to H3

H3 CHECK THE IGNITION LOCK CYLINDER WHILE INSERTING THE KEY

- Remove the ignition lock cylinder.
REFER to: [Ignition Lock Cylinder](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
- While holding the ignition lock cylinder, apply finger pressure to the back of the lock.



- E156319
- With pressure still applied to the back of the lock, insert and remove the key from the ignition lock cylinder. Repeat this step several times.



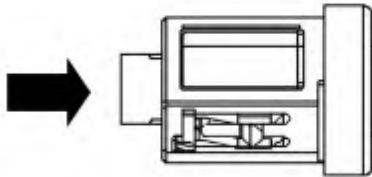
• E156320

Does the key insert and remove freely into the ignition lock cylinder?

Yes	GO to H4
No	INSTALL a new ignition lock cylinder. REFER to: Ignition Lock Cylinder (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

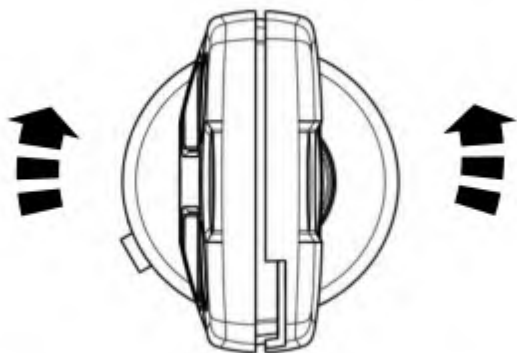
H4 CHECK THE IGNITION LOCK CYLINDER FOR BINDING ROTATION

- While holding the ignition lock cylinder, apply finger pressure to the back of the lock.



• E156319

- With pressure still applied to the back of the lock, use the key to rotate the ignition lock cylinder through all positions.



E156321

Does the ignition lock cylinder rotate freely?

Yes	INSTALL a new ignition switch. REFER to: Ignition Switch (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	INSTALL a new ignition lock cylinder. REFER to: Ignition Lock Cylinder (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

All Door Locks Are Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- BCM

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

I1 CHECK FOR BCM (BODY CONTROL MODULE) , DDM (DRIVER DOOR MODULE) AND PDM (PASSENGER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM self-test.
- Using a diagnostic scan tool, carry out the DDM self-test.
- Using a diagnostic scan tool, carry out the PDM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the BCM DTC Chart, the DDM DTC Chart or the PDM DTC Chart in this section.
No	GO to I2

I2 VERIFY THE OPERATION OF BOTH DOOR LOCK CONTROL SWITCHES

- Press the lock and unlock buttons on both door lock control switches while observing the door lock operation.

Does any door lock operate?

Yes	GO to I3
No	GO to I4

I3 CHECK IF THE LOCKS OPERATE IN ONLY ONE DIRECTION

- Press the lock and unlock buttons from the driver door lock control switch and then the passenger door lock control switch while observing the door locks.

Are all the door locks inoperative from both switch positions (lock and unlock) of either door lock control switch?

Yes	GO to Pinpoint Test L
No	GO to Pinpoint Test K

I4 CHECK THE BCM (BODY CONTROL MODULE) DOOR LOCK GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM C2280C.

Is the resistance less than 3 ohms?

Yes	GO to I5
No	REPAIR the circuit.

I5 CHECK THE ALL DOOR LOCK CIRCUIT FOR AN OPEN

- Disconnect Left Front Door Latch C525.

Is the resistance less than 3 ohms?

Yes	GO to I6
No	REPAIR the circuit.

I6 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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.

A Single or More Than One Door Lock Is Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Fuse
- Wiring, terminals or connectors
- Door latch
- BCM

Visual Inspection and Diagnostic Pre-checks

- Check the BCM fuse 24 (20A)

PINPOINT TEST J : A SINGLE OR MORE THAN ONE DOOR LOCK IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.	
J1 CHECK THE DOOR LATCH FOR BINDING	
• Lock and unlock the inoperative door lock using the manual door lock rod.	
Does the door lock and unlock?	
Yes	VERIFY the BCM fuse 24 (20A) is OK. If OK, GO to J2 If not OK, REFER to the Wiring Diagrams manual to identify the possible cause of the circuit short.
No	INSTALL a new door latch. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
J2 CHECK THE BCM (BODY CONTROL MODULE) ALL LOCK OUTPUT CIRCUIT FOR AN OPEN	

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 the suspect door latch.
- For the suspect door latch, connect:

Click to display connectors

Right Rear Door Latch

Lead 1	Measurement / Action	Lead 2
C804-1		Ground

- **NOTE:** The BCM only supplies voltage to the actuator momentarily. It is important to monitor the test lamp while pressing the door lock control switch.

While pressing the door lock control switch in the lock position, monitor the test lamp.

Does the test lamp momentarily illuminate?

Yes	GO to J3
No	REPAIR the circuit.

J3 CHECK THE BCM (BODY CONTROL MODULE) UNLOCK OUTPUT CIRCUIT FOR AN OPEN

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.

- For the suspect door latch, connect:

Click to display connectors

Right Rear Door Latch

Lead 1	Measurement / Action	Lead 2

C804-2



Ground

- **NOTE:** The BCM only supplies voltage to the actuator momentarily. It is important to monitor the test lamp while pressing the door lock control switch.

While pressing the door lock control switch in the unlock position, monitor the test lamp.

Does the test lamp momentarily illuminate?

Yes	INSTALL a new door latch in question. REFER to: Front Door Latch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). REFER to: Rear Door Latch - SuperCrew (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	REPAIR the circuit.

The Door Locks Operate Only One Way

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

DDM/ PDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B108F:23	Cabin Lock/Unlock Switch: Signal Stuck Low	Sets when the DDM/ PDM detects a short to ground from one of the door lock control switch input circuits.

Possible Causes

- Wiring, terminals or connectors
- Door lock control switch
- PDM
- DDM

Visual Inspection and Diagnostic Pre-checks

- Check the BCM fuse 3 (20A)

PINPOINT TEST K : THE DOOR LOCKS OPERATE ONLY ONE WAY

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

K1 CHECK FOR DDM (DRIVER DOOR MODULE) / PDM (PASSENGER DOOR MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B108F:23

- Ignition ON.
- Using a diagnostic scan tool, carry out the DDM and the PDM self-tests.

Is DTC B108F:23 present?

Yes	GO to K2
No	VERIFY the BCM fuse 3 (20A) is OK. If OK, GO to K4 If not OK, REFER to the Wiring Diagrams manual to identify the possible cause of the circuit short.

K2 ISOLATE THE DOOR LOCK CONTROL SWITCH

- Ignition OFF.
- Disconnect the suspect door lock control switch.
- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the DDM or the PDM self-test.

Is DTC B108F:23 still present?

Yes	GO to K3
No	INSTALL a new door lock control switch. REFER to: Front Door Lock Control Switch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

K3 CHECK THE DOOR LOCK CONTROL SWITCH INPUT CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect DDM C501A (DTC set in DDM).
- Disconnect PDM C652A (DTC set in PDM).

Are the resistances greater than 10,000 ohms?

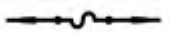
Yes	For the PDM, GO to K8 For the DDM, GO to K9
No	REPAIR the circuit in question.

K4 CHECK THE LOCK REQUEST INPUT CIRCUIT

- Ignition OFF.
- Disconnect the suspect door lock control switch.
- For the driver door lock control switch, connect:

Click to display connectors

Vehicles Equipped With A Memory Seat

Lead 1	Measurement / Action	Lead 2
C541-7		C541-6

- Remove the fused jumper wire.

Do the doors lock?

Yes	GO to K6
No	GO to K5

K5 CHECK THE LOCK REQUEST INPUT CIRCUIT FOR AN OPEN

- Disconnect DDM C501A (driver door lock control switch).
- Disconnect PDM C652A (passenger door lock control switch).
- For the driver door lock control switch, measure:

Click to display connectors

Vehicles Equipped With A Memory Seat

Positive Lead	Measurement / Action	Negative Lead
C541-7	Ω	C501A-20

Is the resistance less than 3 ohms?

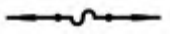
Yes	For a concern with the passenger door lock control switch, GO to K8 For a concern with the driver door lock control switch, GO to K9
No	REPAIR the circuit.

K6 CHECK THE UNLOCK REQUEST INPUT CIRCUIT

- For the driver door lock control switch, connect:

Click to display connectors

Vehicles Equipped With A Memory Seat

Lead 1	Measurement / Action	Lead 2
C541-8		C541-6

- Remove the fused jumper wire.

Do the doors unlock?

Yes	INSTALL a new door lock control switch. REFER to: Front Door Lock Control Switch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
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No	GO to K7
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K7 CHECK THE UNLOCK REQUEST INPUT CIRCUIT FOR AN OPEN

- Disconnect DDM C501A (driver door lock control switch).
- Disconnect PDM C652A (passenger door lock control switch).
- For the driver door lock control switch, measure:

Click to display connectors

Vehicles Equipped With A Memory Seat

Positive Lead	Measurement / Action	Negative Lead
C541-8	Ω	C501A-10

Is the resistance less than 3 ohms?

Yes	For a concern with the passenger door lock control switch, GO to K8 For a concern with the driver door lock control switch, GO to K9
No	REPAIR the circuit.

K8 CHECK FOR CORRECT PDM (PASSENGER DOOR MODULE) OPERATION

- Disconnect and inspect all the PDM connectors.
- Repair:
 - corrosion (install new connectors 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 make sure they seat and latch correctly.
- Operate the system and 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 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.

K9 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Disconnect and inspect all the DDM connectors.
- Repair:
 - corrosion (install new connectors 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 make sure they seat and latch correctly.
- Operate the system and 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 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.

All Door Locks Are Inoperative From One Door Lock Control Switch

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- Door lock control switch
- PDM
- DDM

Visual Inspection and Diagnostic Pre-checks

- Check the door lock control switch for damage.

PINPOINT TEST L : ALL DOOR LOCKS ARE INOPERATIVE FROM ONE DOOR LOCK CONTROL SWITCH

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

L1 CHECK FOR COMMUNICATION TO THE DDM (DRIVER DOOR MODULE) AND PDM (PASSENGER DOOR MODULE)

- Ignition ON.
- Using a diagnostic scan tool, carry out the network test.

Do the DDM and PDM pass the network test?

Yes	GO to L2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

L2 BYPASS THE SUSPECT DOOR LOCK CONTROL SWITCH

- Ignition OFF.
- Disconnect the suspect door lock control switch.
- Lock the doors using the working door lock control switch.
- For the driver door lock control switch, connect:

Click to display connectors

Vehicles Equipped With A Memory Seat

Lead 1	Measurement / Action	Lead 2
C541-8		C541-6

- Remove the fused jumper wire.

Do the doors unlock?

Yes	INSTALL a new door lock control switch. REFER to: Front Door Lock Control Switch (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	GO to L3

L3 CHECK THE DOOR LOCK CONTROL SWITCH GROUND CIRCUIT FOR AN OPEN

- Disconnect DDM C501A (driver door lock control switch).
- Disconnect PDM C652A (passenger door lock control switch).
- For the driver door lock control switch, measure:

Click to display connectors

Vehicles Equipped With A Memory Seat

Positive Lead	Measurement / Action	Negative Lead
C541-6	Ω	C501A-17

Is the resistance less than 3 ohms?

Yes	For a concern with the passenger door lock control switch, GO to L4 For a concern with the driver door lock control switch, GO to L5
No	REPAIR the circuit.

L4 CHECK FOR CORRECT PDM (PASSENGER DOOR MODULE) OPERATION

- Disconnect and inspect all the PDM connectors.
- Repair:
 - corrosion (install new connectors 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 make sure they seat and latch correctly.
- Operate the system and 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 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.

L5 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Disconnect and inspect all the DDM connectors.
- Repair:
 - corrosion (install new connectors 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 make sure they seat and latch correctly.
- Operate the system and 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 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.

The Tailgate Lock Is Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Refer to Wiring Diagrams Cell 89 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- Tailgate lock actuator

PINPOINT TEST M : THE TAILGATE LOCK IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.	
M1 CHECK THE DOOR LOCK OPERATION	
• Ignition OFF. • Check the operation of the door locks using the left front door lock control switch.	
Do the door locks operate correctly?	
Yes	GO to M2
No	REFER to the Symptom Chart: Handles, Locks, Latches and Entry Systems - Electrical in this section.
M2 CHECK THE LOCK CIRCUIT FOR AN OPEN	

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 Tailgate Lock Actuator C4498.
- **NOTE:** *The BCM only supplies voltage to the actuator momentarily. It is important to monitor the test lamp while pressing the door lock control switch.*

While pressing the door lock control switch in the lock position, monitor the test lamp.

Does the test lamp momentarily illuminate?

Yes	GO to M3
No	REPAIR the circuit.

M3 CHECK THE UNLOCK CIRCUIT FOR AN OPEN

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.

- **NOTE:** *The BCM only supplies voltage to the actuator momentarily. It is important to monitor the test lamp while pressing the door lock control switch.*

While pressing the door lock control switch in the unlock position, monitor the test lamp.

Does the test lamp momentarily illuminate?

Yes	INSTALL a new tailgate lock actuator. REFER to: Tailgate Latch Control Assembly (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	REPAIR the circuit.

The Tailgate Latch Release Is Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
C1017:11	Boot/Trunk Primary Switch: Circuit Short To Ground	Sets when the BCM detects a short to ground from the tailgate release switch input circuit.

Possible Causes

- Fuse
- Wiring, terminals or connectors
- Tailgate release switch
- Tailgate release actuator
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the tailgate release switch for damage
- Check the BCM fuse 3 (20A)

PINPOINT TEST N : THE TAILGATE LATCH RELEASE IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.	
N1 CHECK THE TAILGATE RELEASE SWITCH INPUT FOR A SHORT TO GROUND USING THE BCM (BODY CONTROL MODULE) LIFTGATE/ DECKLID RELEASE OUTPUT (DECKLID_R_SW) PID (PARAMETER IDENTIFICATION)	
• Ignition ON. • Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs). • Using a diagnostic scan tool, view the BCM PID DECKLID_R_SW.	
Does the PID indicate the tailgate release switch is continuously pressed?	
Yes	GO to N2
No	GO to N4

N2 CHECK THE TAILGATE RELEASE SWITCH INPUT USING THE BCM (BODY CONTROL MODULE) LIFTGATE/DECKLID RELEASE OUTPUT (DECKLID_R_SW) PID (PARAMETER IDENTIFICATION) WITH THE SWITCH DISCONNECTED

- Ignition OFF.
- Disconnect Tailgate Release Switch C4499.
- Ignition ON.
- Using a diagnostic scan tool, view the BCM PID DECKLID_R_SW.

Does the PID continue to indicate the switch is pressed?

Yes	GO to N3
No	INSTALL a new tailgate release switch. REFER to: Tailgate Release Switch (501-14 Handles, Locks, Latches and Entry Systems) .

N3 CHECK THE TAILGATE RELEASE SWITCH INPUT CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect BCM C2280E.

Is the resistance greater than 10,000 ohms?

Yes	GO to N11
No	REPAIR the circuit.

N4 CHECK THE TAILGATE RELEASE SWITCH INPUT USING THE BCM (BODY CONTROL MODULE) LIFTGATE/DECKLID RELEASE OUTPUT (DECKLID_R_SW) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, view the BCM PID DECKLID_R_SW while pressing the tailgate release switch.

Does the PID indicate the switch is pressed?

Yes	GO to N8
No	GO to N5

N5 CHECK THE TAILGATE RELEASE INPUT CIRCUIT WHILE MONITORING THE BCM (BODY CONTROL MODULE) LIFTGATE/DECKLID RELEASE OUTPUT (DECKLID_R_SW) PID (PARAMETER IDENTIFICATION)

- Ignition OFF.
- Disconnect Tailgate Release Switch C4499.
- Ignition ON.
- Using a diagnostic scan tool, view the BCM PID DECKLID_R_SW.

Does the PID indicate the switch is pressed?

Yes	REMOVE the fused jumper wire. GO to N6
No	REMOVE the fused jumper wire. GO to N7

N6 CHECK THE TAILGATE RELEASE SWITCH GROUND CIRCUIT FOR AN OPEN

- Using a diagnostic scan tool, view the BCM PID DECKLID_R_SW.

Does the PID indicate the switch is pressed?

Yes	REMOVE the fused jumper wire. INSTALL a new tailgate release switch. REFER to: Tailgate Release Switch (501-14 Handles, Locks, Latches and Entry Systems) .
No	REMOVE the fused jumper wire. REPAIR the circuit.

N7 CHECK THE TAILGATE RELEASE SWITCH INPUT CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM C2280E.

Is the resistance less than 3 ohms?

Yes	GO to N11
No	REPAIR the circuit.

N8 CHECK THE BCM (BODY CONTROL MODULE) TAILGATE RELEASE OUTPUT

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 Tailgate Release Actuator C4223.
- Unlock the doors using the door lock control switch.
- **NOTE:** The BCM only supplies voltage to the actuator momentarily. It is important to monitor the test lamp while pressing the tailgate release switch.

While pressing the tailgate release switch, monitor the test lamp.

Does the test lamp momentarily illuminate?

Yes	GO to N9
No	GO to N10

N9 CHECK THE TAILGATE RELEASE ACTUATOR GROUND CIRCUIT FOR AN OPEN

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.

- **NOTE:** The BCM only supplies voltage to the actuator momentarily. It is important to monitor the test lamp while pressing the tailgate release switch.

While pressing the tailgate release switch, monitor the test lamp.

Does the test lamp momentarily illuminate?

Yes	INSTALL a new tailgate release actuator. REFER to: Tailgate Latch Actuator (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	REPAIR the circuit.

N10 CHECK THE BCM (BODY CONTROL MODULE) TAILGATE RELEASE ACTUATOR OUTPUT CIRCUIT FOR AN OPEN

- Disconnect BCM C2280C.

Is the resistance less than 3 ohms?

Yes	GO to N11
No	REPAIR the circuit.

N11 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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 Doors Do Not Lock Or Unlock Using The Keyless Entry Keypad

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B121B:01	Keypad Input Switch: General Electrical Failure	Sets when the BCM detects a short to ground from any of the keyless entry keypad input circuits.

Possible Causes

- Wiring, terminals or connectors
- Keyless entry keypad
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the keyless entry keypad for damage.

PINPOINT TEST O : THE DOORS DO NOT LOCK OR UNLOCK USING THE KEYLESS ENTRY KEYPAD

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

O1 CHECK POWER LOCK OPERATION FROM THE DOOR LOCK CONTROL SWITCH

- Press the lock and unlock button on the door lock control switch.

Do the doors lock and unlock?

Yes	GO to O2
No	REFER to the Symptom Chart: Handles, Locks, Latches and Entry Systems - Electrical in this section.

O2 CHECK FOR BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B121B:01

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM self-test.

Is DTC B121B:01 present?

Yes	GO to O3
No	GO to O5

O3 ISOLATE THE KEYLESS ENTRY KEYPAD

- Ignition OFF.
- Disconnect Keyless Entry Keypad C500.
- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the BCM self-test.

Is DTC B121B:01 still present?

Yes	GO to O4
No	INSTALL a new keyless entry keypad. REFER to: Keyless Entry Keypad (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

O4 CHECK THE KEYLESS ENTRY KEYPAD INPUT CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect BCM C2280E.

Are the resistances greater than 10,000 ohms?

Yes	GO to O11
No	REPAIR the circuit in question.

O5 CHECK THE BCM (BODY CONTROL MODULE) KEYPAD CODE

- Using a diagnostic scan tool, view the factory keyless entry code.
- Enter the 5-digit factory set entry code on the keyless entry keypad, then touch the 3/4 button.
- Simultaneously touch the 7/8 and 9/0 buttons for 3 seconds.

Do the doors unlock when the factory code is entered and lock when the 7/8 and 9/0 buttons are pressed?

Yes	The system is operating as designed. INFORM the customer of the correct system operation.
No	GO to O6

O6 CHECK THE BCM (BODY CONTROL MODULE) KEYPAD PARAMETER IDENTIFICATIONS (PIDS)

- Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).
- Press each keyless entry keypad button while observing the following BCM Parameter Identifications (PIDs):
 - Keypad button (KYPD_BTN_1/2)
 - Keypad button (KYPD_BTN_3/4)
 - Keypad button (KYPD_BTN_5/6)
 - Keypad button (KYPD_BTN_7/8)
 - Keypad button (KYPD_BTN_9/0)

Do all of the Parameter Identifications (PIDs) indicate the buttons operate correctly?

Yes	GO to O11
No	GO to O7

O7 CHECK THE KEYLESS ENTRY KEYPAD GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect Keyless Entry Keypad C500.

Is the resistance less than 3 ohms?

Yes	GO to O8
No	REPAIR the circuit.

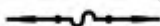
O8 BYPASS THE KEYLESS ENTRY KEYPAD

- Ignition ON.
- Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, monitor the following BCM Parameter Identifications (PIDs):
 - Keypad button (KYPD_BTN_1/2)
 - Keypad button (KYPD_BTN_7/8)
 - Keypad button (KYPD_BTN_9/0)

- Connect:

Click to display connectors

Keypad Button 1/2

Lead 1	Measurement / Action	Lead 2
C500-1		C500-6

- Remove the fused jumper wire.
- Connect:

Click to display connectors

Keypad Button 7/8

Lead 1	Measurement / Action	Lead 2
--------	----------------------	--------

C500-3



C500-6

- Remove the fused jumper wire.
- Connect:

Click to display connectors

Keypad Button 9/0

Lead 1	Measurement / Action	Lead 2
C500-5		C500-6

- Remove the fused jumper wire.

Do the Parameter Identifications (PIDs) indicate correctly when the jumper wire is connected?

Yes	INSTALL a new keyless entry keypad. REFER to: Keyless Entry Keypad (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	GO to O9

O9 CHECK THE KEYLESS ENTRY KEYPAD INPUT CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect BCM C2280E.

Are the resistances less than 3 ohms?

Yes	GO to O10
No	REPAIR the circuit in question.

O10 CHECK THE KEYLESS ENTRY KEYPAD INPUT CIRCUITS FOR A SHORT TO EACH OTHER

Are the resistances greater than 10,000 ohms?

Yes	GO to O11
No	REPAIR the circuits in question.

O11 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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 Keyless Entry Keypad Illumination Is Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B121A:11	Keypad Illumination Output: Circuit Short To Ground	Sets when the BCM detects a short to ground from the keyless entry keypad illumination output circuit.
B121A:15	Keypad Illumination Output: Circuit Short To Battery Or Open	Sets when the BCM detects an open from the keyless entry keypad illumination output circuit.

Possible Causes

- Wiring, terminals or connectors
- Keyless entry keypad
- BCM

PINPOINT TEST P : THE KEYLESS ENTRY KEYPAD ILLUMINATION IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

P1 CHECK THE KEYLESS ENTRY KEYPAD OPERATION

NOTE: It is normal operation for the keypad to illuminate when the illuminated entry/exit feature is active. Make sure all the doors are closed and the feature times out.

- Press the 7/8 and 9/0 buttons simultaneously on the keyless entry keypad.

Do the doors lock using the keyless entry keypad?

Yes	GO to P2
No	GO to Pinpoint Test O

P2 CHECK FOR BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B121A:11

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM self-test.

Is DTC B121A:11 present?

Yes	GO to P3
No	GO to P5

P3 CHECK THE KEYLESS ENTRY KEYPAD FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect Keyless Entry Keypad C500.
- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the BCM self-test.

Is DTC B121A:11 still present?

Yes	GO to P4
No	INSTALL a new keyless entry keypad. REFER to: Keyless Entry Keypad (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

P4 CHECK THE KEYPAD ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect BCM C2280E.

Is the resistance greater than 10,000 ohms?

Yes	GO to P7
No	REPAIR the circuit.

P5 CHECK THE BCM (BODY CONTROL MODULE) OUTPUT USING THE KEYPAD LAMP OUTPUT STATUS (KEY_PAD_LMP) PID (PARAMETER IDENTIFICATION)

- Ignition OFF.
- Disconnect Keyless Entry Keypad C500.
- Ignition ON.
- Using a diagnostic scan tool, command the BCM KEY_PAD_LMP PID on.

Is the voltage greater than 11 volts?

Yes	INSTALL a new keyless entry keypad. REFER to: Keyless Entry Keypad (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	GO to P6

P6 CHECK THE BCM (BODY CONTROL MODULE) KEYPAD ILLUMINATION OUTPUT CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM C2280E.

Is the resistance less than 3 ohms?

Yes	GO to P7
No	REPAIR the circuit.

P7 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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 Keyless Entry Keypad Illumination Is Always On

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B121A:15	Keypad Illumination Output: Circuit Short To Battery Or Open	Sets when the BCM detects a short to voltage from the keyless entry keypad illumination output circuit.

Possible Causes

- Wiring, terminals or connectors
- BCM

PINPOINT TEST Q : THE KEYLESS ENTRY KEYPAD ILLUMINATION IS ALWAYS ON

Q1 CHECK THE KEYLESS ENTRY KEYPAD ILLUMINATION

NOTE: It is normal operation for the keypad to illuminate when the illuminated entry/exit feature is active. Make sure all the doors are closed and the feature times out.

- Ignition ON.
- Wait 45 seconds and observe the keyless entry keypad illumination.

Is the keyless entry keypad illumination always on?

Yes	GO to Q2
No	The system is operating as designed. INFORM the customer of the correct system operation.

Q2 CHECK THE BCM (BODY CONTROL MODULE) KEYPAD ILLUMINATION OUTPUT CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect BCM C2280E.
- Ignition ON.

Is the keypad still illuminated?

Yes	REPAIR the circuit.
No	GO to Q3

Q3 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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 RKE Transmitter Is Inoperative

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B10AB:00	Remote Keyless Entry Synchronization: No Sub Type Information	Sets when the BCM detects the rolling counter received from a RKE transmitter is out of synchronization with the rolling counter stored in the module.
B1218:00	Transmitter Identification Code: No Sub Type Information	Sets when the BCM detects and invalid Transmitter Identification Code (TIC).

Possible Causes

- Key battery
- Key
- Key button pressed a substantial amount of times while outside the range of the vehicle
- Key programming
- Network concern

Visual Inspection and Diagnostic Pre-checks

- Inspect the key for damage.
- Check for aftermarket keys.

PINPOINT TEST R : THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER IS INOPERATIVE

NOTE: All customer keys need to be present when diagnosing the RKE system.

NOTE: Using a diagnostic scan tool to compare the BCM TIC_XX_BCM (Programmed Transmitter ID Code (TIC) Value x) PID to the RTM Lst_Xm_ID_Cd (Last Received Transmitter ID Code (TIC)) PID can be used to verify if a key in question is programmed to the vehicle.

R1 CHECK FOR THE CORRECT KEYS

- Verify all keys present are the correct type for the vehicle. Refer to the PATS Job Aid in the Service Tips tab on the Professional Technician Society (PTS) web page or the parts catalog.

Are the correct keys present?

Yes	For vehicles not equipped with push button start, GO to R2 For vehicles equipped with push button start, GO to R4
No	The system cannot be tested without the correct keys. INFORM the customer that all of the correct keys must be present to proceed with diagnosis of the system.

R2 CHECK IF THE KEYS START THE VEHICLE (VEHICLES NOT EQUIPPED WITH PUSH BUTTON START)

- Place the first key in the ignition lock cylinder and attempt to start the vehicle.
- Ignition OFF.
- Place the second key in the ignition lock cylinder and attempt to start the vehicle.

Do both keys start the vehicle?

Yes	GO to R3
No	REFER to: Passive Anti-Theft System (PATS) (419-01B Passive Anti-Theft System (PATS), Diagnosis and Testing).

R3 CHECK THE BCM (BODY CONTROL MODULE) UNLIMITED KEY MODE

NOTE: When the BCM is set to Unlimited Key mode, the IKT keys still start the vehicle but the RKE functionality is inoperative. The BCM only recognizes the first 2 keys reprogrammed for RKE functionality after it is set to Unlimited Key mode.

- Ignition ON.
- **NOTE:** Unlimited Key mode is used when more than 8 keys are required to be programmed to the vehicle. This mode should only be used for Fleet vehicle purposes.

Using a diagnostic scan tool, access the security feature and determine if the BCM is in Unlimited Key mode.

REFER to: [Anti-Theft Security Access and Key Programming - Scan Tool](#) (419-01B Passive Anti-Theft System (PATS), General Procedures).

Is the BCM Unlimited Key mode enabled?

Yes	If this is the desired mode, ERASE and PROGRAM the keys. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). If this is not the desired mode, DISABLE the Unlimited Key mode. All IKT keys (up to 4) programmed prior to the BCM Unlimited Key mode being enabled have the RKE function restored.
No	GO to R5

R4 CHECK IF THE KEYS START THE VEHICLE (VEHICLES EQUIPPED WITH PUSH BUTTON START)

- Place the first key in the backup starting location and attempt to start the vehicle.
REFER to: Passive Anti-Theft System (PATS) (419-01 Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System) .
- Ignition OFF.
- Place the second key in the backup starting location and attempt to start the vehicle.

Do both keys start the vehicle?

Yes	GO to R5
No	REFER to: Passive Anti-Theft System (PATS) (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Diagnosis and Testing).

R5 CHECK FOR REDUCED RANGE

NOTE: Make sure the vehicle is in an open area with no other large metal objects near, such as other vehicles or steel buildings.

NOTE: If the RKE functions when near the vehicle, but not at approximately 30m (98 ft), a poor range concern is present.

- Check all keys for normal range performance (approximately 30 m (98 ft)).

Do the keys experience poor range?

Yes	GO to Pinpoint Test T
No	GO to R6

R6 CHECK THE RKE (REMOTE KEYLESS ENTRY) FUNCTIONALITY OF THE KEYS

- Press each RKE button on a key. Repeat this step on a second key.

Are all the RKE functions inoperative from both keys?

Yes	GO to R16
No	GO to R7

R7 CHECK THE RKE (REMOTE KEYLESS ENTRY) FUNCTIONALITY OF THE SUSPECT KEY

- Press each RKE button (twice for the tailgate latch release if equipped) on the suspect key.

Does any RKE function operate?

Yes	GO to Pinpoint Test S
No	GO to R8

R8 CHECK THE NO (TIC) OUT OF SYNC (TIC-NONE_OOS) PID (PARAMETER IDENTIFICATION)

- Ignition ON.
- Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, monitor the BCM PID TIC-NONE_OOS.

Does the PID indicate On?

Yes	GO to R12
No	For an Integrated Keyhead Transmitter, GO to R9 For a passive key, GO to R10

R9 RESYNCHRONIZE THE INOPERATIVE KEY BY CYCLING THE IGNITION

- Insert the suspect key into the ignition lock cylinder.
- Ignition ON.
- Wait 10 seconds.
- Ignition OFF.
- Remove the suspect key from the ignition lock cylinder and check the RKE transmitter operation.

Does the suspect key operate correctly now?

Yes	The system is OK. The concern was caused by a key out of synchronization.
No	GO to R11

R10 RESYNCHRONIZE THE INOPERATIVE PASSIVE KEY

- Ignition OFF.
- Place the suspect key in the backup starting location.
REFER to: Passive Anti-Theft System (PATS) (419-01 Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System) .
- Ignition ON.
- Wait 10 seconds.
- Ignition OFF.
- Within 30 seconds, press any button on the suspect key 4 times consecutively.

Does the suspect key operate correctly now?

Yes	The system is OK. The concern was caused by a key out of synchronization.
No	GO to R11

R11 RESYNCHRONIZE THE INOPERATIVE KEY USING THE SECOND KEY

- Press any button on the operational key.
- Within 30 seconds, press any button on the suspect key.
- Check the suspect key for correct operation.

Does the suspect key operate correctly now?

Yes	The system is OK. The concern was caused by a key out of synchronization.
No	GO to R15

R12 CHECK THE (RKE) REMOTE BATTERY LOW (RKE_BATT_LOW) PID (PARAMETER IDENTIFICATION)

- Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, monitor the BCM PID RKE_BATT_LOW.

Does the PID indicate Off?

Yes	GO to R15
No	For an Integrated Keyhead Transmitter, GO to R13 For a passive key, GO to R14

R13 CHECK THE IKT (INTEGRATED KEYHEAD TRANSMITTER) KEY BATTERY

- Ignition OFF.
- **NOTE:** *Do not clean off any grease from the battery terminals on the back surface of the circuit board.*

Remove the key battery. Refer to the Owner Guide for battery removal instructions.

- Verify the correct battery is used (CR2032).
- Measure the key battery voltage.

Is the voltage greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM a new IKT. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures).
No	REPLACE the key battery (make sure the batteries are seated correctly). DO NOT reprogram the key (damaged or dead batteries do not erase keys from the BCM memory).

R14 CHECK THE PASSIVE KEY BATTERIES

- Ignition OFF.
- **NOTE:** Do not clean off any grease from the battery terminals on the back surface of the circuit board.

Remove the key batteries. Refer to the Owner Guide for battery removal instructions.

- Verify the correct batteries are used (CR2025).
- Measure the key batteries voltage.

Are the voltages greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM a new passive key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
No	REPLACE both key batteries (make sure the batteries are seated correctly). DO NOT reprogram the key (damaged or dead batteries do not erase keys from the BCM memory).

R15 PROGRAM THE SUSPECT KEY

- Program the suspect key.
 - For vehicles not equipped with push button start,
REFER to: [Anti-Theft Security Access and Key Programming - Scan Tool](#) (419-01B Passive Anti-Theft System (PATS), General Procedures).
 - For vehicles equipped with push button start,
REFER to: [Anti-Theft Security Access and Key Programming - Scan Tool](#) (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
- Check the RKE functionality of the suspect key.

Does the RKE functionality operate?

Yes	The system is OK. The concern was caused by an unprogrammed key.
No	REPLACE the suspect key. PROGRAM the keys. For vehicles not equipped with push button start, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). For vehicles equipped with push button start, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

R16 CHECK FOR COMMUNICATION WITH THE BCM (BODY CONTROL MODULE) AND THE RTM (RADIO TRANSCEIVER MODULE)

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

Does the BCM and the RTM pass the network test?

Yes	GO to R17
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

R17 CHECK FOR RTM (RADIO TRANSCEIVER MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out a RTM module self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the RTM DTC Chart in this section.
No	GO to R18

R18 CHECK FOR BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out a BCM module self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the BCM DTC Chart in this section.
No	GO to Pinpoint Test Y

An Individual Button/Feature Is Inoperative From The RKE Transmitter

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Door lock system concern
- Tailgate latch release system concern
- Horn system concern
- Turn signal system concern
- Remote start system concern
- Key

Visual Inspection and Diagnostic Pre-checks

- Inspect the key for damage.

PINPOINT TEST S : AN INDIVIDUAL BUTTON/FEATURE IS INOPERATIVE FROM THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER

NOTE: This pinpoint test does not diagnose dealer installed remote start systems.

S1 VERIFY THE DOOR LOCK OPERATION

- Press the lock and unlock button on the door lock control switch while observing the door lock operation.

Do the door locks operate correctly?

Yes	GO to S2
No	REFER to the Symptom Chart: Handles, Locks, Latches and Entry Systems - Electrical in this section.

S2 VERIFY THE HORN OPERATION USING THE BCM (BODY CONTROL MODULE) PID (PARAMETER IDENTIFICATION) (HORN_RELAY)

- Ignition ON.
- Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).
- Select the BCM horn PID (HORN_RELAY) and active command the horn on then off.

Does the horn sound when commanded on?

Yes	GO to S3
No	REFER to: Horn (413-06 Horn, Diagnosis and Testing).

S3 VERIFY THE HAZARD LAMP OPERATION

- Activate the hazard lamp function.

Do the hazard lamps operate correctly?

Yes	If equipped with a tailgate release switch, GO to S4 If not equipped with a tailgate release switch, GO to S5
No	REFER to: Turn Signal and Hazard Lamps (417-01 Exterior Lighting, Diagnosis and Testing).

S4 VERIFY THE TAILGATE LATCH RELEASE OPERATION

- Ignition OFF.
- Unlock the doors using the door lock control switch.
- Press the tailgate release switch located at the rear of the vehicle.

Does the tailgate latch release?

Yes	GO to S5
No	GO to Pinpoint Test N

S5 CHECK THE LOCK AND UNLOCK BUTTONS

- Press the lock and then unlock button on the suspect key.

Do the doors lock and unlock?

Yes	If equipped with a tailgate release switch, GO to S6 If not equipped with a tailgate release switch, GO to S7
No	REPLACE the suspect key. PROGRAM the new key. For an IKT, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). For a passive key, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

S6 CHECK THE TAILGATE RELEASE BUTTON

- Press the tailgate release button twice on the suspect key.

Does the tailgate latch release?

Yes	GO to S7
No	REPLACE the suspect key. PROGRAM the new key. For an IKT, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). For a passive key, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

S7 CHECK THE PANIC ALARM/VEHICLE LOCATOR BUTTON

- Press the panic/vehicle locator button on the suspect key.

Do the exterior lamps flash and the horn/chime sound?

Yes	If equipped with the factory remote start feature, GO to S8 If not equipped with the factory remote start feature, REPLACE the suspect key. PROGRAM the new key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). For an IKT, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). For a passive key, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
No	REPLACE the suspect key. PROGRAM the new key. For an IKT, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures). For a passive key, REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

S8 VERIFY THE REMOTE START OPERATION

- Close the hood and all the doors.
- **NOTE:** *Each button press must be done within 3 seconds of each other.*

From outside the vehicle using a passive key:

- Press the door lock button.
- Press the remote start button twice.

Does the vehicle remotely start?

Yes	The RKE transmitter is operating correctly. INFORM the customer of the RKE transmitter operation.
No	GO to Pinpoint Test U

The RKE Transmitter Has Poor Range Performance

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Key
- Key batteries
- Aftermarket system
- Consumer electronic device
- High power devices
- TV/radio transmission towers
- RTM

Visual Inspection and Diagnostic Pre-checks

- Inspect the key for damage.
- Inspect the key batteries.
- Inspect for aftermarket RKE systems.

PINPOINT TEST T : THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER HAS POOR RANGE PERFORMANCE

NOTE: At least 2 programmed keys must be present to begin diagnosis of the RKE system.

T1 CHECK FOR THE CORRECT KEYS

- Check that the correct keys are used with the vehicle. Refer to the PATS Job Aid in the Service Tips tab on the Professional Technician Society (PTS) web page or the parts catalog.

Are the correct keys present?

Yes	GO to T2
No	The system cannot be tested without the correct keys. INFORM the customer the correct keys must be present to proceed with diagnosis of the system.

T2 CHECK ALL KEYS FOR POOR RANGE PERFORMANCE

NOTE: Make sure the vehicle is in an open area with no other large metal objects near, such as other vehicles or steel buildings.

- Check all keys for normal range performance (approximately 30 m (98 ft)).

Do all keys experience poor range?

Yes	GO to T5
No	For an IKT, GO to T3 For a passive key, GO to T4

T3 CHECK THE IKT (INTEGRATED KEYHEAD TRANSMITTER) KEY BATTERY

NOTE: Do not clean off any grease from the battery terminals on the back surface of the circuit board.

- Remove the key battery. Refer to the Owner Guide for battery removal instructions.
- Verify the correct battery is used (CR2032).
- Measure the key battery voltage.

Is the voltage greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM the new key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01B Passive Anti-Theft System (PATS), General Procedures).
No	REPLACE the key battery (make sure the battery is seated correctly). DO NOT reprogram the key (weak or dead batteries do not erase keys from the BCM memory).

T4 CHECK THE PASSIVE KEY BATTERIES

NOTE: Do not clean off any grease from the battery terminals on the back surface of the circuit board.

- Remove the key batteries. Refer to the Owner Guide for battery removal instructions.
- Verify the correct batteries are used (CR2025).
- Measure the key batteries voltage.

Are the voltages greater than 2.5 volts?

Yes	REPLACE the suspect key. PROGRAM the new key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
No	REPLACE both key batteries (make sure the batteries are seated correctly). DO NOT reprogram the key (weak or dead batteries do not erase keys from the BCM memory).

T5 CHECK THE LOCATION OF THE VEHICLE AND THE APPROACH ANGLES AROUND THE VEHICLE

- Make sure the poor performance is consistent in nature and is not from one approaching angle.
- The RKE transmitter range performance may be degraded in certain locations. For example, if the vehicle or RKE transmitter is within range of high-power devices, radio/TV towers, 2-way radios, cell phone charger or other radio communication device, the operating distance of the keys may be reduced.

Is the poor range performance consistent around the vehicle?

Yes	INSTALL a new RTM. REFER to: Radio Transceiver Module (RTM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	The system is operating correctly at this time. The range may have been affected by environmental interference such as high-power devices or other radio communication device.

The Remote Start Feature Is Inoperative

Refer to Wiring Diagrams Cell 13 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Possible Causes

- Wiring, terminals or connectors
- Remote start feature not enabled
- Passive key
- Hood ajar switch input concern
- Door ajar switch input concern
- TR input concern
- Powertrain concern
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the passive key for damage.

PINPOINT TEST U : THE REMOTE START FEATURE IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.
NOTE: This pinpoint test does not diagnose dealer installed remote start systems.
U1 CHECK THE REMOTE START FEATURE ENABLE/DISABLE SETTING

- Ignition ON.
- Using the steering wheel control switch, check the remote start feature setting in the message center.

Is the remote start feature enabled?

Yes	GO to U2
No	ENABLE the remote start feature.

U2 CHECK THE PARK DETECT SWITCH INPUT

- Ignition ON.
- Verify the PRNDL displays correctly in the IPC. When the vehicle is in PARK, the P should be highlighted or displayed prominently.

Does the PRNDL display correctly?

Yes	GO to U3
No	DIAGNOSE the PRNDL. REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).

U3 CHECK FOR POWERTRAIN DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the PCM KOEO and KOER self-tests.

Are any PCM Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the PCM DTC chart in this section.
No	GO to U4

U4 CHECK FOR BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the BCM self-test.

Are any BCM Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the BCM DTC chart in this section.
No	GO to U5

U5 CHECK THE RKE (REMOTE KEYLESS ENTRY) FUNCTIONALITY

- Ignition OFF.
- Using the RKE function of the passive key, press the tailgate release button twice, the lock button and then the unlock button.

Do all the functions tested of the RKE transmitter operate (lock, unlock and tailgate latch release)?

Yes	GO to U6
No	If all of the functions are inoperative, GO to Pinpoint Test R If an individual function is inoperative, GO to Pinpoint Test S

U6 CHECK THE WAKE-UP CIRCUIT FOR VOLTAGE AT THE PCM (POWERTRAIN CONTROL MODULE) USING THE BCM (BODY CONTROL MODULE) PID (PARAMETER IDENTIFICATION) (PCM) WAKE-UP OUTPUT CONTROL (PCM_WKUP_CTRL)

- Disconnect: PCM B connector.
- Ignition ON.
- Using a diagnostic scan tool, command the BCM PID PCM_WKUP_CTRL on.
- Measure:

Click to display connectors

5.0L Ti-VCT

Positive Lead	Measurement / Action	Negative Lead
C1381B-65 (vehicles equipped with circuit CE436 on pin 65)		Ground

C1381B-7 (vehicles equipped with circuit CE436 on pin 7)		Ground
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Is the voltage greater than 11 volts?

Yes	GO to U8
No	GO to U7

U7 CHECK THE WAKE-UP CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM C2280D.
- Disconnect: BCM C2280F.
- Measure:

Click to display connectors

5.0L Ti-VCT

Positive Lead	Measurement / Action	Negative Lead
C1381B-65 (vehicles equipped with circuit CE436 on pin 65)	Ω	C2280F-18
C1381B-7 (vehicles equipped with circuit CE436 on pin 7)		C2280F-18

Is the resistance less than 3 ohms?

Yes	GO to U9
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No	REPAIR the circuit.
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U8 VERIFY THE REMOTE START FUNCTION IS INOPERATIVE

- Ignition OFF.
- Connect PCM B connector.
- Close all the doors, the hood and the liftgate.
- **NOTE:** *Each button press must be done within three seconds of each other.*

Using the key:

- Press the door lock button.
- Press the remote start button twice.

Does the vehicle remotely start?

Yes	The system is operating correctly. INFORM the customer of the correct vehicle remote start operation.
No	REPLACE the passive key in question. PROGRAM the new passive key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

U9 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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.

A Door Passive Entry Feature Is Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B11C6:01	Passenger Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault from one of the circuits to the passenger side keyless entry antenna (internal to the front passenger exterior door handle).
B11CA:01	Driver Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault from one of the circuits to the driver side keyless entry antenna (internal to the front driver exterior door handle).
B1336:01	Left Front Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault from one of the circuits to the driver side keyless entry antenna (internal to the front driver exterior door handle).
B1337:01	Right Front Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault from one of the circuits to the passenger side keyless entry antenna (internal to the front passenger exterior door handle).
B1381:11	Left Front Door Handle Proximity Sensor: Circuit Short To Ground	Sets when the BCM detects a fault from one of the circuits to the left front exterior door handle.
B1381:15	Left Front Door Handle Proximity Sensor: Circuit Short To Battery or Open	Sets when the BCM detects a fault from one of the circuits to the left front exterior door handle.
B1381:29	Left Front Door Handle Proximity Sensor: Signal Invalid	Set when the BCM detects an activated touch sensor for more than 5 minutes.
B1382:11	Right Front Door Handle Proximity Sensor: Circuit Short To Ground	Sets when the BCM detects a fault from one of the circuits to the right exterior door handle.

B1382:15	Right Front Door Handle Proximity Sensor: Circuit Short To Battery or Open	Sets when the BCM detects a fault from one of the circuits to the right exterior door handle.
B1382:29	Right Front Door Handle Proximity Sensor: Signal Invalid	Set when the BCM detects an activated touch sensor for more than 5 minutes.

Possible Causes

- Wiring, terminals or connectors
- Door lock system concern
- RKE system concern
- Exterior door handle
- BCM

Visual Inspection and Diagnostic Pre-checks

- Inspect the exterior door handles for damage.

PINPOINT TEST V : A DOOR PASSIVE ENTRY FEATURE IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

V1 CHECK THE DOOR LOCK OPERATION

- Lock and unlock the doors using a door lock control switch.

Do the doors lock and unlock?

Yes	GO to V2
No	REFER to the Symptom Chart: Handles, Locks, Latches and Entry Systems - Electrical in this section.

V2 CHECK THE RKE (REMOTE KEYLESS ENTRY) OPERATION

- Press the lock and unlock buttons on a key.

Do the doors lock and unlock?

Yes	GO to V3
No	GO to Pinpoint Test R

V3 CHECK THE PASSIVE ENTRY OPERATION FROM ALL DOORS

- Operate the passive entry feature from both front doors.

Is the passive entry feature inoperative from both front doors?

Yes	GO to V4
No	GO to V7

V4 CHECK THE EXTERIOR DOOR HANDLE GROUND CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: BCM C2280D.
- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to V5

V5 CHECK THE EXTERIOR DOOR HANDLE GROUND CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.

Is the resistance greater than 10,000 ohms?

Yes	GO to V6
No	REPAIR the circuit.

V6 CHECK THE EXTERIOR DOOR HANDLE GROUND CIRCUIT FOR AN OPEN (BOTH FRONT DOORS PASSIVE ENTRY INOPERATIVE)

- Disconnect: Right Front Exterior Door Handle C634.

Is the resistance less than 3 ohms?

Yes	GO to V16
No	REPAIR the circuit.

V7 CHECK FOR VOLTAGE TO THE EXTERIOR DOOR HANDLE

- Ignition OFF.
- Disconnect the suspect exterior door handle.
- Measure:

Click to display connectors

Right Front

Positive Lead	Measurement / Action	Negative Lead
C634-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to V10
No	GO to V8

V8 CHECK THE EXTERIOR DOOR HANDLE VOLTAGE SUPPLY CIRCUIT FOR A SHORT TO GROUND

- Disconnect: BCM C2280D.

- Measure:

Click to display connectors

Right Front

Positive Lead	Measurement / Action	Negative Lead
C634-1	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to V9
No	REPAIR the circuit.

V9 CHECK THE EXTERIOR DOOR HANDLE VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Measure:

Click to display connectors

Right Front

Positive Lead	Measurement / Action	Negative Lead
C634-1	Ω	C2280D-5

Is the resistance less than 3 ohms?

Yes	GO to V16
No	REPAIR the circuit.

V10 CHECK THE EXTERIOR DOOR HANDLE GROUND CIRCUIT FOR AN OPEN

- Disconnect: BCM C2280D.

- Measure:

Click to display connectors

Right Front

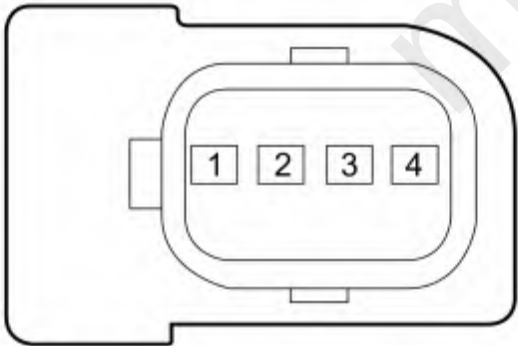
Positive Lead	Measurement / Action	Negative Lead
C634-4	Ω	C2280D-20

Is the resistance less than 3 ohms?

Yes	GO to V11
No	REPAIR the circuit.

V11 CHECK THE EXTERIOR DOOR HANDLE INTERNAL ANTENNA

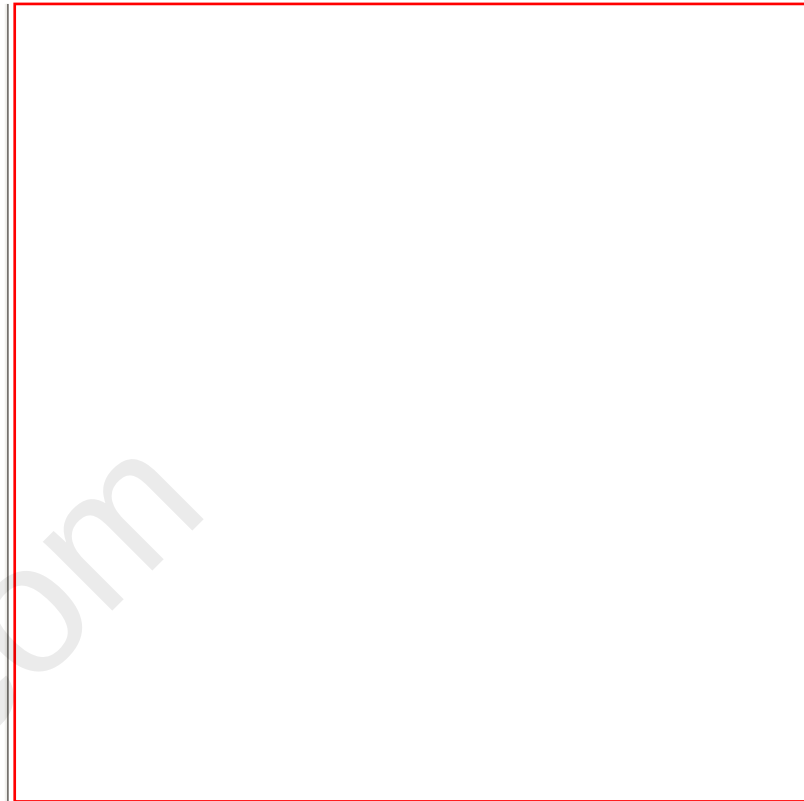
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E158730 C543, pin 2, component side		

C543, pin 3, component side



C634, pin 2, component side



C634, pin 3, component side

Is the resistance between 1 and 3 ohms?

Yes	GO to V12
No	INSTALL a new front exterior handle. REFER to: Exterior Front Door Handle (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

V12 CHECK THE EXTERIOR DOOR HANDLE

- Remove the opposite side exterior door handle.
REFER to: [Exterior Front Door Handle](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
- Transfer the exterior door handle from the opposite side of the vehicle to the suspect exterior door. For example, if the left front exterior door handle is suspect, transfer the right front exterior door handle to the left front door.
- Connect BCM C2280D.
- Operate the keyless entry feature from the suspect door.

Does the keyless entry feature operate from the suspect door?

Yes	INSTALL a new exterior handle. REFER to: Exterior Front Door Handle (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
No	GO to V13

V13 CHECK THE EXTERIOR DOOR HANDLE ANTENNA CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect: BCM C2280D.
- Ignition ON.
- Measure:

Click to display connectors

Right Front

Positive Lead	Measurement / Action	Negative Lead
C634-2		Ground
C634-3		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to V14

V14 CHECK THE EXTERIOR DOOR HANDLE ANTENNA CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Click to display connectors

Right Front

Positive Lead	Measurement / Action	Negative Lead
C634-2	Ω	Ground
C634-3		Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to V15
No	REPAIR the circuit in question.

V15 CHECK THE EXTERIOR DOOR HANDLE ANTENNA CIRCUITS FOR AN OPEN

- Measure:

Click to display connectors

Right Front

Positive Lead	Measurement / Action	Negative Lead
C634-2	Ω	C2280D-12
C634-3		C2280D-29

Are the resistances less than 3 ohms?

Yes	GO to V16
No	REPAIR the circuit in question.

V16 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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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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The Tailgate Passive Entry Feature Is Inoperative

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operations and Fault Conditions

REFER to: [Handles, Locks, Latches and Entry Systems - System Operation and Component Description](#) (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B10C6:01	Exterior Trunk Antenna: General Electrical Failure	Sets when the BCM detects a fault from the keyless entry rear antenna input.

Possible Causes

- Wiring, terminals or connectors
- Keyless entry rear antenna
- BCM

PINPOINT TEST W : THE TAILGATE PASSIVE ENTRY FEATURE IS INOPERATIVE

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

W1 CHECK THE LIFTGATE RELEASE SWITCH INPUT

- Close the tailgate.
- Ignition ON.
- Unlock the doors using the door lock control switch.
- Press the tailgate release button located at the rear of the vehicle.

Does the tailgate latch release?

Yes	GO to W2
No	GO to Pinpoint Test N

W2 CHECK THE RKE (REMOTE KEYLESS ENTRY) OPERATION

- Ignition OFF.
- Close the tailgate.
- Press the tailgate release button twice on a key.

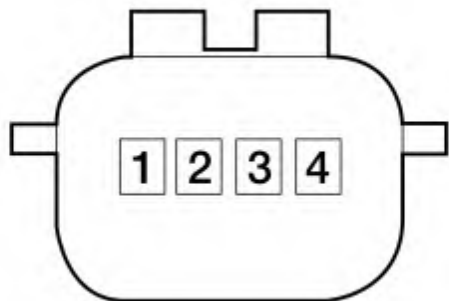
Does the tailgate latch release?

Yes	GO to W3
No	GO to Pinpoint Test R

W3 CHECK THE KEYLESS ENTRY REAR ANTENNA

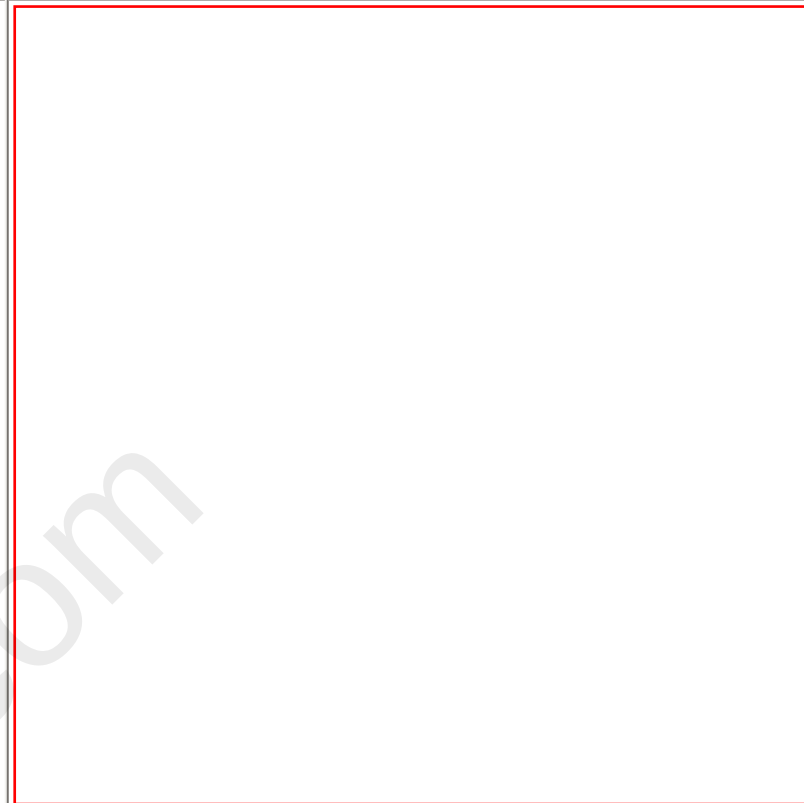
- Ignition OFF.
- Disconnect Keyless Entry Rear Antenna C4321.
- Measure:

Positive Lead	Measurement / Action	Negative Lead



E157911

C4321, pin 1, component side



C4321, pin 2, component side

Is the resistance between 1 and 3 ohms?

Yes	GO to W4
No	INSTALL a new keyless entry rear antenna. REFER to: Keyless Entry Rear Antenna (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

W4 CHECK THE KEYLESS ENTRY REAR ANTENNA CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect BCM C2280D.
- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to W5

W5 CHECK THE KEYLESS ENTRY REAR ANTENNA CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.

Are the resistances greater than 10,000 ohms?

Yes	GO to W6
No	REPAIR the circuit in question.

W6 CHECK THE KEYLESS ENTRY REAR ANTENNA CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to W7
No	REPAIR the circuit in question.

W7 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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.

U0146:00

Normal Operations and Fault Conditions

The RTM communicates with the GWM over the CAN. If the RTM does not receive messages from the GWM, features such as the keyless entry can be inoperative.

RTM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0146:00	Lost Communication With Gateway "A": No Sub Type Information	Sets when the RTM detects data messages are missing from the GWM over the CAN.

Possible Causes

- Network communication concern
- RTM
- GWM

PINPOINT TEST X : U0146:00

X1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to X2
No	The system is operating normally at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

X2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, carry out a network test.

Does the GWM pass the network test?

Yes	GO to X3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

X3 CHECK FOR CHARGING SYSTEM RELATED DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, retrieve all Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Are any battery voltage or charging system related Diagnostic Trouble Codes (DTCs) retrieved?

Yes	DIAGNOSE the charging system. Refer to the appropriate section in Group 303 for the procedure.
No	GO to X4

X4 RECHECK THE RTM (RADIO TRANSCEIVER MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE: If new modules were installed prior to the DTC being set, the module configuration may be incorrectly set during PMI or the PMI may not have been carried out.

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the RTM self-test.

Is DTC U0146:00 still present?

Yes	GO to X5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

X5 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0146 SET IN OTHER MODULES

- Using a diagnostic scan tool, clear all Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Is DTC U0146 set in other modules?

Yes	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	INSTALL a new RTM. REFER to: Radio Transceiver Module (RTM) (419-10 Multifunction Electronic Modules, Removal and Installation).

U0258:87 or U1A00:00

Refer to Wiring Diagrams Cell 117 for schematic and connector information.

Normal Operation and Fault Conditions

The RTM communicates with the BCM over a LIN circuit and, when the network is awake, over the CAN.

RTM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U1A00:00	Private Communication Network: No Sub Type Information	Sets when the RTM detects a fault with the LIN circuit to the BCM.

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0258:87	Lost Communication With Radio Transceiver: Missing Message	Sets when the BCM detects a communication fault with the RTM over the LIN circuit.

Possible Causes

- Wiring, terminals or connectors
- RTM
- BCM

PINPOINT TEST Y : U0258:87 OR U1A00:00

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

Y1 CHECK IF THE RTM (RADIO TRANSCEIVER MODULE) AND THE BCM (BODY CONTROL MODULE) PASS THE NETWORK TEST

- Ignition ON.
- Using a diagnostic tool, carry out the network test.

Does the RTM and the BCM pass the network test?

Yes	GO to Y2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

Y2 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Disconnect RTM C9026.
- Disconnect BCM C2280B.

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to Y3

Y3 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO GROUND

- Connect BCM C2280B.
- Ignition OFF.
- Disconnect BCM C2280B.

Is the resistance greater than 10,000 ohms?

Yes	GO to Y4
No	REPAIR the circuit.

Y4 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

Is the resistance less than 3 ohms?

Yes	GO to Y5
No	REPAIR the circuit.

Y5 CHECK FOR CORRECT RTM (RADIO TRANSCEIVER MODULE) OPERATION

- Disconnect and inspect the RTM connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RTM connector and make sure it seats and latches correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new RTM. REFER to: Radio Transceiver Module (RTM) (419-10 Multifunction Electronic Modules, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to Y6
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.

Y6 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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.

U0140:00

Normal Operation and Fault Conditions

The DDM/ PDM communicates with the BCM over the CAN. If the DDM/ PDM does not receive messages from the BCM, features such as the puddle lamps, exterior mirror turn signal and door switch illumination can be inoperative.

DDM/ PDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0140:00	Lost Communication With Body Control Module: No Sub-Type Information	Sets when the DDM/ PDM detects data messages are missing from the BCM.

Possible Causes

- Network communication concern
- DDM/ PDM
- BCM

PINPOINT TEST Z : U0140:00

Z1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to Z2
No	The system is operating normally at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Z2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, carry out a network test.

Does the BCM pass the network test?

Yes	GO to Z3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

Z3 CHECK FOR BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the BCM self-test.

Are any voltage related Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).
No	GO to Z4

Z4 RECHECK THE DDM (DRIVER DOOR MODULE) OR PDM (PASSENGER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE: *If new modules were installed prior to the DTC being set, the module configuration may be incorrectly set during PMI or the PMI may not have been carried out.*

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the DDM/ PDM self-test.

Is DTC U0140:00 still present?

Yes	GO to Z5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Z5 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0140 SET IN OTHER MODULES

- Using a diagnostic scan tool, clear all Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Is DTC U0140 set in other modules?

Yes	  Click here to access Guided Routine (BCM).
No	INSTALL a new DDM or 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).

U0208:00

Normal Operation and Fault Conditions

The DDM/ PDM communicate with the DSM over the CAN. If the DDM/ PDM does not receive messages from the DSM, features such as the memory mirror position can be inoperative.

DDM/ PDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0208:00	Lost Communication With "Seat Control Module A": No Sub-Type Information	Sets when the DDM/ PDM detects data messages are missing from the DSM.

Possible Causes

- Network communication concern
- DDM/ PDM
- DSM

AA1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to AA2
No	The system is operating normally at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AA2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, carry out a network test.

Does the DSM pass the network test?

Yes	GO to AA3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

AA3 CHECK FOR DSM (DRIVER FRONT SEAT MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the DSM self-test.

Are any voltage related Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
No	GO to AA4

AA4 RECHECK THE DDM (DRIVER DOOR MODULE) OR PDM (PASSENGER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE: If new modules were installed prior to the DTC being set, the module configuration may be incorrectly set during PMI or the PMI may not have been carried out.

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the DDM/ PDM self-test.

Is DTC U0208:00 still present?

Yes	GO to AA5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AA5 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0208 SET IN OTHER MODULES

- Using a diagnostic scan tool, clear all Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Is DTC U0208 set in other modules?

Yes	INSTALL a new DSM. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, Removal and Installation).
No	INSTALL a new DDM or 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).

U0232:00

Normal Operation and Fault Conditions

The DDM communicates with the SODL over the CAN. If the DDM does not receive messages from the SODL, the side obstacle detection feature can be inoperative for the left side.

DDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0232:00	Lost Communication With Side Obstacle Detection Control Module - Left: No Sub-Type Information	Sets when the DDM detects data messages are missing from the SODL.

Possible Causes

- Network communication concern
- DDM
- SODL

PINPOINT TEST AB : U0232:00

AB1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to AB2
No	The system is operating normally at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AB2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, carry out a network test.

Does the SODL pass the network test?

Yes	GO to AB3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

AB3 CHECK FOR SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the SODL self-test.

Are any voltage related Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
No	GO to AB4

AB4 RECHECK THE DDM (DRIVER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE: *If new modules were installed prior to the DTC being set, the module configuration may be incorrectly set during PMI or the PMI may not have been carried out.*

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the DDM self-test.

Is DTC U0232:00 still present?

Yes	GO to AB5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AB5 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0232 SET IN OTHER MODULES

- Using a diagnostic scan tool, clear all Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Is DTC U0232 set in other modules?

Yes	INSTALL a new SODL. REFER to: Side Obstacle Detection Control Module (419-04 Side and Rear Vision, Removal and Installation).
No	INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, Removal and Installation).

U0233:00

Normal Operation and Fault Conditions

The PDM communicates with the SODR over the CAN. If the PDM does not receive messages from the SODR, the side obstacle detection feature can be inoperative for the right side.

PDM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0233:00	Lost Communication With Side Obstacle Detection Control Module - Right: No Sub-Type Information	Sets when the PDM detects data messages are missing from the SODR.

Possible Causes

- Network communication concern
- PDM
- SODR

PINPOINT TEST AC : U0233:00

AC1 VERIFY THE CUSTOMER CONCERN	
• Ignition ON. • Verify there is an observable symptom present.	
Is an observable symptom present?	
Yes	GO to AC2
No	The system is operating normally at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.
AC2 CHECK THE COMMUNICATION NETWORK	

- Using a diagnostic scan tool, carry out a network test.

Does the SODR pass the network test?

Yes	GO to AC3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

AC3 CHECK FOR SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the SODR self-test.

Are any voltage related Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
No	GO to AC4

AC4 RECHECK THE PDM (PASSENGER DOOR MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE: *If new modules were installed prior to the DTC being set, the module configuration may be incorrectly set during PMI or the PMI may not have been carried out.*

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the PDM self-test.

Is DTC U0233:00 still present?

Yes	GO to AC5
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AC5 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U0233 SET IN OTHER MODULES

- Using a diagnostic scan tool, clear all Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs) from all modules.

Is DTC U0233 set in other modules?

Yes	INSTALL a new SODR. REFER to: Side Obstacle Detection Control Module (419-04 Side and Rear Vision, Removal and Installation).
No	INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).

P1594 OR P1595

Normal Operation and Fault Conditions

When the BCM receives a request to remote start the vehicle, it first checks to make sure conditions exist to allow it to start (for example, the hood and doors closed, vehicle in PARK, no powertrain concerns). If the required conditions are correct, the BCM starts the vehicle and allows it to run for a predetermined amount of time, determined by the setting selected from the message center.

PCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
P1594	Forced Engine Shutdown - Remote Start System Fault, No Unattended Vehicle Timeout	Sets when the PCM detects the remote start has been active for more than 30 minutes continuously.
P1595	Forced Engine Shutdown - Remote Start System Fault, Transmission Range Not In Park Position	Sets when the PCM detects the remote start is active with the transmission not in PARK.

Possible Causes

- Network communication concern
- Powertrain concern

- BCM

PINPOINT TEST AD : P1594 OR P1595

AD1 CHECK FOR OTHER PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Review the results from the PCM self-test.

Are any other PCM Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all other PCM Diagnostic Trouble Codes (DTCs) first. Refer to the appropriate section in Group 303 for the procedure.
No	GO to AD2

AD2 CHECK FOR BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM self-test.

Are any BCM Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the BCM DTC Chart in this section.
No	GO to AD3

AD3 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors and make sure they seat and latch correctly.
- Operate the system and 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 TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
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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