Locks, Latches and Entry Systems — Module Controlled

Refer to Wiring Diagrams Cell 111, Keyless Entry (Illumination Entry) for schematic and connector information.

Refer to Wiring Diagrams Cell 113 for schematic and connector information.

Refer to Wiring Diagrams Cell <u>116</u> for schematic and connector information.

Special Tool(s)

	Worldwide Diagnostic System (WDS) 418-F224
ST2332-A	New Generation Star (NGS) Tester 418-F052 or equivalent diagnostic tool
	73III Automotive Meter 105-R0057 or equivalent
ST1137-A	

Principles Of Operation

CAUTION: Do not use a key, pencil or any other hard object to press the keyless entry keypad buttons. These objects may damage the keyless entry keypad buttons.

NOTE: The keyless entry transmitter will not operate with the transmission in REVERSE or DRIVE.

NOTE: The security mode operation will not function if the transmission is in gear.

NOTE: Upon installation of a new driver door module (DDM), the module must be reconfigured. Refer to <u>Section</u> <u>418-01</u>.

The DDM receives inputs from the digital transmission range (TR) sensor, ignition switch, brake switch, door lock control switches, lighting control module (LCM), keyless entry keypad and remote transmitter. The DDM outputs consists of keyless entry keypad illumination, door lock actuators, luggage compartment lid release solenoid, and LCM.

For DDM removal and installation information, refer to Section 419-10.

Inspection and Verification

NOTE: Before starting electrical diagnosis, check for mechanical binds by manually operating the door locks. Operate lock system several times from each switch while observing the operation of all door locks. Be sure battery is fully charged.

- 1. Verify the customer concern by operating the system.
- 2. Visually inspect for obvious signs of mechanical and electrical damage.

Visual Inspection Chart

Mechanical	Electrical
Binding latches	 Battery junction box (BJB) fuse(s): 8 (20A) 101 (30A) 112 (50A) 113 (50A) BJB circuit breaker 602 (20A) Central junction box (CJB) fuse(s): 15 (15A) 23 (15A) CJB circuit breaker 28 (20A) Circuitry Connectors Door lock actuator Door lock control switch Keyless entry keypad Luggage compartment lid release switch Luggage compartment lid release solenoid

- 3. If the concern remains after the inspection, connect the diagnostic tool to the data link connector (DLC) located beneath the instrument panel and select the vehicle to be tested from the diagnostic tool menu. If diagnostic tool does not communicate with the vehicle:
 - check that the program card is correctly installed.
 - check the connections to the vehicle.
 - check the ignition switch position.
- 4. If diagnostic tool still does not communicate with the vehicle, refer to the diagnostic tool manual.
- 5. Carry out the DATA LINK DIAGNOSTICS test. If diagnostic tool responds with:
 - CKT914, CKT915 or CKT70 = ALL ECUS NO RESP/NOT EQUIP, refer to Section 418-00.
 - NO RESP/NOT EQUIP for the DDM, refer to Section 419-10.
 - NO RESP/NOT EQUIP for the LCM, refer to Section 419-10.
 - SYSTEM PASSED, retrieve and record the continuous diagnostic trouble codes (DTCs), erase the continuous DTCs and carry out self-test diagnostics for the DDM and LCM.
- 6. If the DTCs retrieved are related to the concern, go to the DDM Diagnostic Trouble Code (DTC) Index or LCM Diagnostic Trouble Code (DTC) Index to continue diagnostics.
- If DTCs are retrieved that are not found in the following DDM Diagnostic Trouble Code (DTC) Index or LCM Diagnostic Trouble Code (DTC) Index, refer to the master DDM Diagnostics Trouble Code (DTC) Index or LCM Diagnostic Trouble Code (DTC) Index in <u>Section 419-10</u>.
- 8. If no DTCs related to the concern are retrieved, proceed to the Symptom Chart to continue diagnostics.

DTC	Description	Source	Action
B1352	Ignition Key in Circuit Failure	DDM	<u>Go To Pinpoint Test H</u> .
B1396	Door Lock Circuit Short to Battery	DDM	<u>Go To Pinpoint Test C</u> .
B1526	Keyless Entry Keypad Circuit Short to Ground	DDM	<u>Go To Pinpoint Test E</u> .
B1553	Luggage Compartment Lid Release Circuit Short to Ground	DDM	Go To Pinpoint Test B.
B1751	Park/Neutral Switch Circuit Short to Battery	DDM	Go To Pinpoint Test L.
B2425	Remote Keyless Entry Out of Synchronization	DDM	Go To Pinpoint Test M.

DDM Diagnostic Trouble Code (DTC) Index

LCM Diagnostic Trouble Code (DTC) Index

DTC	Description	Source	Action
B1300	Door Lock Circuit Failure	LCM	Go To Pinpoint Test N .
B1310	Door Unlock Circuit Failure	LCM	<u>Go To Pinpoint Test N</u> .
B1396	Door Lock Circuit Short to Battery	LCM	Go To Pinpoint Test N .
B1397	Door Unlock Circuit Short to Battery	LCM	Go To Pinpoint Test N .
B1677	Alarm Panic Input Circuit Failure	LCM	Go To Pinpoint Test J.
B1679	Alarm Panic Input Circuit Short to Battery	LCM	Go To Pinpoint Test J.

Symptom Chart

Condition	Possible Sources	Action
 No communication with the driver door module (DDM) 	 Battery junction box (BJB) fuse(s): 8 (20A). 112 (50A). Central junction box (CJB) circuit breaker 28 (20A) Circuitry. DDM. 	• REFER to <u>Section 419-</u> <u>10</u> .
 No communication with the lighting control module (LCM) 	 Central junction box (CJB) fuse(s): 6 (15A). 15 (15A). Circuitry. LCM. 	REFER to <u>Section 419-</u> <u>10</u> .
 All door locks are inoperative from one switch 	Circuitry.Door lock control switch.	• <u>Go To</u> <u>Pinpoint Test</u> <u>A</u> .
 The fuel filler door is inoperative 	 Battery junction box (BJB) circuit breaker 602 (20A). Circuitry. Fuel filler door release solenoid. Fuel filler door release switch. 	• <u>Go To</u> <u>Pinpoint Test</u> <u>Q</u> .
 The luggage compartment lid is inoperative 	 Battery junction box (BJB) fuse 112 (50A). BJB circuit breaker 602 (20A). Central junction box (CJB) circuit breaker 28 (20A). Circuitry. Driver door module (DDM). Luggage compartment lid release solenoid. Luggage compartment lid release switch. 	• <u>Go To</u> <u>Pinpoint Test</u> <u>B</u> .
All door locks are inoperative	 Battery junction box (BJB) fuse 113 (50A). Central junction box (CJB) fuse 23 (15A). Circuitry. Driver door module (DDM). 	• <u>Go To</u> <u>Pinpoint Test</u> <u>C</u> .

 A single/more than one door lock is inoperative 	 Circuitry. Door lock actuator. Driver door module (DDM). 	 <u>Go To</u> <u>Pinpoint Test</u> <u>D</u>.
 The doors do not lock/unlock using keyless entry keypad 	 Circuitry. Driver door module (DDM). Keyless entry keypad. 	<u>Go To</u> <u>Pinpoint Test</u> <u>E</u> .
 The doors do not lock/unlock using the remote transmitter 	 Driver door module (DDM). Remote transmitter not programmed. Remote transmitter. 	 <u>Go To</u> <u>Pinpoint Test</u> <u>F</u>.
 The auto-lock does not operate correctly 	 Circuitry. Driver door module (DDM). Lighting control module (LCM). 	• <u>Go To</u> <u>Pinpoint Test</u> <u>G</u> .
 Smart lock feature does not operate correctly/is inoperative 	 Circuitry. Driver door module (DDM). Key-in ignition switch. 	 <u>Go To</u> <u>Pinpoint Test</u> <u>H</u>.
 The luggage compartment lid is inoperative using the remote transmitter 	 Circuitry. Driver door module (DDM). Luggage compartment lid release solenoid. Luggage compartment lid release switch. Remote transmitter not programmed. Remote transmitter. 	• <u>Go To</u> <u>Pinpoint Test</u> <u>I</u> .
Panic feature is inoperative/does not operate correctly	 Circuitry. Driver door module (DDM). Lighting control module (LCM). 	• <u>Go To</u> <u>Pinpoint Test</u> <u>J</u> .
The keyless entry keypad illumination is inoperative	 Central junction box (CJB) fuse 15 (15A). Circuitry. Driver door module (DDM). Keyless entry keypad. 	• <u>Go To</u> <u>Pinpoint Test</u> <u>K</u> .

Pinpoint Tests

PINPOINT TEST A: ALL DOOR LOCKS ARE INOPERATIVE FROM ONE SWITCH

Test Step	Result / Action to Take
A1 CHECK THE SUSPECT DOOR LOCK CONTROL SWITCH	
 Key in OFF position. Disconnect: Suspect Door Lock Control Switch. Carry out the door lock control switch component test. 	Yes GO to <u>A2</u> .
Refer to Wiring Diagrams Cell <u>149</u> for schematic and connector information.	NO INSTALL a new door lock control switch.
Is the door lock control switch OK?	REFER to <u>Door Lock</u>

	<u>Control Switch</u> in this section. TEST the system for normal operation.
A2 CHECK CIRCUIT 54 (LG/YE) FOR AN OPEN	
 Measure the voltage between the driver door lock control switch C505 pin 4, circuit 54 (LG/YE), harness side and ground, or the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. Image: Control structure of the passenger door lock control switch C605 pin 4, circuit 54 (LG/YE), harness side and ground. 	Yes GO to <u>A3</u> . No REPAIR the circuit. TEST the system for normal operation.
A3 CHECK CIRCUIT 120 (PK/LG) FOR AN OPEN	
 Disconnect: DDM C519. Measure the resistance between the driver door module (DDM) C501b pin 2, circuit 120 (PK/LG), harness side and the driver door lock control switch C505 pin 3, circuit 120 (PK/LG), harness side or the DDM pin 2, circuit 120 (PK/LG), harness side and the passenger door lock control switch C605 pin 3, circuit 120 (PK/LG), harness side. 	Yes REPAIR circuit 119 (PK/YE). TEST the system for normal operation.
	No REPAIR circuit 120 (PK/LG). TEST the system for normal operation.
Is the resistance less than 5 ohms?	

PINPOINT TEST B: THE LUGGAGE COMPARTMENT LID IS INOPERATIVE

Result / Action to Take
Yes GO to <u>B2</u> .
No GO to <u>B4</u> .
Yes GO to <u>B10</u> No GO to <u>B3</u> .





B9 CHECK CIRCUIT 57 (BK) FOR AN OPEN	
 Measure the resistance between the luggage compartment lid release solenoid C430 pin 1, circuit 57 (BK), harness side and ground. Image: Compartment lid to the luggage compartment lid release solenoid C430 pin 1, circuit 57 (BK), harness side and ground. 	Yes INSTALL a new luggage compartment lid release solenoid. TEST the system for normal operation. No REPAIR the circuit. TEST the system for normal operation.
Is the resistance less than 5 ohms?	
B10 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST C: ALL DOOR LOCKS ARE INOPERATIVE

Test Step	Result / Action to Take
C1 CHECK THE SUSPECT DOOR LOCK CONTROL SWITCH	
Carry out the driver or passenger door lock control switch component test.	Yes If DTC B1396 was previously retrieved, GO to <u>C2</u> . If no DTCs were previously retrieved, GO to
information.	<u>C3</u> .
 Is the suspect door lock control switch OK? 	No INSTALL a new door lock control switch. REFER to <u>Door Lock</u> <u>Control Switch</u> in this section. CLEAR the DTCs. REPEAT the self-test.
C2 CHECK CIRCUIT 119 (PK/YE) FOR SHORT TO POWER	
 Disconnect: DDM C501b. Key in ON position. Measure the voltage between the DDM C501b pin 10, circuit 119 (PK/YE), harness side and ground. 	Yes REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test. No GO to <u>C7</u> .



Is the voltage greater than 10 volts?	
C6 CHECK CIRCUIT 117 (PK/BK) FOR AN OPEN	
 Key in OFF position. Disconnect: LH Front Door Lock Actuator C525. Measure the resistance between the DDM C501b pin 8, circuit 117 (PK/BK), harness side and the LH front door lock actuator C525 pin 2, circuit 117 (PK/BK), harness side. Is the resistance less than 5 ohms? 	Yes GO to <u>C7</u> . No REPAIR the circuit. TEST the system for normal operation.
C7 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST D: A SINGLE/MORE THAN ONE DOOR LOCK IS INOPERATIVE

Test Step	Result / Action to Take
D1 CHECK THE DRIVER DOOR LOCK FOR CORRECT OPERATION	
 Check the driver door lock for correct operation. Does the driver door lock operate correctly? 	Yes GO to <u>D5</u> .
	No GO to <u>D2</u> .
D2 CHECK THE LH FRONT DOOR LOCK ACTUATOR	
 Key in OFF position. Disconnect: LH Front Door Lock Actuator C525. Key in ON position. Measure the voltage between the LH front door lock actuator C525 pin 2, circuit 117 (PK/BK), harness side and the LH front door lock actuator C525 pin 1, circuit 163 (RD/OG), harness side, while depressing the door lock control switch to the lock and then unlock positions. 	Yes INSTALL a new LH front door lock actuator. REFER to <u>Door Lock Actuator</u> in this section. TEST the system for normal operation.
	No GO to <u>D3</u> .

1	1
Does the voltage indicate positive 10 volts in the one position and	
negative 10 volts in the opposing position?	
 Measure the voltage between the LH front door lock actuator C525 pin 1, circuit 163 (RD/OG), harness side and ground, while depressing the door lock control switch in the unlock position. 	Yes GO to <u>D4</u> . No
	REPAIR the circuit. TEST the system for normal operation.
A0012117 =	
Is the voltage greater than 10 volts?	
 Key in OFF position. Disconnect: DDM C501b. Measure the resistance between the DDM C501b pin 8, circuit 117 (PK/BK), harness side and the LH front door lock actuator C525 pin 2, circuit 117 (PK/BK), harness side. If the provided of th	Yes GO to <u>D8</u> . No REPAIR the circuit. TEST the system for normal operation.
	Yes
 Ney In OFF position. Disconnect: RH Front Door Lock Actuator C603. Key in ON position. Measure the voltage between the RH front door lock actuator C603 pin 2, circuit 117 (PK/BK), harness side and the RH front door lock actuator C603 pin 1, circuit 118 (PK/OG), harness side, while depressing the door lock control switch to the lock and then unlock positions. 	INSTALL a new door lock actuator. REFER to <u>Door</u> <u>Lock Actuator</u> in this section. TEST the system for normal operation. No GO to <u>D6</u> .



PINPOINT TEST E: THE DOORS DO NOT LOCK/UNLOCK USING THE KEYLESS ENTRY KEYPAD

Test Step	Result / Action to Take
E1 RETRIEVE DRIVER DOOR MODULE (DDM) DTCS	
 Refer to the recorded results from the DDM self-test. Is DTC B1526 retrieved? 	Yes GO to <u>E3</u> .
	No GO to <u>E2</u> .
E2 CHECK THE KEYLESS ENTRY KEYPAD PIDS	
 Enter the following diagnostic mode on the diagnostic tool: DDM PID KEY—PAD. Press each keypad button while viewing PID KEY_PAD Do the DDM PID values agree with the keypad button positions? 	Yes GO to <u>E7</u> . No GO to <u>E3</u> .
E3 CHECK CIRCUITS 78 (LB/YE), 79 (LG/RD), 121 (YE/BK) FOR RESISTANCE TO GROUND	
 Key in OFF position. Disconnect: DDM C501a. Disconnect: DDM C501b. Measure the resistance between the DDM C501a/C501b harness side and ground as follows: 	Yes GO to <u>E4</u> . No GO to <u>E5</u> .
DDM C501a/C501b Circuit	
pin 11 78 (LB/YE)	
pin 12 79 (LG/RD)	
pin 9 121 (YE/BK)	
 A0024855 Is any resistance less than 10,000 ohms? 	
E4 CHECK CIRCUITS 78 (LB/YE), 79 (LG/RD), 121 (YE/BK)	
 Disconnect: Keyless Entry Keypad C530. Measure the resistance between the DDM C501a/C501b harness side and ground as follows: 	Yes REPAIR the circuit(s). CLEAR the DTCs. REPEAT the self-test.
DDM C501a/C501b Circuit pin 11 78 (LB/YE) pin 12 79 (LG/RD) pin 9 121 (YE/BK)	No INSTALL a new keyless entry keypad. REFER to <u>Keyless Entry</u> <u>Keypad</u> in this section. TEST the system for normal operation.
l	l



- Connect all DDM connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- Is the concern still present?

No

The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST F: THE DOORS DO NOT LOCK/UNLOCK USING THE REMOTE TRANSMITTER

Test Step	Result / Action to Take
F1 CHECK THE DOOR LOCK OPERATION	
 Check the door lock operation by depressing the door lock control switch in the lock button. Do the door locks operate? 	Yes GO to <u>F2</u> . No <u>Go To Pinpoint Test C</u> .
F2 CHECK THE REMOTE TRANSMITTER	
 Connect the diagnostic tool. Key in ON position. Depress the unlock button on the remote transmitter. Check the driver door module (DDM) PID TIC/DATA for the last remote transmitter signal received. Does the last remote transmitter signal received indicate UNLOCK? 	Yes GO to <u>F3</u> . No PROGRAM the remote transmitter. REFER to <u>Remote</u> <u>Transmitter Programming</u> in this section. TEST the system for normal operation.
F3 CHECK THE TIC/DATA FOR LOCK	
 Depress the lock button on the remote transmitter. Check the DDM PID TIC/DATA for the last remote transmitter signal received. Does the last remote transmitter signal received indicate LOCK? 	Yes GO to <u>F4</u> . No PROGRAM the remote transmitter. REFER to <u>Remote</u> <u>Transmitter Programming</u> in this section. TEST the system for normal operation.
F4 RESET THE DDM	
 Disconnect the battery for at least 5 minutes. Refer to <u>Section 414-01</u>. Reconnect the battery after 5 minutes and activate the affected key fob repeatedly, 8-10 times. Does the affected key fob operate correctly? 	Yes The system is operating correctly. TEST the system for normal operation. No GO to <u>F5</u> .
F5 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST G: THE AUTO-LOCK DOES NOT OPERATE CORRECTLY

Test Step	Result / Action to Take
G1 CHECK THE DIGITAL TRANSMISSION RANGE (TR) SENSOR INPUT	
 Close all doors. Press and release the brake pedal. Key in ON position. Do all the doors lock? 	Yes REPAIR circuit 33 (WH/PK). TEST the system for normal operation. No GO to <u>G2</u> .
G2 CHECK THE AUTO-LOCKS	
 Key in ON position. Close all doors. Shift the transmission range selector to REVERSE or DRIVE. Press and release the brake pedal. Do all of the doors lock? 	Yes GO to <u>G13</u> . No MAKE SURE the auto-lock feature is enabled. REFER to <u>Autolock and</u> <u>Horn Chirp Programming</u> in this section. TEST the system for normal operation. If the auto-locks still do not operate, GO to <u>G3</u> .
G3 CHECK THE COURTESY LAMPS FOR CORRECT OPERATION	
 Check the courtesy lamps for correct operation by closing all the doors, placing the light switch in the OFF position, and waiting for one minute. Are the courtesy lamps illuminated? 	Yes REFER to <u>Section 417-02</u> . No GO to <u>G4</u> .
G4 CHECK THE DRIVER DOOR MODULE (DDM) PID D_DR_DD	
 Close all the doors. Monitor the DDM PID D_DR_DD. Does the DDM PID D_DR_DD indicate AJAR? 	Yes GO to <u>G5</u> . No GO to <u>G6</u> .
G5 CHECK THE LIGHTING CONTROL MODULE (LCM)	
 Key in OFF position. Disconnect: LCM C2145a. Close all the doors. Monitor the DDM PID D_DR_DD. Does the DDM PID D_DR_DD indicate ajar? 	Yes REPAIR circuit 344 (BK). TEST the system for normal operation. No GO to <u>G17</u> .
G6 CHECK THE BRAKE PEDAL POSITION (BPP) PID	
 Depress the brake pedal. Monitor the DDM PID BPP. Does the DDM PID BPP indicate ON? 	Yes GO to <u>G9</u> . No GO to <u>G7</u> .
G7 CHECK CIRCUIT 569 (DG) FOR AN OPEN	
 Key in OFF position. Disconnect: DDM C501a. Disconnect: CJB Fuse 19 (15A). Measure the resistance between the DDM C501a pin 8, circuit 569 (DG), harness side and the central junction box (CJB) fuse 19 (15A), circuit 569 (DG), harness side. 	Yes GO to <u>G8</u> . No REPAIR the circuit. TEST the system for normal operation.



G12 CHECK INSTRUMENT CLUSTER FOR THE DOOR AJAR INDICATOR	
 Connect: LCM C2145a. Open the driver door. Check the instrument cluster for the door ajar indicator to be illuminated. 	Yes GO to <u>G16</u> . No
Is the DOOR AJAR indicator illuminated?	the system for normal operation.
G13 CHECK THE DOOR LOCK OPERATION	
 Key in ON position. Shift the transmission range selector lever to REVERSE or DRIVE. 	Yes GO to <u>G15</u> .
 Open and close the driver door, and press and release the brake pedal. Open and close the passenger doors, and press and release the brake pedal. 	No GO to <u>G14</u> .
 Do the doors lock after each door is closed and the brake pedal is depressed and released? 	
G14 CHECK THE COURTESY LAMPS	
 Open and close the door that did not trigger the auto-locks. Do the courtesy lamps turn on and off when the door is opened then closed? 	Yes GO to <u>G15</u> .
	No REFER to <u>Section 417-02</u> .
G15 CHECK CIRCUIT 569 (DG) FOR SHORT TO GROUND	
 Disconnect: BPP Switch C278. Disconnect: DDM C501a. Measure the resistance between the DDM C501a pin 8, circuit 569 (DG), harness side and ground. 	Yes INSTALL a new BPP switch. TEST the system for normal operation.
	NO REPAIR the circuit. TEST the system for normal operation.
Is the resistance less than 5 ohms?	
G16 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test.
 correctly. Operate the system and verify the concern is still present. Is the concern still present? 	No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.
G17 CHECK THE LCM FOR CORRECT OPERATION	
 Disconnect all LCM connectors. Check for: corrosion pushed-out pins Connect all LCM connectors and make sure they seat correctly. 	Yes INSTALL a new LCM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test.

- Operate the system and verify the concern is still present.
 Is the concern still present?

The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST H: THE SMARTLOCK DOES NOT OPERATE CORRECTLY

Test Step	Result / Action to Take
H1 CHECK KEY-IN-IGNITION SWITCH OPERATION	
 Insert the key in the ignition. Key in OFF position. Open the driver door. Does the chime sound? 	Yes GO to <u>H4</u> . No GO to <u>H2</u> .
H2 VERIFY KEY-IN-IGNITION SWITCH FUNCTIONALITY	
 Make sure the key is still in the ignition and the ignition switch is OFF. Disconnect: Key-in-Ignition Switch C218c. Connect a jumper wire between the key-in-ignition switch C218c pin 4, circuit 158 (BK/PK), harness side and ground. 	Yes INSTALL a new key-in-ignition switch. REFER to <u>Section 211-</u> 05. TEST the system for normal operation.
	No GO to <u>H3</u> .
A0012186 🛓	
 Open the driver door. Does the chime sound?	
H3 CHECK LIGHTING CONTROL MODULE (LCM) CIRCUIT 158 (BK/PK) FOR AN OPEN	
 Disconnect: LCM C2145c. Measure the resistance between the key-in-ignition switch C218c pin 4, circuit 158 (BK/PK), harness side and the LCM C2145c pin 3, circuit 158 (BK/PK), harness side. Is the resistance less than 5 ohms? 	Yes GO to <u>H4</u> . No REPAIR the circuit. TEST the system for normal operation.
H4 CHECK CIRCUIT 158 (BK/PK) FOR AN OPEN BETWEEN THE KEY-IN-IGNITION SWITCH AND THE DRIVER DOOR MODULE (DDM)	
 Disconnect: DDM C501b. Measure the resistance between the key-in-ignition switch C218c pin 4, circuit 158 (BK/PK), harness side and the DDM C501b pin 12, circuit 158 (BK/PK), harness side. 	Yes GO to <u>H5</u> . No



PINPOINT TEST I: THE LUGGAGE COMPARTMENT LID IS INOPERATIVE USING THE REMOTE TRANSMITTER

Test Step	Result / Action to Take
I1 CHECK THE LUGGAGE COMPARTMENT LID RELEASE SWITCH OPERATION	
 Depress the luggage compartment lid release switch. Does the luggage compartment lid open? 	Yes GO to <u>I8</u> .
	No GO to <u>I2</u> .
I2 CHECK THE LUGGAGE COMPARTMENT LID RELEASE SWITCH CIRCUITRY	
 Key in OFF position. Disconnect: Driver Door Module (DDM) C501b. Magazine the registered between the DDM C501b pin 12, sizewith 	Yes GO to <u>I5</u> .
 Measure the resistance between the DDM C501b pin 13, circuit 26 (WH/VT), harness side and ground, while depressing the luggage compartment lid release switch. 	No GO to <u>I3</u> .
GN3074-A	
Is the resistance less than 5 ohms?	
I3 CHECK CIRCUIT 26 (WH/VT) FOR AN OPEN	
 Disconnect: Luggage Compartment Lid Release Switch C534. Measure the resistance between the DDM C501b pin 13, circuit 26 (WH/VT), harness side and the luggage compartment lid 	Yes GO to <u>I4</u> .

release switch C534 pin 1, circuit 26 (WH/VT), harness side.	No REPAIR the circuit. TEST the system for normal operation.
Is the resistance less than 5 ohms?	
I4 CHECK CIRCUIT 57 (BK) FOR AN OPEN	Maa
 Measure the resistance between the luggage compartment lid release switch C534 pin 2, circuit 57 (BK), harness side and ground. 	Yes INSTALL a new luggage compartment lid release switch. TEST the system for normal operation.
	No REPAIR the circuit. TEST the system for normal operation.
GN3076-A	
Is the resistance less than 5 ohms?	
CIRCUITRY	
 Momentarily connect a fused (10A) jumper wire between the positive battery post and the DDM C501b pin 7, circuit 84 (VT/YE) harness side 	Yes GO to <u>I9</u> .
(() , 2), hancee elder	No GO to 16
GN3077-A	
I6 CHECK CIRCUIT 84 (VT/YE) FOR AN OPEN	
 Disconnect: Luggage Compartment Lid Release Solenoid C430. Measure the resistance between the DDM C501b pin 7, circuit 84 (VT/YE), harness side and the luggage compartment lid release solenoid C430 pin 2, circuit 84 (VT/YE), harness side. 	Yes GO to <u>I7</u> . No REPAIR the circuit. TEST the system for normal operation.

GN3078-A	
Is the resistance less than 5 ohms?	
I7 CHECK CIRCUIT 57 (BK) FOR AN OPEN	
 Measure the resistance between the luggage compartment lid release solenoid C430 pin 3, circuit 57 (BK), harness side and ground. 	Yes INSTALL a new luggage compartment lid release solenoid. TEST the system for normal operation. No REPAIR the circuit. TEST the system for normal operation.
GN3079 -A Is the resistance less than 5 ohms? 	
18 PROGRAM THE REMOTE TRANSMITTER	
 Program the remote transmitter. Refer to <u>Remote Transmitter</u> <u>Programming</u> in this section. Depress the remote transmitter luggage compartment lid release button. Does the luggage compartment lid open? 	Yes System is OK. TEST the system for normal operation. No GO to 19.
I9 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST J: PANIC FEATURE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

Test Step	Result / Action to Take
J1 RETRIEVE LIGHTING CONTROL MODULE (LCM) DTCS	
 Enter the following diagnostic mode on the diagnostic tool: Retrieve LCM DTCs. Are any DTCs retrieved? 	Yes If DTC B1677 or DTC B1679, GO to $\underline{J2}$. If any other DTC is retrieved, GO to the LCM Diagnostic Trouble Code (DTC) Index.

	NO GO to <u>J3</u> .
J2 CHECK CIRCUIT 340 (RD/LB)	
 Key in OFF position. Disconnect: LCM C2145c. Disconnect: Driver Door Module (DDM) C501a. Measure the resistance between the LCM C2145c pin 14, circuit 340 (RD/LB), harness side and the DDM C501a pin 3, circuit 340 (RD/LB), harness side; and between the LCM C2145c pin 14, circuit 340 (RD/LB), harness side and ground. 	Yes GO to <u>J8</u> . No REPAIR the circuit. TEST the system for normal operation.
 GK8933-A Is the resistance less than 5 ohms between the LCM and DDM; and greater than 10,000 ohms between the LCM and ground? 	
J3 CHECK THE PANIC FEATURE FROM THE SECOND REMOTE	
 Depress the panic button on the second remote transmitter. Does the horn sound? 	Yes GO to <u>J4</u> .
	No GO to <u>J5</u> .
J4 CHECK THE DOOR LOCK OPERATION FROM THE FIRST REMOTE TRANSMITTER	
 Depress the lock and unlock buttons on the first remote transmitter. Do the locks lock and unlock? 	Yes PROGRAM the remote transmitter. REFER to <u>Remote Transmitter</u> <u>Programming</u> in this section. TEST the system for normal operation.
J5 CHECK HORN OPERATION	<u>corormponitrooto</u> .
 Depress the horn switch. Does the horn sound? 	Yes GO to <u>J6</u> .
	No REFER to <u>Section 413-06</u> .
J6 CHECK HORN CIRCUIT OUTPUT FROM THE LCM	
 Trigger the LCM active command HORN ON. Did the horn sound? 	Yes GO to <u>J9</u> .
	No GO to <u>J7</u> .
J7 CHECK CIRCUIT 1 (DB) FOR AN OPEN	
 Key in OFF position. Disconnect: LCM C2145a. Disconnect: Horn Relay. Measure the resistance between the LCM C2145a pin 4, circuit 1 	Yes GO to <u>J8</u> . No

(DB), harness side and horn relay pin 85, circuit 1 (DB), harness side.	REPAIR the circuit. TEST the system for normal operation.
J8 CHECK THE LCM FOR CORRECT OPERATION	
 Disconnect all LCM connectors. Check for: corrosion pushed-out pins Connect all LCM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new LCM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.
J9 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST K: THE KEYLESS ENTRY KEYPAD ILLUMINATION IS INOPERATIVE

Test Step	Result / Action to Take
K1 CHECK DRIVER DOOR MODULE (DDM) INPUT TO THE KEYLESS ENTRY KEYPAD	
 Disconnect: Keyless Entry Keypad C530. Enter the following diagnostic mode on the diagnostic tool: DDM active command for KEYPAD BACKLIGHTING. Measure the voltage between the keyless entry keypad C530 pin 2, circuit 66 (LB), harness side and ground. 	Yes GO to <u>K2</u> . No GO to <u>K3</u> .



Is the resistance less than 5 ohms?	
K5 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

PINPOINT TEST L: DTC B1751 — PARK/NEUTRAL SWITCH CIRCUIT SHORT TO BATTERY (DRIVER DOOR MODULE [DDM])

Test Step	Result / Action to Take
L1 CHECK FOR DTC B1751 WITH THE TRANSMISSION RANGE SELECTOR IN PARK OR NEUTRAL	
 Place the transmission range selector lever in PARK or NEUTRAL. Enter the following diagnostic mode on the diagnostic tool: CLEAR the DTCs. Enter the following diagnostic mode on the diagnostic tool: Retrieve DDM DTCs. Is DTC B1751 retrieved? 	Yes GO to <u>L2</u> . No System is OK. CLEAR the DTCs. REPEAT the self-test.
L2 MONITOR THE DDM PID PK/N_SW	1
 Monitor the DDM PID PK/N_SW while moving the transmission selector switch through its full range. Does the DDM PID PK/N_SW indicate PARK or NEUTRAL? 	Yes GO to <u>L4</u> . No GO to <u>L3</u> .
L3 CHECK CIRCUIT 689 (DB) FOR AN OPEN	
 Key in OFF position. Disconnect: DDM C501a. Measure the voltage between the DDM C501a pin 10, circuit 689 (DB), harness side and ground, while momentarily placing the ignition switch in the START position. If the ignition is the voltage greater than 10 volts? 	Yes GO to <u>L4</u> . No REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.
L4 CHECK THE DDM FOR CORRECT OPERATION	_
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly

PINPOINT TEST M: DTC B2425 - REMOTE KEYLESS ENTRY OUT OF SYNCHRONIZATION (DDM)

Test Step	Result / Action to Take
M1 CHECK THE REMOTE TRANSMITTER	
 Depress and release any button on the remote transmitter in question consecutively four times. Does the remote transmitter operate correctly? 	Yes System is OK. CLEAR the DTCs. REPEAT the self-test. No GO to <u>M2</u> .
M2 CHECK FOR SECOND REMOTE TRANSMITTER	
 Check for a second remote transmitter. Is there a second remote transmitter? 	Yes GO to <u>M4</u> . No GO to <u>M3</u> .
M3 RESYNCHRONIZE THE REMOTE TRANSMITTER WITH THE SECOND REMOTE TRANSMITTER	
 Depress a button on the known operational remote transmitter. Within 30 seconds, depress a button on the remote transmitter in question. Does the remote transmitter operate correctly? 	Yes System is OK. CLEAR the DTCs. REPEAT the self-test. No GO to <u>M4</u> .
M4 REPROGRAM THE REMOTE TRANSMITTER	
 Program the remote transmitter. Refer to <u>Remote Transmitter</u> <u>Programming</u> in this section. Does the remote transmitter operate correctly? 	Yes CLEAR the DTCs. REPEAT the self-test. INFORM the customer that any additional remote transmitters not present during reprogramming mode will not operate with the vehicle. All remote transmitters must be programmed at the same time.

PINPOINT TEST N: DTC B1300, DTC B1310, DTC B1396, DTC B1397 DOOR UNLOCK CIRCUIT FAILURE

Test Step	Result / Action to Take
N1 CHECK THE LIGHTING CONTROL MODULE (LCM) INPUT FOR SHORT TO POWER	
 Key in OFF position. Disconnect: LCM C2145b. Key in ON position. Measure the voltage between the LCM C2145b pin 9, circuit 117 (PK/BK), harness side and ground. 	Yes GO to <u>N2</u> . No If DTC B1300 or B1310 is retrieved, GO to <u>N3</u> . If DTC B1396 or B1397 is

	retrieved, GO to <u>N4</u> .
GN2641-A	
N2 CHECK CIRCUIT 117 (PK/BK) FOR SHORT TO POWER	
 Key in OFF position. Disconnect: Driver Door Module (DDM) C501b. Key in ON position. Measure the voltage between the LCM C2145 pin 9, circuit 117 (PK/BK), harness side and ground. 	Yes REPAIR the circuit. CLEAR the DTCs. REPEAT the self- test. No GO to <u>N5</u> .
GN2641-A	
Is any voltage present?	
 Key in OFF position. Disconnect: DDM C501b. Measure the resistance between the LCM C2145b pin 9, circuit 117 (PK/BK), harness side and the DDM C501b pin 8, circuit 117 (PK/BK), harness side; and between the LCM C2145b pin 9, circuit 117 (PK/BK), harness side and ground. 	Yes System is OK. CLEAR the DTCs. REPEAT the self- test. No REPAIR the circuit. CLEAR the DTCs. REPEAT the self- test.
Is the resistance less than 5 ohms between the LCM and DDM; and greater than 10,000 ohms between LCM and ground?	
N4 CHECK FOR DTC B1396	
 Enter the following diagnostic mode on the diagnostic tool: Clear the DTCs. Enter the following diagnostic mode on the diagnostic tool: Retrieve DTCs. Is DTC B1396 or B1397 retrieved? 	Yes GO to <u>N7</u> . No System is OK. CLEAR the DTCs. REPEAT the self- test.
N5 CHECK CIRCUIT 163 (RD/OG) FOR SHORT TO POWER	
Key in OFF position.Disconnect: LH Front Door Lock Actuator C525.	Yes REPAIR the circuit. CLEAR

 Key in ON position. Measure the voltage between the DDM C501b pin 5, circuit 163 (RD/OG), harness side and ground. Image: Contract of the second state of the s	the DTCs. REPEAT the self- test. No GO to <u>N6</u> .
N6 CHECK CIRCUIT 118 (PK/OG) FOR SHORT TO POWER	
 Key in OFF position. Disconnect: RH Front Door Lock Actuator C603. Disconnect: LH Rear Door Lock Actuator C704. Disconnect: RH Rear Door Lock Actuator C804. Key in ON position. Measure the voltage between the DDM C501b pin 3, circuit 118 (PK/OG), harness side and ground. 	Yes REPAIR the circuit. CLEAR the DTCs. REPEAT the self- test. No GO to <u>N8</u> .
GN3059-A	
 Disconnect all LCM connectors. Check for: corrosion pushed-out pins Connect all LCM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new LCM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or
	corroded connector. CLEAR the DTCs. REPEAT the self-
	test.
N8 CHECK THE DDM FOR CORRECT OPERATION	
 Disconnect all DDM connectors. Check for: corrosion pushed-out pins Connect all DDM connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	Yes INSTALL a new DDM. REFER to <u>Section 419-10</u> . CLEAR the DTCs. REPEAT the self-test. No The system is operating correctly at this time. Concern may have been caused by a loose or

corroded connector. CLEAR the DTCs. REPEAT the self-test.