




Locks, Latches and Entry Systems

Special Tool(s)

 <p>ST1137-A</p>	73III Automotive Meter 105-R0057 or equivalent
 <p>ST2834-A</p>	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool
 <p>ST2574-A</p>	Flex Probe Kit 105-R025C or equivalent

Material

Item	Specification
Multi-Purpose Grease XG-4 and/or XL-5	ESB-M1C93-B
Penetrating and Lock Lubricant (US); Penetrating Fluid (Canada) XL-1 (US); CXC-51-A (Canada)	—

Principles of Operation

NOTE: The Smart Junction Box (SJB) is also known as the Generic Electronic Module (GEM).

Power Locks

The power lock/unlock feature commands both of the vehicle doors to lock or unlock upon a command from the door lock control switch or Remote Keyless Entry (RKE) transmitter. Power locking and unlocking of the doors functions independently of the key position, vehicle speed, or transmission position. The **SJB** activates the power door lock relays to supply the correct power and grounds for the door lock actuators.

Remote Keyless Entry (RKE)

The **SJB** receives input from a programmed **RKE** transmitter, through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) antenna. The antenna is located externally on the **SJB** and is not serviceable. Based on the input from the **RKE** transmitter, the **SJB**:

- Unlocks the driver door
- Unlocks both doors
- Locks both doors
- Releases the luggage compartment lid

- Locks both doors and flashes the turn signal lamps if all doors (hood and luggage compartment lid if equipped with alarm) are closed
- Activates/deactivates the panic alarm
- Commands the interior lamps on when unlocking and off when locking
- Sounds the horn once and flashes the turn signals when LOCK is pressed twice within 3 seconds, and the doors (hood and luggage compartment lid if equipped with alarm) are closed
- Sounds the horn twice when LOCK is pressed within 3 seconds if any door (hood and luggage compartment lid if equipped with alarm) is ajar
- Arms/disarms the alarm system (if equipped)

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none"> • Latches 	<ul style="list-style-type: none"> • Bussed Electrical Center (BEC) fuse(s): <ul style="list-style-type: none"> ▪ 57 (20A) ▪ 62 (20A) • Wiring, terminals or connectors • Remote Keyless Entry (RKE) transmitter • Door lock control switch(es) • Smart Junction Box (SJB)

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **NOTE:** Make sure to use the latest scan tool software release.

If the cause is not visually evident, connect the scan tool to the Data Link Connector (DLC).

5. **NOTE:** The Vehicle Communication Module (VCM) LED prove-out confirms power and ground from the [DLC](#) are provided to the [VCM](#).

If the scan tool does not communicate with the [VCM](#):

- Check the [VCM](#) connection to the vehicle.
- Check the scan tool connection to the [VCM](#).
- Refer to [Section 418-00](#), No Power To The Scan Tool, to diagnose no communication with the scan tool.

6. If the scan tool does not communicate with the vehicle:
 - Verify the ignition key is in the ON position.
 - Verify the scan tool operation with a known good vehicle.
 - Refer to [Section 418-00](#) to diagnose no response from the PCM.
7. Carry out the network test.
 - If the scan tool responds with no communication for one or more modules, refer to [Section 418-00](#).
 - If the network test passes, retrieve and record the continuous memory DTCs.
8. Clear the continuous DTCs and carry out the self-test diagnostics for the [SJB](#).
9. If the DTCs retrieved are related to the concern, go to DTC Charts. For all other DTCs, refer to the Diagnostic Trouble Code (DTC) Chart in [Section 419-10](#).

10. If no DTCs related to the concern are retrieved, GO to [Symptom Chart](#).

DTC Charts

Smart Junction Box (SJB) DTC Chart

DTC	Description	Action
B1300	Power Door Lock Circuit Failure	GO to Pinpoint Test F .
B1301	Power Door Lock Circuit Open	GO to Pinpoint Test A .
B1309	Power Door Lock Circuit Short to Ground	GO to Pinpoint Test E .
B1310	Power Door Unlock Circuit Failure	GO to Pinpoint Test F .
B1341	Power Door Unlock Circuit Short To Ground	GO to Pinpoint Test E .
B1551	Latch/Decklid Release Circuit Failure	GO to Pinpoint Test G .
B1982	Driver's Door Unlock Relay Circuit Failure	GO to Pinpoint Test F .
B2276	Less Than 2 Transmitters Programmed	PROGRAM the Remote Keyless Entry (RKE) transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section.
B2425	Remote Keyless Entry Out of Synchronization	GO to Pinpoint Test H .
B2474	Passenger Door Lock Switch Ckt Short to Ground	GO to Pinpoint Test E .
B2475	Passenger Door Unlock Switch Circuit Short to Ground	GO to Pinpoint Test E .
All other DTCs	—	REFER to the Diagnostic Trouble Code (DTC) Chart in Section 419-10 .

Symptom Chart

Electrical Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none"> No communication with the Smart Junction Box (SJB) 	<ul style="list-style-type: none"> Fuse(s) Wiring, terminals or connectors SJB 	<ul style="list-style-type: none"> REFER to Section 418-00.
<ul style="list-style-type: none"> All door locks are inoperative 	<ul style="list-style-type: none"> Wiring, terminals or connectors SJB 	<ul style="list-style-type: none"> GO to Pinpoint Test A.
<ul style="list-style-type: none"> A single door lock is inoperative 	<ul style="list-style-type: none"> Wiring, terminals or connectors Door lock actuator SJB 	<ul style="list-style-type: none"> GO to Pinpoint Test B.
<ul style="list-style-type: none"> The door locks operate only one way 	<ul style="list-style-type: none"> Wiring, terminals or connectors Door lock control switch SJB 	<ul style="list-style-type: none"> GO to Pinpoint Test C.

<ul style="list-style-type: none"> • All door locks are inoperative from one switch 	<ul style="list-style-type: none"> • Wiring, terminals or connectors • Door lock control switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test D.
<ul style="list-style-type: none"> • The luggage compartment lid release is inoperative/does not operate correctly 	<ul style="list-style-type: none"> • Fuse • Wiring, terminals or connectors • Remote Keyless Entry (RKE) transmitter • Luggage compartment lid release relay • Luggage compartment lid release solenoid • Vehicle speed signal • Bussed Electrical Center (BEC) • SJB 	<ul style="list-style-type: none"> • GO to Pinpoint Test G.
<ul style="list-style-type: none"> • The Remote Keyless Entry (RKE) transmitter is inoperative 	<ul style="list-style-type: none"> • RKE transmitter battery • RKE transmitter • RKE transmitter button pressed a substantial amount of times while outside the range of the vehicle • RKE transmitter programming • SJB 	<ul style="list-style-type: none"> • GO to Pinpoint Test H.
<ul style="list-style-type: none"> • An individual button/feature is inoperative from the Remote Keyless Entry (RKE) transmitter 	<ul style="list-style-type: none"> • All door locks • Horn system • Luggage compartment lid latch • Turn signals • RKE transmitter 	<ul style="list-style-type: none"> • GO to Pinpoint Test I.
<ul style="list-style-type: none"> • The Remote Keyless Entry (RKE) transmitter has poor range performance 	<ul style="list-style-type: none"> • Aftermarket systems • High power devices • RKE transmitter • RKE transmitter battery • Tire Pressure Monitoring System (TPMS)/ RKE antenna • TV/radio transmission towers • SJB 	<ul style="list-style-type: none"> • GO to Pinpoint Test J.
<ul style="list-style-type: none"> • The autolock does not operate correctly 	<ul style="list-style-type: none"> • SJB 	<ul style="list-style-type: none"> • GO to Pinpoint Test K.
<ul style="list-style-type: none"> • The smart unlock does not operate correctly 	<ul style="list-style-type: none"> • SJB 	<ul style="list-style-type: none"> • GO to Pinpoint Test L.
<ul style="list-style-type: none"> • The power door unlock inhibit feature is inoperative 	<ul style="list-style-type: none"> • Unlock inhibit deactivated • SJB 	<ul style="list-style-type: none"> • ACTIVATE the power door trim switch inhibit. CARRY OUT Unlock Inhibit Programming. REFER to Handles, Locks.

[Latches and Entry Systems](#) in this section. If the concern is still present, INSTALL a new [SJB](#). REFER to [Section 419-10](#). TEST the system for normal operation.

Mechanical Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none"> • Hard to open/close door from either door handle 	<ul style="list-style-type: none"> • Door alignment • Door hinges • Striker adjustment • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test M.
<ul style="list-style-type: none"> • A door is difficult/does not open from the exterior door handle 	<ul style="list-style-type: none"> • Broken or binding linkage • Exterior door handle to latch rod adjustment • Exterior door handle • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test N.
<ul style="list-style-type: none"> • A door is difficult/does not open from the interior door handle 	<ul style="list-style-type: none"> • Broken or binding cable/linkage • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test O.
<ul style="list-style-type: none"> • Exterior door release handle sticks 	<ul style="list-style-type: none"> • Binding linkage • Broken handle return spring • Exterior door handle to latch rod adjustment • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test P.
<ul style="list-style-type: none"> • Interior door release handle sticks 	<ul style="list-style-type: none"> • Binding cable • Broken handle return spring • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test Q.
<ul style="list-style-type: none"> • Manual interior lock/unlock rod inoperative 	<ul style="list-style-type: none"> • Bent or binding lock rod • Door latch 	<ul style="list-style-type: none"> • Operate the door lock rod manually while observing the door lock rod for any binding or if the rod is bent. <ul style="list-style-type: none"> ■ If the rod is bent or damaged, REPAIR as necessary. TEST the system for normal operation. ■ If the rod is OK, INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.
<ul style="list-style-type: none"> • Squeak/rattle/chucking noise from door 	<ul style="list-style-type: none"> • Door alignment • Striker adjustment • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test R.
<ul style="list-style-type: none"> • Manual door lock cylinder inoperative 	<ul style="list-style-type: none"> • Bent or binding lock rod and lever • Door lock cylinder • Door latch 	<ul style="list-style-type: none"> • GO to Pinpoint Test S.

<ul style="list-style-type: none"> • Unable to remove the key from the ignition lock cylinder 	<ul style="list-style-type: none"> • Wiring, terminals or connectors • Transmission selector lever • Binding steering column components • Ignition lock cylinder • Ignition switch 	<ul style="list-style-type: none"> • GO to Pinpoint Test T.
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Pinpoint Tests

Pinpoint Test A: All Door Locks are Inoperative

Refer to Wiring Diagrams Cell [110](#), Power Door Locks for schematic and connector information.

Normal Operation

The Bussed Electrical Center (BEC) fuse 62 (20A) provides voltage for the power lock/unlock system. Ground for the power lock/unlock system is provided by circuit 1205 (BK) to the Smart Junction Box (SJB). The [SJB](#) contains internal relays that are energized depending on input received.

When the [SJB](#) receives a door lock control switch lock command, the door lock relay is energized, supplying voltage to the door lock actuators through circuits 1328 (RD/OG) and 1383 (RD). The actuators are grounded through circuits 1329 (YE) and 1384 (LB). When the [SJB](#) receives an unlock request, the unlock relays are energized, and voltage and ground are reversed on the previously listed circuits.

- DTC B1301 (Power Door Lock Circuit Open) — a continuous or on-demand DTC that sets if the [SJB](#) detects an open on ground circuit 1205 (BK).

This pinpoint test is intended to diagnose the following:

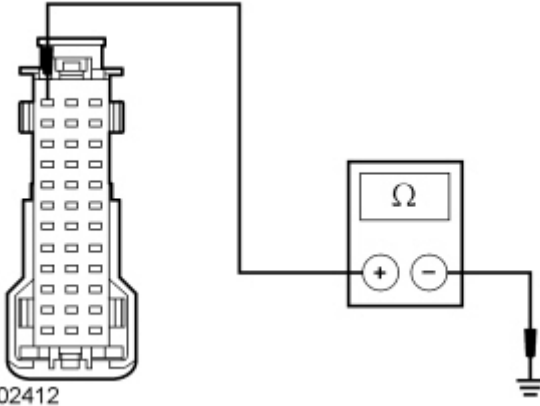
- Wiring, terminals or connectors
- [SJB](#)

PINPOINT TEST A: ALL DOOR LOCKS ARE INOPERATIVE

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

NOTE: Failure to disconnect the battery when instructed will result in false resistance readings. Refer to [Section 414-01](#).

Test Step	Result / Action to Take
A1 RETRIEVE THE RECORDED DTCs FROM BOTH THE CONTINUOUS AND ON-DEMAND SJB SELF-TESTS	
<ul style="list-style-type: none"> • Check for recorded SJB DTCs from the continuous and on-demand self-tests. • Are any DTCs recorded? 	<p>Yes For DTC B1301, GO to A3.</p> <p>For DTCs B1300, B1310 and B1982, GO to Pinpoint Test E.</p> <p>For all other DTCs, REFER to DTC Charts in this section.</p>

	<p>No GO to A2.</p>
<p>A2 VERIFY THE OPERATION OF THE LEFT AND RIGHT DOOR LOCK CONTROL SWITCHES</p> <ul style="list-style-type: none"> Press the lock and unlock button of both the left and the right door lock control switches while observing the door lock operation. Are the door locks inoperative from both switches? 	<p>Yes GO to A3.</p> <p>No GO to Pinpoint Test D.</p>
<p>A3 CHECK CIRCUIT 1205 (BK) FOR AN OPEN</p> <ul style="list-style-type: none"> Disconnect: Negative Battery Cable . Ignition OFF. Disconnect: SJB C2280a . Measure the resistance between the SJB C2280a-1, circuit 1205 (BK), harness side and ground. 	<p>Yes GO to A4.</p> <p>No REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.</p>
 <p>N0002412</p> <ul style="list-style-type: none"> Is the resistance less than 5 ohms? 	
<p>A4 CHECK FOR CORRECT SJB OPERATION</p> <ul style="list-style-type: none"> Disconnect all the SJB connectors. Check for: <ul style="list-style-type: none"> corrosion damaged pins pushed-out pins Connect all the SJB connectors and make sure they seat correctly. Operate the system and verify the concern is still present. Is the concern still present? 	<p>Yes INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

Pinpoint Test B: A Single Door Lock is Inoperative

Refer to Wiring Diagrams Cell [110](#), Power Door Locks for schematic and connector information.

Normal Operation

The Bussed Electrical Center (BEC) fuse 62 (20A) provides voltage for the power lock/unlock system. Ground for the power lock/unlock system is provided by circuit 1205 (BK) to the Smart Junction Box (SJB). The [SJB](#) contains internal relays that are energized depending on input received.

When the [SJB](#) receives a door lock control switch lock command, the door lock relay is energized, supplying voltage to the door lock actuators through circuits 1328 (RD/OG) and 1383 (RD). The actuators are grounded through circuits 1329 (YE) and 1384 (LB). When the [SJB](#) receives an unlock request, the unlock relays are energized, supplying voltage and ground are reversed on the previously listed circuits.

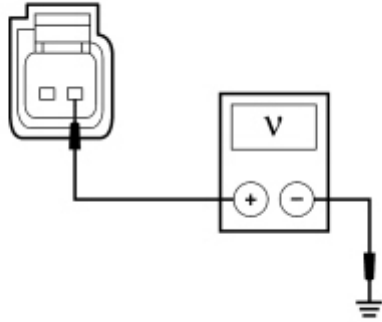
This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock actuator
- [SJB](#)

PINPOINT TEST B: A SINGLE 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.

Test Step	Result / Action to Take
B1 RETRIEVE THE RECORDED DTCs FROM BOTH THE CONTINUOUS AND ON-DEMAND SJB SELF-TESTS	
<ul style="list-style-type: none"> • Check for recorded SJB DTCs from the continuous and on-demand self-tests. • Are any DTCs recorded? 	<p>Yes For DTCs B1300, B1310 and B1982, GO to Pinpoint Test F.</p> <p>For all other DTCs, REFER to DTC Charts in this section.</p> <p>No GO to B2.</p>
B2 CHECK THE DOOR LATCH FOR BINDING	
<ul style="list-style-type: none"> • Lock and unlock the inoperative door lock using the door lock rod. • Does the door lock and unlock? 	<p>Yes GO to B4.</p> <p>No GO to B3.</p>
B3 CHECK THE LOCK ROD FOR BINDING	
<ul style="list-style-type: none"> • Operate the door lock rod manually while observing the door lock rod for any binding or if the rod is bent. • Is the door lock rod bent or binding? 	<p>Yes REPAIR as necessary. TEST the system for normal operation.</p> <p>No INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.</p>
B4 CHECK CIRCUITS 1328 (RD/OG) AND 1383 (RD) FOR VOLTAGE	
<ul style="list-style-type: none"> • Ignition OFF. • Disconnect: Inoperative Door Lock Actuator . • NOTE: The SJB only supplies voltage to the actuator momentarily. It is important to monitor the meter while pressing the door lock control switch. • While pressing the door lock control switch in the LOCK position, measure the voltage between the LH door lock actuator C525-1, circuit 1328 (RD/OG), harness side and ground; or between the RH door lock actuator C603-1, circuit 1383 (RD), harness side and ground. 	<p>Yes GO to B5.</p> <p>No GO to B6.</p>

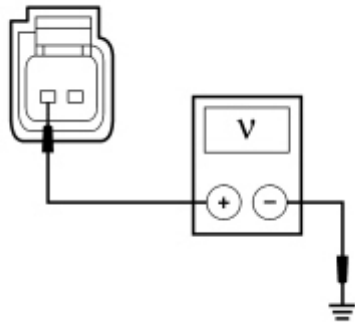


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- Is the voltage momentarily greater than 10 volts?

B5 CHECK CIRCUITS 1329 (YE) AND 1384 (LB) FOR VOLTAGE

- **NOTE:** The **SJB** only supplies voltage to the actuator momentarily. It is important to monitor the meter while pressing the door lock control switch.
- While pressing the door lock control switch in the UNLOCK position, measure the voltage between the LH door lock actuator C525-2, circuit 1329 (YE), harness side and ground; or between the RH door lock actuator C603-2, circuit 1384 (LB), harness side and ground.



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- Is the voltage momentarily greater than 10 volts?

Yes
INSTALL a new door lock actuator. REFER to [Door Lock Actuator](#) in this section. TEST the system for normal operation.

No
GO to [B6](#).

B6 CHECK THE DOOR LOCK ACTUATOR CIRCUITS FOR AN OPEN

- Disconnect: **SJB** C2280g (LH door inoperative) .
- Disconnect: **SJB** C2280h (RH door inoperative) .
- Measure the resistance between inoperative door lock actuator harness side and the **SJB**, harness side as follows:

Door Lock Actuator Connector-Pin	SJB Connector-Pin	Circuit
LH C525-1	C2280g-3	1328 (RD/OG)
LH C525-2	C2280g-1	1329 (YE)
RH C603-1	C2280h-27	1383 (RD)
RH C603-2	C2280h-14	1384 (LB)

- Are the resistances less than 5 ohms?

Yes
GO to [B7](#).

No
REPAIR the circuit in question. TEST the system for normal operation.

B7 CHECK FOR CORRECT **SJB** OPERATION

- Disconnect all the **SJB** connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the **SJB** connectors and make sure they seat correctly.

Yes
INSTALL a new **SJB**. REFER to [Section 419-10](#). TEST the system for normal operation.

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

No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test C: The Door Locks Operate Only One Way

Refer to Wiring Diagrams Cell [110](#), Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) sends voltage signals to the door lock control switches through circuits 1296 (OG/BK) and 1316 (WH/VT) for the lock requests, and through circuits 1297 (YE/RD) and 1317 (DB/LG) for the unlock requests. The door lock control switches receive ground through circuit 1205 (BK). When the lock or unlock switch is pressed, the voltage signal is routed to ground.

The [SJB](#) contains internal relays that are energized depending on input received. When the [SJB](#) receives a lock or unlock request from the door lock control switch, the [SJB](#) energizes the appropriate relay(s) to lock or unlock the doors.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock control switch
- [SJB](#)

PINPOINT TEST C: 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.

Test Step	Result / Action to Take
C1 RETRIEVE THE RECORDED DTCs FROM THE SJB SELF-TEST <ul style="list-style-type: none"> • Check for recorded SJB DTCs from the self-test. • Are any DTCs recorded? 	<p>Yes For DTC B1309, B1341, B2474, or B2475, GO to Pinpoint Test E.</p> <p>For all other DTCs, REFER to DTC Charts in this section.</p> <p>No GO to C2.</p>
C2 CHECK THE DOOR LOCK CONTROL SWITCH <ul style="list-style-type: none"> • Disconnect: Suspect Door Lock Control Switch . • Carry out the driver or passenger door lock control switch component test. <p>Refer to Wiring Diagrams Cell 149 for component testing.</p> <ul style="list-style-type: none"> • Is the door lock control switch OK? 	<p>Yes GO to C3.</p> <p>No INSTALL a new door lock control switch. REFER to Door Lock Control Switch in this section. TEST the system for normal operation.</p>

C3 CHECK THE DOOR LOCK CONTROL SWITCH CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: **SJB** C2280e .
- Measure the resistance between the inoperative door lock control switch, harness side and the **SJB**, harness side as follows:

Door Control Switch Connector-Pin	SJB Connector-Pin	Circuit
LH C505-2	C2280e-1	1317 (DB/LG)
LH C505-4	C2280e-3	1316 (WH/VT)
RH C605-2	C2280e-5	1297 (YE/RD)
RH C605-4	C2280e-8	1296 (OG/BK)

- Are the resistances less than 5 ohms?

Yes
GO to [C4](#).

No
REPAIR the circuit in question. TEST the system for normal operation.

C4 CHECK FOR CORRECT **SJB** OPERATION

- Disconnect all the **SJB** connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the **SJB** 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 **SJB**. REFER to [Section 419-10](#) . TEST the system for normal operation.

No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test D: All Door Locks Are Inoperative From One Switch

Refer to Wiring Diagrams Cell [110](#) , Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) sends voltage signals to the door lock control switches through circuits 1296 (OG/BK) and 1316 (WH/VT) for the lock requests, and through circuits 1297 (YE/RD) and 1317 (DB/LG) for the unlock requests. The door lock control switches receive ground through circuit 1205 (BK). When the lock or unlock switch is pressed, the voltage signal is routed to ground.

The **SJB** contains internal relays that are energized depending on input received. When the **SJB** receives a lock or unlock request from the door lock control switch, the **SJB** energizes the appropriate relay(s) to lock or unlock the doors.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock control switch

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

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

Test Step	Result / Action to Take
D1 CHECK THE DOOR LOCK CONTROL SWITCH	
<ul style="list-style-type: none"> Disconnect: Suspect Door Lock Control Switch . Carry out the driver or passenger door lock control switch component test. <p>Refer to Wiring Diagrams Cell 149 for component testing.</p> <ul style="list-style-type: none"> Is the door lock control switch OK? 	<p>Yes REPAIR circuit 1205 (BK) for an open. TEST the system for normal operation.</p> <p>No INSTALL a new door lock control switch. REFER to Door Lock Control Switch in this section. TEST the system for normal operation.</p>

Pinpoint Test E: DTC B1309, B1341, B2474, Or B2475

Refer to Wiring Diagrams Cell [110](#), Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) sends voltage signals to the door lock control switches through circuits 1296 (OG/BK) and 1316 (WH/VT) for the lock requests, and through circuits 1297 (YE/RD) and 1317 (DB/LG) for the unlock requests. The door lock control switches receive ground through circuit 1205 (BK). When the lock or unlock switch is pressed, the voltage signal is routed to ground.

DTC Description	Fault Trigger Conditions
<ul style="list-style-type: none"> B1309 — Power Door Lock Circuit Short to Ground 	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1316 (WH/VT).
<ul style="list-style-type: none"> B1341 — Power Door Unlock Circuit Short to Ground 	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1317 (DB/LG).
<ul style="list-style-type: none"> B2474 — Passenger Door Lock Switch Circuit Short to Ground 	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1296 (OG/BK).
<ul style="list-style-type: none"> B2475 — Passenger Door Unlock Switch Circuit Short to Ground 	An on-demand DTC that sets if the SJB detects a short to ground on circuit 1297 (YE/RD).

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Door lock control switch(es)
- [SJB](#)

PINPOINT TEST E: DTC B1309, B1341, B2474, OR B2475

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

Test Step	Result / Action to Take
E1 RETRIEVE THE RECORDED DTCs FROM THE SJB SELF-TEST	
<ul style="list-style-type: none"> Check for recorded SJB DTCs from the self-test. Are DTCs B1309, B1341, B2474 or B2475 recorded? 	<p>Yes GO to E2.</p>

No
GO to [Symptom Chart](#).

E2 CHECK THE DOOR LOCK CONTROL SWITCH

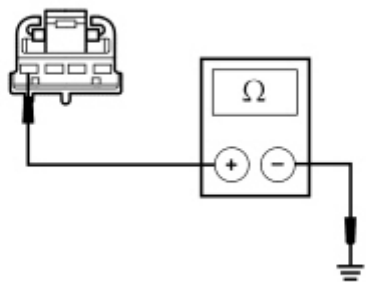
- Disconnect: LH Door Lock Control Switch C505 (For DTCs B1309 or B1341) .
- Disconnect: RH Door Lock Control Switch C605 (For DTCs B2474 or B2475) .
- Repeat the [SJB](#) self-test.
- **Are DTCs B1309, B1341, B2474, or B2475 retrieved again?**

Yes
GO to [E3](#) .

No
INSTALL a new door lock control switch. REFER to [Door Lock Control Switch](#) in this section. TEST the system for normal operation.

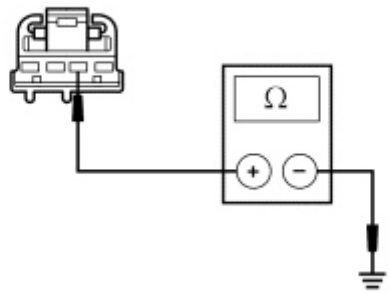
E3 CHECK THE DOOR LOCK CONTROL SWITCH CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: [SJB](#) C2280e .
- Measure the resistance between the LH door lock control switch C505-4 (DTC B1309), circuit 1316 (WH/VT) harness side and ground; or between the RH door lock control switch C605-4 (DTC B2474), circuit 1296 (OG/BK), harness side and ground.



N0058783

- Measure the resistance between the LH door lock control switch C505-2 (DTC B1341), circuit 1317 (DB/LG) harness side and ground; or between the RH door lock control switch C605-2 (DTC B2475), circuit 1297 (YE/RD), harness side and ground.



N0072817

- **Are the resistances greater than 10,000 ohms?**

Yes
GO to [E4](#) .

No
REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.

E4 CHECK FOR CORRECT [SJB](#) OPERATION

- Disconnect all the [SJB](#) connectors.
- Check for:
 - corrosion

Yes
INSTALL a new [SJB](#) . REFER to [Section](#)

- damaged pins
 - pushed-out pins
- Connect all the [SJB](#) connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

[419-10](#). TEST the system for normal operation.

No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test F: DTC B1300, B1310, Or B1982

Refer to Wiring Diagrams Cell [110](#), Power Door Locks for schematic and connector information.

Normal Operation

The Smart Junction Box (SJB) contains the all lock, passenger unlock, and the driver unlock relays. They are all non-serviceable relays. All 3 relays receive voltage through the Bussed Electrical Center (BEC) fuse 62 (20A) and circuit 1679 (WH/YE). Ground for the relays is provided through circuit 1205 (BK). Based on input from the door lock control switches or Remote Keyless Entry (RKE) transmitter, the [SJB](#) grounds the coil side of the relays, which in turn energizes the relay, and sends voltage to the appropriate output.

If the [BEC](#) fuse 62 (20A) has failed or is removed, all three DTCs will be present.

- DTC B1300 (Power Door Lock Circuit Failure) — a continuous and on-demand DTC that sets when the [SJB](#) detects no voltage output from the door lock relay, when the relay is energized.
- DTC B1310 (Power Door Unlock Circuit Failure) — a continuous and on-demand DTC that sets when the [SJB](#) detects no voltage output from the passenger door unlock relay, when the relay is energized.
- DTC B1982 (Driver's Door Unlock Relay Circuit Failure) — a continuous and on-demand DTC that sets when the [SJB](#) detects no voltage output from the driver door unlock relay, when the relay is energized.

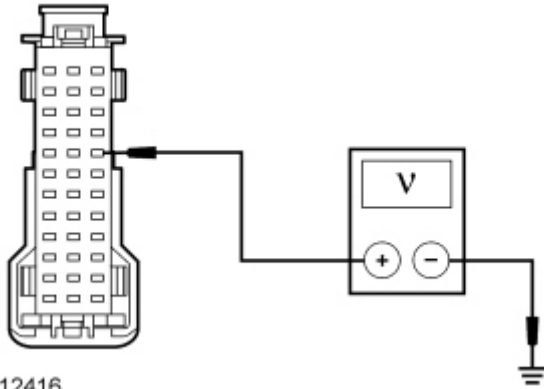
This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Lock actuators
- [SJB](#)

PINPOINT TEST F: DTC B1300, B1310, OR B1982

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

Test Step	Result / Action to Take
F1 RETRIEVE THE RECORDED SJB DTCs FROM THE SELF-TEST	
<ul style="list-style-type: none"> ● Check for recorded SJB DTCs from the self-test. ● Are all three DTCs B1300, B1310, and B1982 present? 	<p>Yes GO to F2.</p> <p>No GO to F5.</p>
F2 CHECK CIRCUIT 1679 (WH/YE) FOR VOLTAGE	
<ul style="list-style-type: none"> ● Ignition OFF. ● Disconnect: SJB C2280h . ● Measure the voltage between the SJB C2280h-29, circuit 1679 (WH/YE), harness side and ground. 	<p>Yes GO to F5.</p> <p>No</p>



N0012416

- Is the voltage greater than 10 volts?

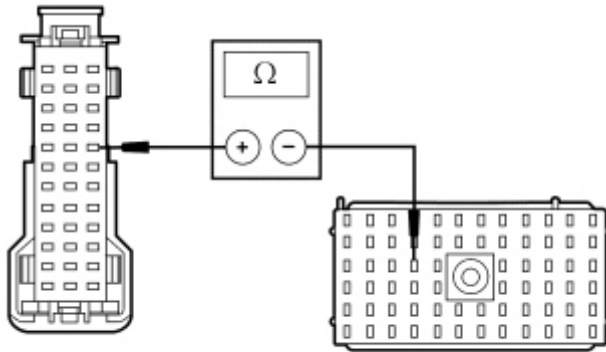
VERIFY the **BEC** fuse 62 (20A) is OK.

If OK, GO to **F3**.

If not OK, GO to **F4**.

F3 CHECK CIRCUIT 1679 (WH/YE) FOR AN OPEN

- Disconnect: **BEC** C1035a .
- Measure the resistance between the **SJB** C2280h-29, circuit 1679 (WH/YE) harness side, and the **BEC** C1035a-D9, circuit 1679 (WH/YE) harness side.



N0072818

- Is the resistance less than 5 ohms?

Yes

INSTALL a new **BEC**.
CLEAR the DTCs.
REPEAT the self-test.

No

REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

F4 CHECK CIRCUITS 1328 (RD/OG) AND 1383 (RD) FOR A SHORT TO GROUND

NOTE: If the **BEC** fuse 62 (20A) fails immediately, repair circuit 1679 (WH/YE) for a short to ground.

- Install a new **BEC** fuse 62 (20A).
- Connect: **SJB** C2280h .
- Operate the door lock actuators by pressing LOCK on the door lock control switch.
- Is the **BEC** fuse 62 (20A) OK?

Yes

REPAIR circuit 1329 (YE) or circuit 1384 (LB) for a short to ground. CLEAR the DTCs. REPEAT the self-test.

No

REPAIR circuit 1328 (RD/OG) or circuit 1383 (RD) for a short to ground. CLEAR the DTCs. REPEAT the self-test.

F5 CHECK FOR CORRECT **SJB** OPERATION

- Disconnect all the **SJB** connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the **SJB** 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 **SJB**.
REFER to [Section 419-10](#).
TEST the system for normal operation.

No

The system is operating correctly at this time. The concern may have been

caused by a loose or corroded connector.

Pinpoint Test G: The Luggage Compartment Lid Release is Inoperative/Does Not Operate Correctly

Refer to Wiring Diagrams Cell [113](#), Luggage Compartment for schematic and connector information.

Normal Operation

When the Smart Junction Box (SJB) receives an open command from the Remote Keyless Entry (RKE) transmitter, the [SJB](#) grounds the luggage compartment lid release relay control circuit 26 (WH/VT). The luggage compartment lid release relay is located in the Bussed Electrical Center (BEC) and receives voltage from the [BEC](#) fuse 57 (20A). When the control circuit is grounded, the relay closes and supplies voltage to circuit 1092 (PK/OG) which energizes the luggage compartment lid release solenoid, releasing the luggage compartment lid. The luggage compartment lid release solenoid is grounded through circuit 1205 (BK).

The [SJB](#) will not release the luggage compartment lid if the vehicle is traveling faster than 5 km/h (3 mph).

NOTE: The [SJB](#) releases the luggage compartment lid regardless of vehicle speed when a short to ground is detected on the luggage compartment lid disarm switch circuit 1350 (WH/PK).

- DTC B1551 (Latch/Decklid Release Circuit Failure) — a continuous or on-demand DTC that sets if the [SJB](#) detects an open or short to ground on the trunk release output circuit 26 (WH/VT).

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- [RKE](#) transmitter
- Luggage compartment lid release relay
- Luggage compartment lid release solenoid (part of the luggage compartment lid latch)
- Vehicle speed signal
- [BEC](#)
- [SJB](#)

PINPOINT TEST G: THE LUGGAGE COMPARTMENT LID RELEASE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

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

NOTE: Failure to disconnect the battery when instructed will result in false resistance readings. Refer to [Section 414-01](#).

Test Step	Result / Action to Take
G1 CHECK FOR COMPLETE FUNCTIONALITY OF THE RKE TRANSMITTER(S)	
<ul style="list-style-type: none">• Check the RKE transmitter buttons LOCK, UNLOCK, and PANIC for correct operation.• Do the RKE transmitter LOCK, UNLOCK, and PANIC buttons operate correctly?	Yes GO to G2 . No GO to Pinpoint Test H .
G2 CHECK THE VEHICLE SPEED SIGNAL IN THE SJB	
<ul style="list-style-type: none">• Enter the following diagnostic mode on the scan tool: SJB DataLogger .• Select the SJB PID (VSS_GEM) and monitor while the vehicle is	Yes REFER to Section 413-01 .

stationary.

- Does the PID indicate any vehicle speed?

No

GO to [G3](#).

G3 CARRY OUT THE [SJB](#) TRUNK RELEASE ACTIVE COMMAND

- Ignition ON.
- Enter the following diagnostic mode on the scan tool: [SJB](#) DataLogger .
- Select the [SJB](#) PID (TRUNK_REL) and command the luggage compartment lid release relay ON.
- Does the luggage compartment lid release operate?

Yes

REPLACE the inoperative [RKE](#) transmitter. PROGRAM all [RKE](#) transmitters. REFER to [Remote Keyless Entry \(RKE\) Transmitter Programming](#) in this section. INFORM the customer that any [RKE](#) transmitters not present need to be programmed. TEST the system for normal operation.

No

GO to [G4](#).

G4 CHECK THE LUGGAGE COMPARTMENT LID RELEASE RELAY

- Install a known good relay in the luggage compartment lid release relay location.
- Enter the following diagnostic mode on the scan tool: [SJB](#) DataLogger .
- Select the [SJB](#) PID (TRUNK_REL) and command the luggage compartment lid release relay ON.
- Does the luggage compartment lid release operate?

Yes

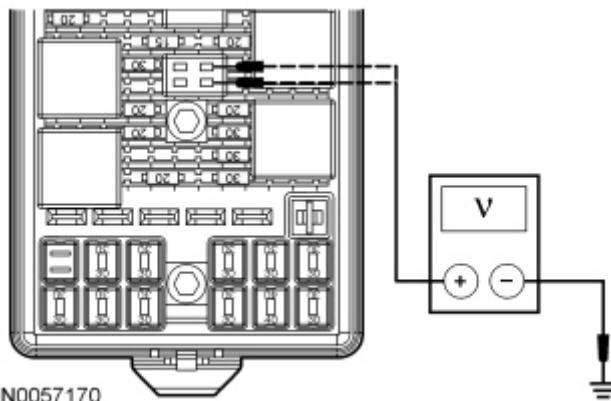
INSTALL a new luggage compartment lid release relay. TEST the system for normal operation.

No

GO to [G5](#).

G5 CHECK THE LUGGAGE COMPARTMENT LID RELEASE RELAY INPUT CIRCUITS FOR VOLTAGE

- Disconnect: Luggage Compartment Lid Release Relay .
- Ignition OFF.
- Measure the voltage between the luggage compartment lid release relay pin 86, [BEC](#) face side and ground, and between the luggage compartment lid release relay pin 87, [BEC](#) face side and ground.



- Are the voltages greater than 10 volts?

Yes

GO to [G6](#).

No

VERIFY the [BEC](#) fuse 57 (20A) is OK. If OK, INSTALL a new [BEC](#). If not OK, REFER to the Wiring Diagram manual to identify the possible causes of the circuit short. TEST the system for normal operation.

G6 CHECK CIRCUIT 1092 (PK/OG) FOR A SHORT TO VOLTAGE

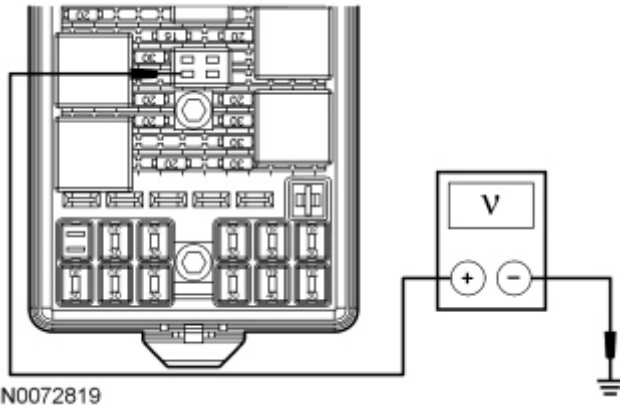
- Measure the voltage between the luggage compartment lid release relay pin 30, circuit 1092 (PK/OG), [BEC](#) face side and ground.

Yes

REPAIR the circuit. TEST the system for normal operation.

No

GO to [G7](#).

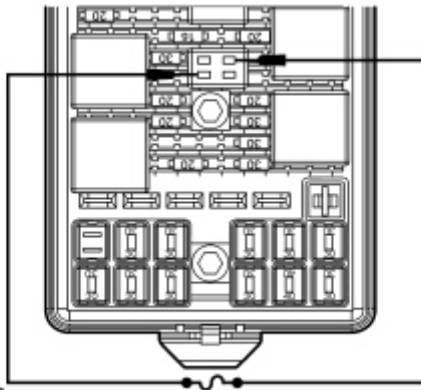


N0072819

- Is the voltage greater than 10 volts?

G7 BYPASS THE LUGGAGE COMPARTMENT LID RELEASE RELAY

- Connect a fused jumper wire between the luggage compartment lid release relay pin 87, **BEC** face side and the luggage compartment lid release relay pin 30, circuit 1092 (PK/OG), **BEC** face side.



N0072820

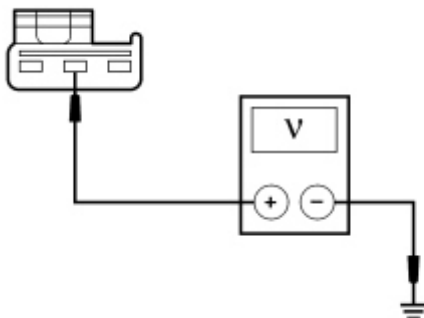
- Does the luggage compartment lid release?

Yes
REMOVE the jumper wire.
GO to [G11](#).

No
LEAVE the jumper wire connected. GO to [G8](#).

G8 CHECK CIRCUIT 1092 (PK/OG) FOR VOLTAGE

- Disconnect: Luggage Compartment Lid Release Solenoid C430 .
- Measure the voltage between the luggage compartment lid release solenoid C430-2, circuit 1092 (PK/OG), harness side and ground.



N0057169

- Is the voltage greater than 10 volts?

Yes
REMOVE the jumper wire.
GO to [G10](#).

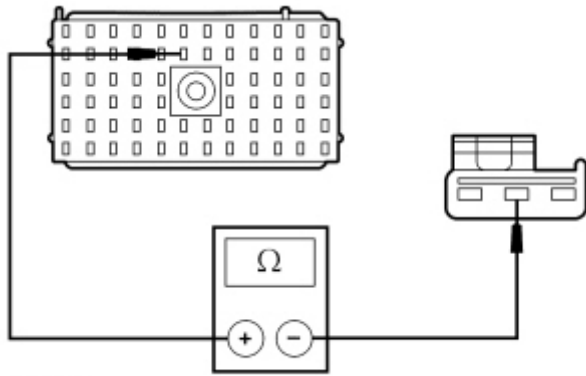
No
REMOVE the jumper wire.
GO to [G9](#).

G9 CHECK CIRCUIT 1092 (PK/OG) FOR AN OPEN

- Disconnect: **BEC** C1035a .
- Measure the resistance between the **BEC** C1035a-E7, circuit 1092 (PK/OG), harness side and the luggage compartment lid release solenoid C430-2, circuit 1092 (PK/OG), harness side.

Yes
INSTALL a new **BEC**. TEST the system for normal operation.

No



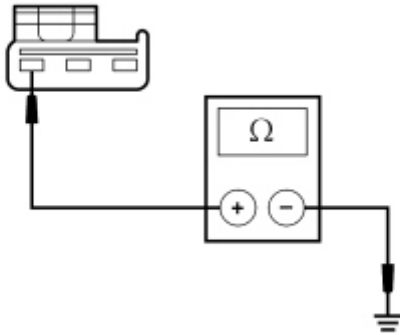
N0002419

- Is the resistance less than 5 ohms?

REPAIR the circuit. TEST the system for normal operation.

G10 CHECK CIRCUIT 1205 (BK) FOR AN OPEN

- Disconnect: Negative Battery Cable .
- Measure the resistance between the luggage compartment lid release solenoid C430-3, circuit 1205 (BK), harness side and ground.



N0002418

- Is the resistance less than 5 ohms?

Yes
INSTALL a new luggage compartment lid latch. REFER to [Luggage Compartment Lid Latch](#) in this section. TEST the system for normal operation.

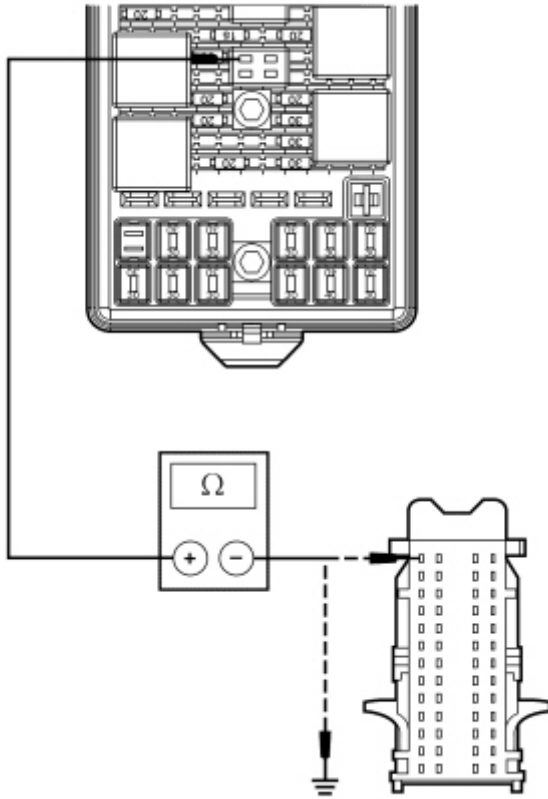
No
REPAIR the circuit. TEST the system for normal operation.

G11 CHECK THE **BEC** AND CIRCUIT 26 (WH/VT) FOR AN OPEN OR SHORT TO GROUND

- Disconnect: **SJB** C2280c .
- Measure the resistance between the luggage compartment lid release relay pin 85, circuit 26 (WH/VT), **BEC** face side and the **SJB** C2280c-13, circuit 26 (WH/VT), harness side; and between the luggage compartment lid release relay pin 85, circuit 26 (WH/VT), **BEC** face side and ground.

Yes
GO to [G13](#).

No
GO to [G12](#).

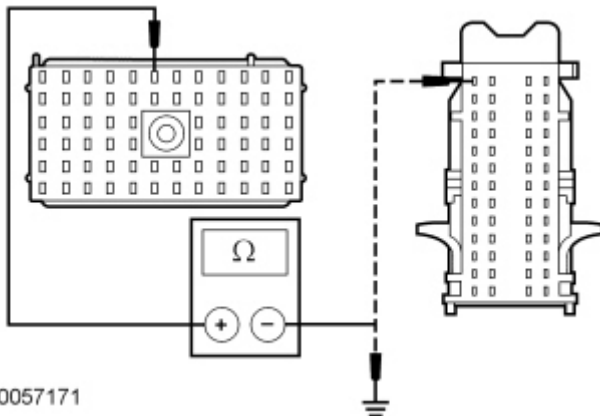


N0075643

- Is the resistance less than 5 ohms between the relay and the **SJB**, and greater than 10,000 ohms between the relay and ground?

G12 CHECK CIRCUIT 26 (WH/VT) FOR AN OPEN OR SHORT TO GROUND

- Disconnect: **BEC** C1035a .
- Measure the resistance between the **BEC** C1035a-F7, circuit 26 (WH/VT), harness side and the **SJB** C2280c-13, circuit 26 (WH/VT), harness side; and between the **BEC** C1035a-F7, circuit 26 (WH/VT), harness side and ground.



N0057171

- Is the resistance less than 5 ohms between the **BEC** and the **SJB**, and greater than 10,000 ohms between the **BEC** and ground?

Yes
INSTALL a new **BEC**.
CLEAR the DTCs. REPEAT the self-test.

No
REPAIR the circuit. CLEAR the DTCs. REPEAT the self-test.

G13 CHECK FOR CORRECT **SJB OPERATION**

- Disconnect all the **SJB** connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins

Yes
INSTALL a new **SJB**.
REFER to [Section 419-10](#).
TEST the system for normal operation.

- Connect all the [SJB](#) 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. The concern may have been caused by a loose or corroded connector.

Pinpoint Test H: The Remote Keyless Entry (RKE) Transmitter Is Inoperative

Normal Operation

Remote locking and unlocking of the doors, activating the panic alarm, and releasing the luggage compartment lid latch is accomplished by the smart junction box (SJB) receiving a command message from the [RKE](#) transmitter through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) antenna. The [SJB](#) processes the command and provides the appropriate output. The [RKE](#) transmitters and [SJB](#) also utilize a rolling code to prevent the code from being "captured" by a code grabber. The system advances the counter in the [RKE](#) transmitter and [SJB](#) every time an [RKE](#) transmitter button is pressed.

The [TPMS](#) / [RKE](#) antenna is located externally on the [SJB](#).

- DTC B2425 (Remote Keyless Entry Out of Synchronization) — a continuous DTC that sets when the [SJB](#) detects the rolling counter received from an [RKE](#) transmitter is 1,024 times or greater than the rolling counter stored in the module.

This pinpoint test is intended to diagnose the following:

- [RKE](#) transmitter battery
- [RKE](#) transmitter programming
- [RKE](#) transmitter
- [RKE](#) transmitter button pressed a substantial amount of times while outside the range of the vehicle
- [SJB](#)

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

NOTE: All [RKE](#) transmitters must be present to begin diagnosis of the [RKE](#) system.

NOTE: Aftermarket or dealer-installed systems may adversely affect the [RKE](#) system operation. These systems should be disconnected before diagnosing any [RKE](#) concerns.

Test Step	Result / Action to Take
H1 CHECK FOR THE CORRECT RKE TRANSMITTERS	
<p>NOTE: Make sure the RKE transmitters are those provided with the OEM system and not from an aftermarket or a dealer-installed system that may have been installed on the vehicle.</p> <ul style="list-style-type: none"> • Check that the correct RKE transmitters are used with the vehicle. • Are all the correct RKE transmitters present? 	<p>Yes GO to H2.</p> <p>No The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters must to be present to proceed with diagnosis of the system.</p>
H2 CHECK IF THE RKE TRANSMITTER IS OUT OF SYNCHRONIZATION WITH THE SJB	
<ul style="list-style-type: none"> • Check the recorded results from the SJB self-test. 	<p>Yes GO to H3.</p>

<ul style="list-style-type: none"> • Is continuous DTC B2425 present? 	<p>No GO to H7.</p>
<p>H3 RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER</p>	<p>Yes The transmitter is now synchronized. CLEAR the DTCs. REPEAT the self-test.</p> <p>No GO to H4.</p>
<ul style="list-style-type: none"> • Ignition OFF. • Press any button on the inoperative RKE transmitter 4 times consecutively within 30 seconds. • Does the RKE transmitter operate correctly now? 	
<p>H4 CHECK FOR A SECOND RKE TRANSMITTER</p>	<p>Yes GO to H5.</p> <p>No GO to H6.</p>
<ul style="list-style-type: none"> • Check for another RKE transmitter that operates with the vehicle. • Is there another RKE transmitter that operates with the vehicle? 	
<p>H5 RESYNCHRONIZE THE INOPERATIVE RKE TRANSMITTER USING THE SECOND RKE TRANSMITTER</p>	<p>Yes The transmitter is now synchronized. CLEAR the DTCs. REPEAT the self-test.</p> <p>No GO to H6.</p>
<ul style="list-style-type: none"> • Press any button on the operational RKE transmitter. • Within 30 seconds, press a button on the inoperative RKE transmitter. • Check the inoperative RKE transmitter for correct operation. • Does the inoperative RKE transmitter operate now? 	
<p>H6 PROGRAM THE INOPERATIVE RKE TRANSMITTER OR ALL THE RKE TRANSMITTERS</p>	<p>Yes The transmitter(s) is now synchronized. INFORM the customer that any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test.</p> <p>No GO to H7.</p>
<ul style="list-style-type: none"> • Program the inoperative RKE transmitter individually using a scan tool or program all RKE transmitters using the manual key cycle method. Refer to Remote Keyless Entry (RKE) Transmitter Programming in this section. • Does the inoperative RKE transmitter(s) operate now? 	
<p>H7 MAKE SURE THE RKE TRANSMITTER SIGNAL IS BEING RECEIVED</p>	<p>Yes GO to H8.</p> <p>No GO to H9.</p>
<ul style="list-style-type: none"> • Enter the following diagnostic mode on the scan tool: Remote Keyless Entry . • NOTE: The remote keyless entry test is accessed through the scan tool by selecting Toolbox, Body, Security. • Monitor the RKE Transmitter Identification Code (TIC) through the scan tool menus. • Verify the RKE transmitter signal is being received. Press a button on the RKE transmitter while observing the scan tool. • Does the TIC show up on the scan tool screen when a button is pressed? 	
<p>H8 DETERMINE IF THE RKE TRANSMITTERS ARE PROGRAMMED</p>	<p>Yes GO to H11.</p> <p>No</p>
<ul style="list-style-type: none"> • Enter the following diagnostic mode on the scan tool: Remote Keyless Entry . • Monitor the RKE transmitter TIC/DATA through the scan tool menus. 	

<ul style="list-style-type: none"> • Verify the RKE transmitters are programmed to the vehicle. • Does the TIC displayed under RKE transmitter match any of the TIC stored in memory? 	<p>PROGRAM all the RKE transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation.</p>
H9 CHECK THE RKE TRANSMITTER BATTERY	
<ul style="list-style-type: none"> • Using a thin coin, open the RKE transmitter. • Do not clean off any grease from the battery terminal on the back surface of the circuit board. • Verify the correct battery is being used (CR2032). • Remove the RKE transmitter battery and measure the voltage. • Is the voltage greater than 2.5 volts? 	<p>Yes GO to H10.</p> <p>No INSTALL a new battery. Do not program the RKE transmitters (damaged or dead batteries do not erase TICs from memory). TEST the system for normal operation.</p>
H10 CHECK FOR NORMAL OPERATION WITH A KNOWN GOOD RKE TRANSMITTER	
<ul style="list-style-type: none"> • Enter the following diagnostic mode on the scan tool: Remote Keyless Entry . • Monitor the RKE transmitter TIC/DATA through the scan tool menus. • Using the customer's second RKE transmitter or a known good RKE transmitter that is correct for the vehicle (and programmed to the vehicle), verify the RKE transmitter signal is being received. • Does the TIC show up on the scan tool when a button is pressed on the RKE transmitter? 	<p>Yes REPLACE the inoperative RKE transmitter. PROGRAM all the RKE transmitter(s). REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. CLEAR the DTCs. REPEAT the self-test.</p> <p>No GO to H11.</p>
H11 CHECK FOR CORRECT SJB OPERATION	
<ul style="list-style-type: none"> • Disconnect all the SJB connectors. • Check for: <ul style="list-style-type: none"> ■ corrosion ■ damaged pins ■ pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • Is the concern still present? 	<p>Yes INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

Pinpoint Test I: An Individual Button/Feature Is Inoperative From The Remote Keyless Entry (RKE) Transmitter

Normal Operation

Remote locking and unlocking of the doors, activating the panic alarm, and releasing the luggage compartment latch is accomplished by the Smart Junction Box (SJB) receiving a command message from the remote keyless entry (RKE) transmitter through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) external antenna. The **SJB** processes the command and provides the appropriate output.

The **SJB** will disable the PANIC feature if the ignition key is in any position other than OFF or LOCK.

The **SJB** will disable the luggage compartment lid release if the vehicle is moving faster than 5 km/h (3 mph) or faster.

This pinpoint test is intended to diagnose the following:

- All door locks
- Horn system

- Luggage compartment lid latch
- Turn signals
- [RKE](#) transmitter

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

Test Step	Result / Action to Take
I1 VERIFY THE DOOR LOCK OPERATION	
<ul style="list-style-type: none"> • Press the lock and unlock button from the driver door lock control switch while observing the door lock operation. • Do the door locks operate correctly? 	<p>Yes GO to I2.</p> <p>No GO to Symptom Chart.</p>
I2 VERIFY THE HAZARD LAMP OPERATION	
<ul style="list-style-type: none"> • Place the hazard switch in the ON position. • Do the hazard lamps operate correctly? 	<p>Yes GO to I3.</p> <p>No REFER to Section 417-01.</p>
I3 VERIFY THE HORN OPERATION	
<ul style="list-style-type: none"> • Enter the following diagnostic mode on the scan tool: SJB DataLogger . • Select the SJB PID (HORN) and active command the horn on. • Does the horn sound when commanded on? 	<p>Yes GO to I4.</p> <p>No REFER to Section 413-06.</p>
I4 VERIFY THE LUGGAGE COMPARTMENT LID RELEASE OPERATION	
<ul style="list-style-type: none"> • Enter the following diagnostic mode on the scan tool: SJB DataLogger . • Select the SJB PID (TRUNK_REL) and active command the luggage compartment lid latch to release. • Does the luggage compartment lid latch release? 	<p>Yes REPLACE the inoperative RKE transmitter. PROGRAM all of the RKE transmitter(s). REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation.</p> <p>No GO to Pinpoint Test G.</p>

Pinpoint Test J: The Remote Keyless Entry (RKE) Transmitter Has Poor Range Performance

Normal Operation

Remote locking and unlocking of the doors, activating the panic alarm, and releasing the luggage compartment lid latch is accomplished by the smart junction box (SJB) receiving a command message from the remote keyless entry (RKE) transmitter through the Tire Pressure Monitoring System (TPMS)/Remote Keyless Entry (RKE) antenna. The [SJB](#) processes the command and provides the appropriate output. The [RKE](#) transmitter has a normal operating range of 10 m (33 ft).

The [TPMS](#) / [RKE](#) antenna is located externally on the [SJB](#).

This pinpoint test is intended to diagnose the following:

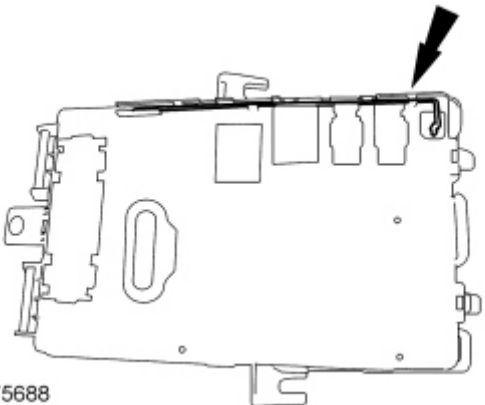
- Aftermarket systems
- High power devices
- [RKE](#) transmitter
- [RKE](#) transmitter battery
- [TPMS](#) / [RKE](#) antenna
- TV/radio transmission towers
- [SJB](#)

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

NOTE: All [RKE](#) transmitters must be present to begin diagnosis of the [RKE](#) system.

NOTE: Aftermarket or dealer-installed systems may adversely affect the [RKE](#) system operation. These systems should be disconnected before diagnosing any [RKE](#) concerns.

Test Step	Result / Action to Take
<p>J1 CHECK FOR THE CORRECT RKE TRANSMITTERS</p> <ul style="list-style-type: none"> • NOTE: Make sure the RKE transmitters are those provided with the original equipment manufacturer (OEM) system and not from an aftermarket or a dealer installed system that may have been installed on the vehicle. • Check that the correct RKE transmitters are used with the vehicle. • Are all the correct RKE transmitters present? 	<p>Yes GO to J2.</p> <p>No The system cannot be tested without the correct RKE transmitters. INFORM the customer that all the correct RKE transmitters must be present to proceed with diagnosis of the system.</p>
<p>J2 CHECK ALL RKE TRANSMITTERS FOR POOR RANGE PERFORMANCE</p> <ul style="list-style-type: none"> • NOTE: The 3 m (10 ft) measurement of range is not the standard but is a guideline that clearly indicates a vehicle is experiencing poor range performance. • Check all RKE transmitters for poor range performance (less than 3 m [10 ft]). • Do all RKE transmitters experience poor range? 	<p>Yes GO to J4.</p> <p>No GO to J3.</p>
<p>J3 CHECK THE RKE TRANSMITTER BATTERY</p> <ul style="list-style-type: none"> • Using a thin coin, open the RKE transmitter. • Do not clean off any grease from the battery terminals on the back surface of the circuit board. • Verify the correct battery is used (CR2032). • Remove the RKE transmitter battery and measure the voltage. • Is the voltage greater than 2.5 volts? 	<p>Yes REPLACE the inoperative RKE transmitter and PROGRAM all RKE transmitters. REFER to Remote Keyless Entry (RKE) Transmitter Programming in this section. INFORM the customer that any RKE transmitters not present need to be programmed. TEST the system for normal operation.</p> <p>No INSTALL a new battery (make sure the battery is seated correctly). DO NOT reprogram the RKE transmitters (weak or dead batteries do not erase TICs from memory). TEST the</p>

	system for normal operation.
J4 CHECK THE LOCATION OF THE VEHICLE AND THE APPROACH ANGLES AROUND THE VEHICLE	
<ul style="list-style-type: none"> • 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 is within 0.8 km (0.5 mile) of high power devices or radio/TV towers, the operating distance of the RKE transmitters may be reduced. • Is the poor range performance consistent around the vehicle? 	<p>Yes GO to J5.</p> <p>No The system is operating correctly at this time. TEST the system for normal operation.</p>
J5 CHECK THE TPMS / RKE ANTENNA	
<ul style="list-style-type: none"> • Verify the TPMS / RKE antenna is connected and not damaged.  <p>N0075688</p> <ul style="list-style-type: none"> • Is the antenna OK? 	<p>Yes GO to J6.</p> <p>No If the antenna is disconnected, CONNECT the antenna correctly. TEST the system for normal operation.</p> <p>If the antenna is damaged, INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.</p>
J6 CHECK FOR CORRECT SJB OPERATION	
<ul style="list-style-type: none"> • Disconnect all the SJB connectors. • Check for: <ul style="list-style-type: none"> ■ corrosion ■ damaged pins ■ pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • Is the concern still present? 	<p>Yes INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

Pinpoint Test K: The Autolock Does Not Operate Correctly

NOTE: The autolock feature is not available on manual transmission equipped vehicles.

Normal Operation

The autolocking function causes the vehicle to automatically lock all the doors when the following conditions are all concurrently met during the current key cycle:

- All doors are closed
- Autolocking function is active
- Key in ON position
- Brake pedal is applied and vehicle speed is less than 8 km/h (5 mph)
- Vehicle speed exceeds 8 km/h (5 mph)

Relock occurs after a door is opened, the brake pedal is applied while the vehicle speed is less than 8 km/h (5 mph), all the doors are closed again, and the vehicle speed increases to 8 km/h (5 mph) or greater.

This pinpoint test is intended to diagnose the following:

- Smart Junction Box (SJB)

PINPOINT TEST K: THE AUTOLOCK DOES NOT OPERATE CORRECTLY

Test Step	Result / Action to Take
K1 VERIFY THE AUTOLOCK FEATURE IS ENABLED	
<ul style="list-style-type: none"> • Verify the autolock feature is enabled. • Is the autolock feature enabled? 	<p>Yes GO to K2.</p> <p>No PROGRAM the autolock feature. REFER to Autolock and Auto-Unlock Programming in this section.</p>
K2 CHECK COURTESY LAMPS	
<ul style="list-style-type: none"> • Open the driver door. • Do the courtesy lamps illuminate? 	<p>Yes GO to K3.</p> <p>No REFER to Section 417-02.</p>
K3 CHECK THE SJB VEHICLE SPEED, IGNITION SWITCH STATUS AND BRAKE PEDAL POSITION (BPP) PIDs	
<ul style="list-style-type: none"> • Ignition ON. • Enter the following diagnostic mode on the scan tool: SJB DataLogger . • Monitor the SJB vehicle speed PID, ignition switch status PID and brake ON/OFF PID. • Are the correct PID values received? 	<p>Yes GO to K4.</p> <p>No REFER to Section 413-01 to continue diagnosis of the vehicle speed.</p> <p>REFER to Section 211-05 to continue diagnosis of the ignition switch status.</p> <p>REFER to Section 417-01 to continue diagnosis of the stoplamp switch.</p>
K4 CHECK FOR CORRECT SJB OPERATION	
<ul style="list-style-type: none"> • Disconnect all the SJB connectors. • Check for: <ul style="list-style-type: none"> ■ corrosion ■ damaged pins ■ pushed-out pins • Connect all the SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • Is the concern still present? 	<p>Yes INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

Pinpoint Test L: The Smart Unlock Does Not Operate Correctly

NOTE: It is possible to lock the vehicle with the keys in the ignition lock cylinder if the doors are locked with the Remote Keyless Entry (RKE) transmitter, manually locked with the lock button on the door, or by locking the driver door with a key.

Normal Operation

The smart unlock feature unlocks the driver door if the key is in the ignition lock cylinder and the driver door is open when the vehicle is locked with the door lock control switch. The smart unlock feature requests the driver door be unlocked one second after these conditions occur. The smart unlock feature unlocks the driver door only if the Transmitter Identification Code (TIC) programming modes are not active.

This pinpoint test is intended to diagnose the following:

- Smart Junction Box (SJB)

PINPOINT TEST L: THE SMART UNLOCK DOES NOT OPERATE CORRECTLY

Test Step	Result / Action to Take
L1 CHECK THE COURTESY LAMP OPERATION	
<ul style="list-style-type: none"> • Open and close the driver door. • Do the courtesy lamps operate correctly? 	<p>Yes GO to L2.</p> <p>No REFER to Section 417-02.</p>
L2 CHECK THE KEY-IN-IGNITION WARNING CHIME	
<ul style="list-style-type: none"> • Insert the key in the ignition switch. • Open the driver door. • Does the key-in-ignition warning chime work correctly? 	<p>Yes GO to L3.</p> <p>No REFER to Section 413-01.</p>
L3 CHECK FOR CORRECT SJB OPERATION	
<ul style="list-style-type: none"> • Disconnect all SJB connectors. • Check for: <ul style="list-style-type: none"> ▪ corrosion ▪ damaged pins ▪ pushed-out pins • Connect all SJB connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. • Is the concern still present? 	<p>Yes INSTALL a new SJB. REFER to Section 419-10. TEST the system for normal operation.</p> <p>No The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

Pinpoint Test M: Hard To Open/Close Door From Either Door Handle

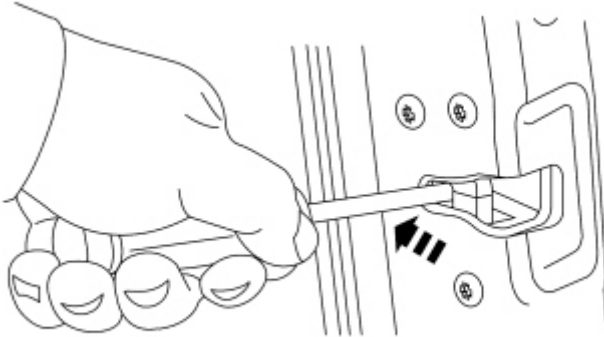
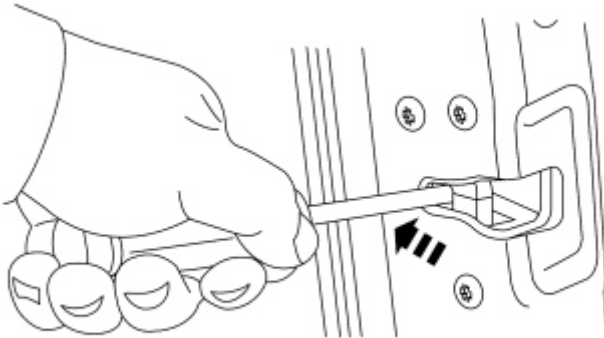
Normal Operation

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.

This pinpoint test is intended to diagnose the following:

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

PINPOINT TEST M: HARD TO OPEN/CLOSE DOOR FROM EITHER DOOR HANDLE

Test Step	Result / Action to Take
<p>M1 CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES</p> <ul style="list-style-type: none"> • Open and close the door using both the interior and exterior door handles. • Does the door open normally from one of the door handles? 	<p>Yes If the door is difficult/does not open from the exterior door handle, GO to Pinpoint Test N.</p> <p>If the door is difficult/does not open from the interior door handle, GO to Pinpoint Test O.</p> <p>No If the door does not operate correctly from both door handles, GO to M2.</p>
<p>M2 CHECK THE LATCH OPERATION</p> <ul style="list-style-type: none"> • Open the door. • Using a screwdriver, fully close the latch (two clicks).  <p>N0094195</p> <ul style="list-style-type: none"> • Verify that the latch releases easily while pulling on the interior/exterior door handle. • Does the latch release easily? 	<p>Yes GO to M4.</p> <p>No GO to M3.</p>
<p>M3 CHECK THE LATCH OPERATION AFTER LUBRICATION</p> <ul style="list-style-type: none"> • Lubricate the door latch. REFER to Latch Lubrication in this section. • Using a screwdriver, fully close the latch (two clicks).  <p>N0094195</p> <ul style="list-style-type: none"> • Verify that the latch releases easily while pulling on the interior/exterior door handle. • Does the latch release easily? 	<p>Yes The concern was caused by an insufficiently lubricated door latch.</p> <p>No INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.</p>
<p>M4 CHECK THE STRIKER ADJUSTMENT</p> <ul style="list-style-type: none"> • Check the adjustment of the striker. REFER to Section 501-03. 	<p>Yes GO to M5.</p>

<ul style="list-style-type: none"> • Is the striker adjusted correctly? 	<p>No ADJUST the striker as necessary. TEST the system for normal operation.</p>
<p>M5 CHECK THE DOOR ALIGNMENT</p>	<p>Yes LUBRICATE the door hinges. TEST the system for normal operation.</p> <p>No ADJUST the door as necessary. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> • Check the alignment of the door. REFER to Section 501-03. • Is the door aligned correctly? 	

Pinpoint Test N: A Door Is Difficult/Does Not Open From The Exterior Door Handle

Normal Operation

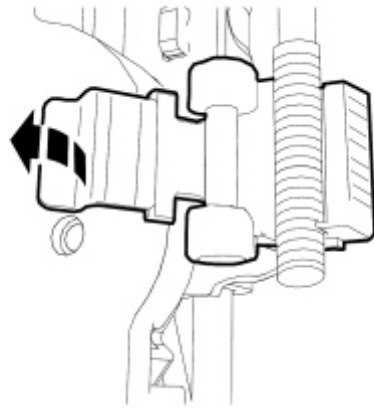
The exterior door handle is connected to the door latch with an actuating rod. When the exterior door handle is pulled it causes the actuating rod to push down on the latch lever. The actuating rod can be adjusted for proper exterior door handle operation. When the latch lever is moved, the door latch releases, allowing the door to open.

This pinpoint test is intended to diagnose the following:

- Broken or binding linkage
- Exterior door handle to latch rod adjustment
- Exterior door handle
- Door latch

PINPOINT TEST N: A DOOR IS DIFFICULT/DOES NOT OPEN FROM THE EXTERIOR DOOR HANDLE

Test Step	Result / Action to Take
<p>N1 CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES</p>	<p>Yes If the door is difficult/does not open from only the exterior door handle, GO to N2.</p> <p>No If the door does not operate correctly from both door handles, GO to Pinpoint Test M.</p>
<ul style="list-style-type: none"> • Open and close the door using both the interior and exterior door handles. • Does the door open normally from one of the door handles? 	
<p>N2 CHECK THE EXTERIOR DOOR HANDLE</p>	<p>Yes GO to N3.</p> <p>No INSTALL a new exterior door handle. REFER to Exterior Door Handle in this section. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> • Remove the door trim panel. Refer to Section 501-05. • Open the clip and disconnect the exterior door handle actuating rod. 	



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- Pull and release the exterior door handle
- **Does the exterior door handle operate correctly?**

N3 CHECK THE EXTERIOR DOOR HANDLE AND LINKAGE OPERATION

- Operate the exterior door handle while observing the linkage.
- **Are any of the exterior door handle components or linkages binding or broken?**

Yes
REPAIR as necessary. TEST the system for normal operation.

No
GO to [N4](#).

N4 CARRY OUT THE EXTERIOR DOOR HANDLE ADJUSTMENT

- Carry out the exterior door handle to latch rod adjustment. Refer to [Door Handle to Latch Rod Adjustment](#) in this section.
- **Does the exterior door handle operate correctly?**

Yes
The concern was caused by an improperly adjusted exterior door handle.

No
INSTALL a new door latch. REFER to [Door Latch](#) in this section. TEST the system for normal operation.

Pinpoint Test O: A Door Is Difficult/Does Not Open From The Interior Door Handle

Normal Operation

The interior door handle is connected to the door latch by an actuating cable. When the interior door handle is pulled it causes the cable to pull on the latch lever. When the latch lever is moved, the door latch releases, allowing the door to open.

This pinpoint test is intended to diagnose the following:

- Broken or binding cable/linkage
- Door latch

PINPOINT TEST O: A DOOR IS DIFFICULT/DOES NOT OPEN FROM THE INTERIOR DOOR HANDLE

Test Step	Result / Action to Take
<p>O1 CHECK THE LATCH OPERATION FROM BOTH DOOR HANDLES</p>	
<ul style="list-style-type: none"> • Open and close the door using both the interior and exterior door handles. • Does the door open normally from one of 	<p>Yes If the door is difficult/does not open from only the interior door handle, GO to O2.</p>

the door handles?	No If the door does not operate correctly from both door handles, GO to Pinpoint Test M.
O2 CHECK THE INTERIOR DOOR HANDLE AND CABLE/LINKAGE OPERATION	Yes REPAIR as necessary. TEST the system for normal operation. No INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.
<ul style="list-style-type: none"> Remove the door trim panel. Refer to Section 501-05. 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? 	

Pinpoint Test P: Exterior Door Release Handle Sticks

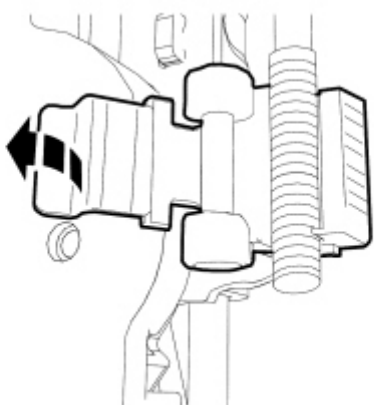
Normal Operation

The exterior door handle is connected to the door latch with an actuating rod. When the exterior door handle is pulled it causes the actuating rod to push down on the latch lever. The actuating rod can be adjusted for proper exterior door handle operation. 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.

This pinpoint test is intended to diagnose the following:

- Binding linkage
- Broken handle return spring
- Exterior door handle adjustment
- Door latch

PINPOINT TEST P: EXTERIOR DOOR RELEASE HANDLE STICKS

Test Step	Result / Action to Take
P1 CHECK FOR A BROKEN RETURN SPRING <ul style="list-style-type: none"> Remove the door trim panel. Refer to Section 501-05. Open the clip and disconnect the exterior door handle actuating rod.  <p>N0088081</p> <ul style="list-style-type: none"> Pull and release the exterior door handle. Does the exterior door handle return to a closed position once released? 	Yes GO to P2. No INSTALL a new exterior door handle. REFER to Exterior Door Handle in this section. TEST the system for normal operation.
P2 CARRY OUT THE EXTERIOR DOOR HANDLE ADJUSTMENT	

<ul style="list-style-type: none"> Carry out the exterior door handle to latch rod adjustment. Refer to Door Handle to Latch Rod Adjustment in this section. Does the exterior door handle operate correctly? 	<p>Yes The concern was caused by an improperly adjusted exterior door handle.</p> <p>No GO to P3.</p>
<p>P3 CHECK THE EXTERIOR DOOR HANDLE AND LINKAGE OPERATION</p>	<p>Yes REPAIR as necessary. TEST the system for normal operation.</p> <p>No INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> Operate the exterior door handle while observing the linkage. Are any of the exterior door handle components or linkages binding? 	

Pinpoint Test Q: Interior Door Release Handle Sticks

Normal Operation

The interior door handle is connected to the door latch by an actuating cable. When the interior door handle is pulled it causes the cable to pull 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.

This pinpoint test is intended to diagnose the following:

- Binding cable
- Broken handle return spring
- Door latch

PINPOINT TEST Q: INTERIOR DOOR RELEASE HANDLE STICKS

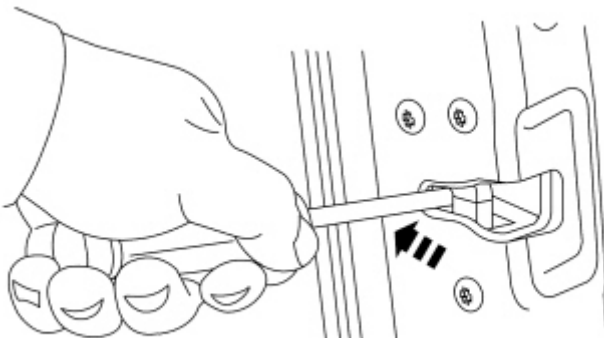
Test Step	Result / Action to Take
<p>Q1 CHECK FOR A BROKEN RETURN SPRING</p>	<p>Yes GO to Q2.</p> <p>No INSTALL a new interior door handle. REFER to Interior Door Handle in this section. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> Remove the interior door handle. Refer to Interior Door Handle in this section. Pull and release the interior door handle. Does the interior door handle return to a closed position once released? 	
<p>Q2 CHECK THE INTERIOR DOOR HANDLE CABLE OPERATION</p>	<p>Yes INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.</p> <p>No REPAIR as necessary. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> Remove the door latch release cable. Observe the door latch release cable for any damage or binding. Is the door latch release cable OK? 	

Pinpoint Test R: Squeak/Rattle/Chucking Noise From Door

This pinpoint test is intended to diagnose the following:

- Door alignment
- Striker adjustment
- Door latch

PINPOINT TEST R: SQUEAK/RATTLE/CHUCKING NOISE FROM DOOR

Test Step	Result / Action to Take
<p>R1 CHECK FOR ANY LOOSE COMPONENTS</p> <ul style="list-style-type: none"> • Remove the door trim panel. REFER to Section 501-05. • Inspect inside the door for any loose components. • Are there any loose components inside the door? 	<p>Yes REPAIR as necessary. TEST the system for normal operation.</p> <p>No GO to R2.</p>
<p>R2 CHECK THE STRIKER ADJUSTMENT</p> <ul style="list-style-type: none"> • Check the adjustment of the striker. REFER to Section 501-03. • Is the striker adjusted correctly? 	<p>Yes GO to R3.</p> <p>No ADJUST the striker as necessary. TEST the system for normal operation.</p>
<p>R3 CHECK THE DOOR ALIGNMENT</p> <ul style="list-style-type: none"> • Check the alignment of the door. REFER to Section 501-03. • Is the door aligned correctly? 	<p>Yes GO to R4.</p> <p>No ADJUST the door as necessary. TEST the system for normal operation.</p>
<p>R4 CHECK THE LATCH OPERATION AFTER LUBRICATION</p> <ul style="list-style-type: none"> • Lubricate the door latch. REFER to Latch Lubrication in this section. • Using a screwdriver, fully close the latch (two clicks).  <p>N0094195</p> <ul style="list-style-type: none"> • Operate the door latch and listen for the noise. • Is the original noise still present after the latch is lubricated? 	<p>Yes INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.</p> <p>No The concern was caused by an insufficiently lubricated door latch.</p>

Pinpoint Test S: Manual Door Lock Cylinder Inoperative

Normal Operation

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

door.

This pinpoint test is intended to diagnose the following:

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

PINPOINT TEST S: MANUAL DOOR LOCK CYLINDER INOPERATIVE

Test Step	Result / Action to Take
<p>S1 CHECK THE LOCK CYLINDER OPERATION AFTER LUBRICATION</p>	<p>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.</p> <p>No GO to S2.</p>
<ul style="list-style-type: none"> • Spray a lock lubricant such as Motorcraft XL-1 into the lock cylinder opening for a couple seconds. • Operate the door lock cylinder with the key. • Does the door lock and unlock using the door lock cylinder? 	
<p>S2 CHECK THE DOOR LOCK CYLINDER</p>	<p>Yes GO to S3.</p> <p>No INSTALL a new door lock cylinder. REFER to Door Lock Cylinder in this section. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> • Remove the door lock cylinder. Refer to Door Lock Cylinder in this section. • Operate the door lock cylinder with the key. • Does the door lock cylinder rotate freely to both lock and unlock positions? 	
<p>S3 CHECK THE DOOR LOCK CYLINDER LINKAGE</p>	<p>Yes REPAIR as necessary. TEST the system for normal operation.</p> <p>No INSTALL a new door latch. REFER to Door Latch in this section. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> • Operate the door lock cylinder while observing the linkage. • Is the door lock cylinder rod and lever bent or binding? 	

Pinpoint Test T: Unable To Remove The Key From The Ignition Lock Cylinder

Refer to Wiring Diagrams Cell [37](#), Shift Interlock for schematic and connector information.

Normal Operation

The ignition switch contains a key removal inhibit solenoid (automatic transmission only). The solenoid prevents the ignition lock cylinder to be turned to lock and the key removed any time the transmission selector lever is in any position except park. The inhibit solenoid receives voltage at all times from the Bussed Electrical Center (BEC) fuse 68 (20A) on circuit 1050 (LG/VT). When the transmission selector lever is in any gear except park, the selector switch closes and connects circuit 1205 (BK) to circuit 664 (YE/LG), which supplies ground to the solenoid.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Transmission selector lever
- Binding steering column components
- Ignition lock cylinder

- Ignition switch

PINPOINT TEST T: UNABLE TO REMOVE THE KEY FROM THE IGNITION LOCK CYLINDER

Test Step	Result / Action to Take
T1 CHECK FOR AN ENERGIZED KEY REMOVAL INHIBIT SOLENOID	<p>Yes REFER to Section 211-05 to continue diagnosis of the key removal inhibit solenoid system.</p> <p>No GO to T2.</p>
<ul style="list-style-type: none"> • Remove the BEC fuse 68 (20A). • Attempt to turn the ignition key to the run position and then back to the lock position and remove the key. • Does the ignition lock cylinder turn to the lock position and can the key be removed? 	
T2 CHECK THE IGNITION LOCK CYLINDER FOR BINDING	<p>Yes REFER to Section 211-05 to continue diagnosis of the steering column for any binding steering column components or ignition switch.</p> <p>No INSTALL a new ignition lock cylinder. REFER to Ignition Lock Cylinder in this section. TEST the system for normal operation.</p>
<ul style="list-style-type: none"> • Remove the ignition lock cylinder. REFER to Ignition Lock Cylinder in this section. • Rotate the ignition lock cylinder through all positions using the key. • Does the ignition lock cylinder freely rotate through all positions and can the key be removed from the lock cylinder? 	
