




## Steering Column Switches

### Special Tool(s)

 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST2574-A	Flex Probe Kit 105-R025B or equivalent
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

### Principles of Operation

#### Ignition Switch

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

The ignition switch is controlled by the ignition lock cylinder with a key. When the ignition lock cylinder is turned using the key, a mechanical connection positions the ignition switch to the selected position and allows the ignition switch to send voltage to the [SJB](#). The ignition switch also contains a key-in-ignition system that allows the instrument cluster to detect when the key has been inserted in the ignition switch. This information is used by the instrument cluster for the brake shift interlock system and for the chime warning system. For information on the brake shift interlock system, refer to [Section 307-05](#). For information on the chime warning system, refer to [Section 413-01](#).

The available ignition switch positions are:

- OFF
- ACC
- RUN
- START

#### Multifunction Switch

The multifunction switches control various components electrically. The headlamp switch sends constant voltage to the headlamps when placed in the ON position, while the flash-to-pass is a momentary switch used to send voltage to the headlamp high beams only. The headlamp high beam/low beam switch sends voltage to the low or high beam headlamps while the headlamps are on. The turn signal switch portion of the multifunction switch

operates the left and right turn signals. The windshield wiper switch function uses a ground signal to activate the various wiper modes and the wiper/washer.

For diagnosis and testing of the multifunction switch, refer to [Section 417-01](#) for headlamps and turn signal concerns, and [Section 501-16](#) for wiper and washer concerns.

### 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"><li>● Ignition key</li><li>● Ignition key turning effort</li><li>● Ignition switch</li><li>● Multifunction switch</li><li>● Steering column shrouds</li></ul>	<ul style="list-style-type: none"><li>● Bussed Electrical Center (BEC)</li><li>● <a href="#">BEC</a> fuse 68 (20A)</li><li>● Ignition switch</li><li>● Passive Anti-Theft System (PATS) transceiver</li><li>● Smart Junction Box (SJB)</li><li>● <a href="#">SJB</a> fuse(s):<ul style="list-style-type: none"><li>■ 3 (10A)</li><li>■ 7 (10A)</li><li>■ 20 (10A)</li><li>■ 21 (10A)</li></ul></li><li>● Wiring, terminals or connectors</li></ul>

**NOTE:** For multifunction switch concerns, refer to one of the following sections:

- Exterior Lighting, [Section 417-01](#).
- Wipers and Washers, [Section 501-16](#).

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 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 the Smart Junction Box (SJB) DTC Chart. For all other DTCs, refer to [Section 419-10](#).
10. If no DTCs related to the concern are retrieved, GO to [Symptom Chart](#).

### Smart Junction Box (SJB) DTC Chart

DTC	Description	Source	Action
B1356	Ignition RUN Circuit Open	Smart Junction Box (SJB)	<a href="#">GO to Pinpoint Test C</a> .
B1360	Ignition RUN/ACC Circuit Open	<a href="#">SJB</a>	<a href="#">GO to Pinpoint Test B</a> .
B1365	Ignition START Circuit Short to Battery	<a href="#">SJB</a>	<a href="#">GO to Pinpoint Test E</a> .
—	All other <a href="#">SJB</a> DTCs	<a href="#">SJB</a>	REFER to the Master DTC Chart in <a href="#">Section 419-10</a> .

### Symptom Chart

#### Symptom Chart

Condition	Possible Sources	Action
<ul style="list-style-type: none"> <li>• No power in all ignition switch positions</li> </ul>	<ul style="list-style-type: none"> <li>• Fuse</li> <li>• Wiring, terminals or connectors</li> <li>• Ignition switch</li> <li>• Bussed Electrical Center (BEC)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test A</a>.</li> </ul>
<ul style="list-style-type: none"> <li>• No power in ACC</li> </ul>	<ul style="list-style-type: none"> <li>• Fuse(s)</li> <li>• Wiring, terminals or connectors</li> <li>• Ignition switch</li> <li>• Smart Junction Box (SJB)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test B</a>.</li> </ul>
<ul style="list-style-type: none"> <li>• No power in RUN</li> </ul>	<ul style="list-style-type: none"> <li>• Wiring, terminals or connectors</li> <li>• Ignition switch</li> <li>• <a href="#">SJB</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test C</a>.</li> </ul>
<ul style="list-style-type: none"> <li>• No power in START</li> </ul>	<ul style="list-style-type: none"> <li>• Wiring, terminals or connectors</li> <li>• Ignition switch</li> <li>• <a href="#">SJB</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">GO to Pinpoint Test D</a>.</li> </ul>
<ul style="list-style-type: none"> <li>• The ignition key is inoperative/hard to turn</li> </ul>	<ul style="list-style-type: none"> <li>• Ignition key</li> <li>• Ignition lock cylinder</li> <li>• Ignition switch</li> </ul>	<ul style="list-style-type: none"> <li>• GO to the Ignition Switch — Mechanical Component Test in this section.</li> </ul>
<ul style="list-style-type: none"> <li>• The multifunction switch does not operate correctly</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch</li> </ul>	<ul style="list-style-type: none"> <li>• For exterior lighting concerns, REFER to diagnosis and testing in <a href="#">Section 417-01</a>.</li> <li>• For wiper and washer concerns, REFER to diagnosis and testing in <a href="#">Section 501-16</a>.</li> </ul>

## Pinpoint Tests

### Pinpoint Test A: No Power in All Ignition Switch Positions

Refer to Wiring Diagrams Cell [13](#), Power Distribution/SJB for schematic and connector information.

#### Normal Operation

The ignition switch receives fused battery voltage from Bussed Electrical Center (BEC) fuse 68 (20A) along circuit 1050 (LG/VT), this voltage is then sent to the Smart Junction Box (SJB) for various systems depending on the ignition switch position. The ignition switch has 4 possible positions:

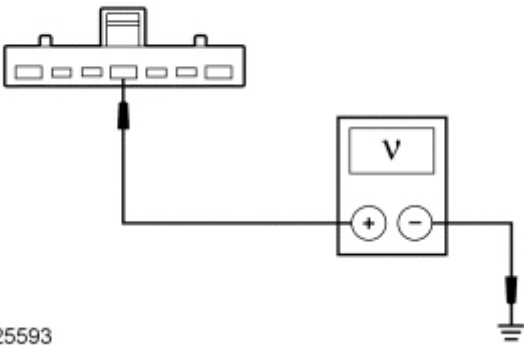
- OFF, there is no voltage sent to the [SJB](#), but voltage is sent to the instrument cluster for the key-in ignition system. Refer to [Section 413-01](#) to diagnose any key-in ignition concerns.
- ACC, the voltage is sent to the [SJB](#) along circuit 1002 (PK/BK).
- RUN, the voltage is sent to the [SJB](#) along circuit 1044 (WH/YE).
- START, the voltage is sent to the [SJB](#) along circuit 1522 (DG).

#### This pinpoint test is intended to diagnose the following:

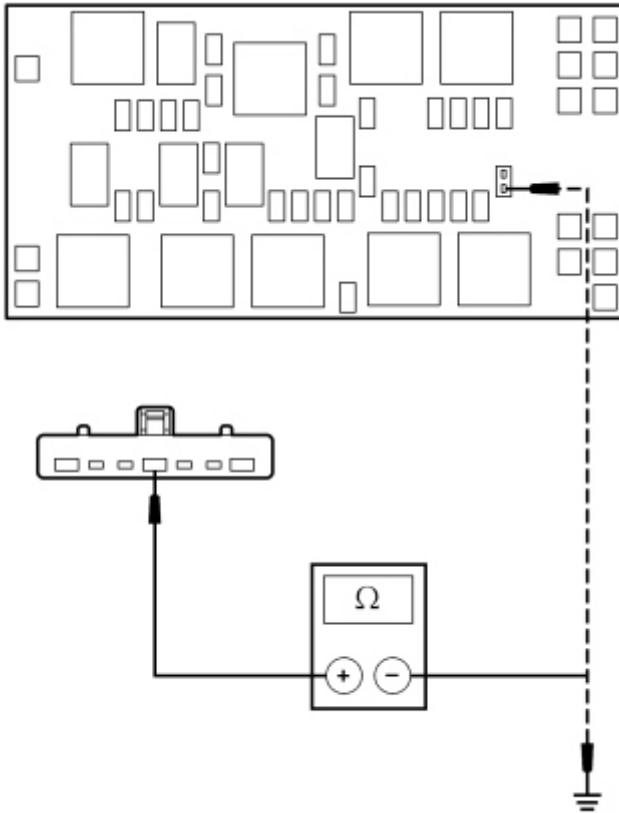
- Fuse(s)
- Wiring, terminals or connectors
- Ignition switch
- [BEC](#)
- [SJB](#)

### PINPOINT TEST A: NO POWER IN ALL IGNITION SWITCH POSITIONS

**NOTICE:** Use the Flex Probe Kit for all test connections to prevent damage to the wiring terminals. Do not use standard multi-meter probes.

Test Step	Result / Action to Take
<p><b>A1 CHECK THE VOLTAGE AT THE IGNITION SWITCH</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Ignition Switch C250.</li> <li>• Measure the voltage between ignition switch C250-4, circuit 1050 (LG/VT), harness side and ground.</li> </ul>  <p>A0025593</p> <ul style="list-style-type: none"> <li>• Is the voltage greater than 10 volts?</li> </ul>	<p><b>Yes</b> GO to <a href="#">A3</a>.</p> <p><b>No</b> VERIFY <a href="#">BEC</a> fuse 68 (20A) is OK. If not OK, refer to the Wiring Diagrams Manual to identify the possible causes of the circuit short. If OK, GO to <a href="#">A2</a>.</p>
<p><b>A2 CHECK CIRCUIT 1050 (LG/VT) FOR AN OPEN OR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>• Disconnect: <a href="#">BEC</a> Fuse 68 (20A).</li> <li>• Measure the resistance between:</li> </ul>	<p><b>Yes</b> REPAIR or INSTALL a new</p>

- ignition switch C250-4, circuit 1050 (LG/VT), harness side and **BEC** fuse 68 (20A), circuit 1050 (LG/VT), output side.
- ignition switch C250-4, circuit 1050 (LG/VT), harness side and ground.



N0012094

- Are the resistances less than 5 ohms between the ignition switch and the **BEC**, and greater than 10,000 ohms between the ignition switch and ground?

**BEC** as necessary. TEST the system for normal operation.

**No**  
REPAIR circuit 1050 (LG/VT). TEST the system for normal operation.

### A3 CHECK THE IGNITION SWITCH

- Carry out the Ignition Switch Component Test.  
Refer to Wiring Diagrams Cell [149](#) for component testing.
- Is the ignition switch OK?

**Yes**  
GO to [A4](#).

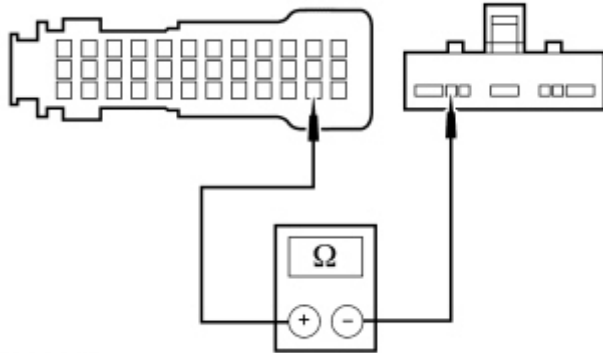
**No**  
INSTALL a new ignition switch. REFER to [Ignition Switch](#) in this section. TEST the system for normal operation.

### A4 CHECK CIRCUIT 1002 (PK/BK) FOR AN OPEN

- Disconnect: **SJB** C2280a.
- Measure the resistance between ignition switch C250-6, circuit 1002 (PK/BK), harness side and **SJB** C2280a-11, circuit 1002 (PK/BK), harness side.

**Yes**  
GO to [A5](#).

**No**  
VERIFY **SJB** fuses 20 (10A) and 21 (10A) are OK. If OK, REPAIR circuit 1002 (PK/BK). If not OK, refer to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.

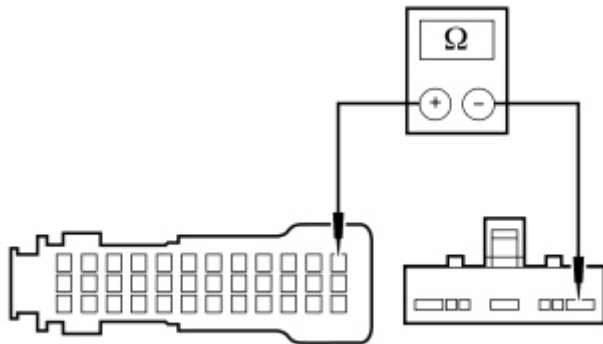


N0072215

- Is the resistance less than 5 ohms?

#### A5 CHECK CIRCUIT 1044 (WH/YE) FOR AN OPEN

- Measure the resistance between ignition switch C250-1, circuit 1044 (WH/YE), harness side and [SJB](#) C2280a-36, circuit 1044 (WH/YE), harness side.

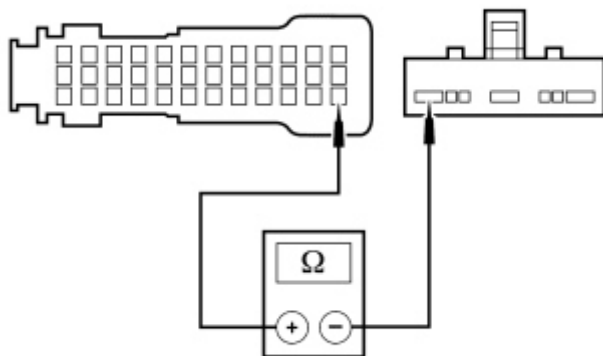


N0072216

- Is the resistance less than 5 ohms?

#### A6 CHECK CIRCUIT 1522 (DG) FOR AN OPEN

- Measure the resistance between ignition switch C250-7, circuit 1522 (DG), harness side and [SJB](#) C2280a-12, circuit 1522 (DG), harness side.



N0076805

- Is the resistance less than 5 ohms?

#### A7 CHECK FOR CORRECT [SJB](#) OPERATION

- Check [SJB](#) C2280a for:
  - corrosion.
  - pushed-out pins.
  - spread terminals.
- Connect: [SJB](#) C2280a.
- Make sure the connector seats correctly, then operate the system

**Yes**  
GO to [A6](#).

**No**  
VERIFY [SJB](#) fuses 20 (10A) and 21 (10A) are OK. If OK, REPAIR circuit 1002 (PK/BK). If not OK, refer to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.

**Yes**  
GO to [A7](#).

**No**  
VERIFY [SJB](#) fuses 20 (10A) and 21 (10A) are OK. If OK, REPAIR circuit 1002 (PK/BK). If not OK, refer to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.

**Yes**  
INSTALL a new [SJB](#). REFER to [Section 419-10](#). REPEAT the self-test.

**No**

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

The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

### Pinpoint Test B: No Power in ACC

Refer to Wiring Diagrams Cell [13](#), Power Distribution/SJB for schematic and connector information.

#### Normal Operation

When the ignition switch is turned to the ACC position, fused battery voltage is sent to the Smart Junction Box (SJB) along circuit 1002 (BK/PK).

- DTC B1360 Ignition RUN/ACC Circuit Open — If during the on-demand self test the [SJB](#) does not receive the RUN/ACC input from the ignition switch, DTC B1360 will be set.

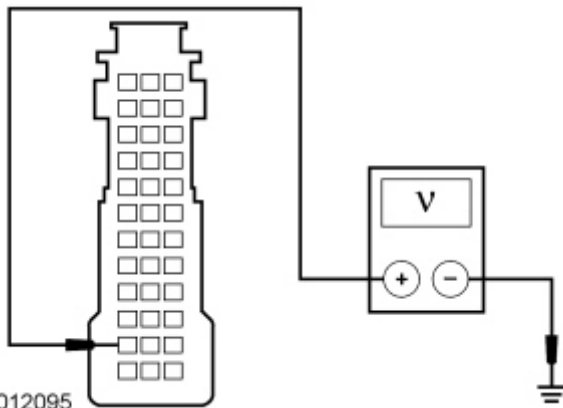
#### This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- Ignition switch
- [SJB](#)

### PINPOINT TEST B: NO POWER IN ACC

**NOTICE:** Use the Flex Probe Kit for all test connections to prevent damage to the wiring terminals. Do not use standard multi-meter probes.

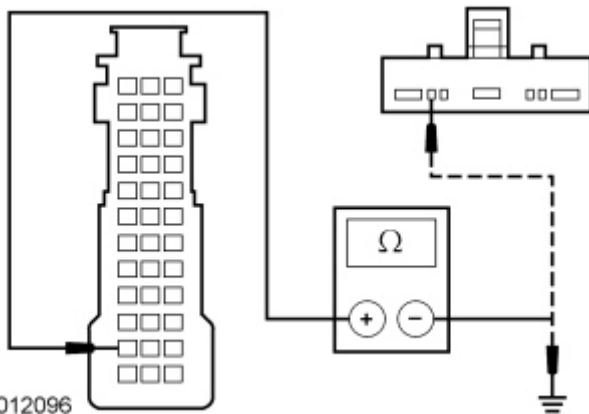
Test Step	Result / Action to Take
<b>B1 CHECK THE IGNITION SWITCH</b>	
<ul style="list-style-type: none"> <li>• Carry out the Ignition Switch Component Test.</li> </ul> <p>Refer to Wiring Diagrams Cell <a href="#">149</a> for component testing.</p> <ul style="list-style-type: none"> <li>• <b>Is the ignition switch OK?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">B2</a>.</p> <p><b>No</b> INSTALL a new ignition switch. REFER to <a href="#">Ignition Switch</a> in this section. TEST the system for normal operation.</p>
<b>B2 CHECK FOR VOLTAGE AT THE <a href="#">SJB</a></b>	
<ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: <a href="#">SJB</a> C2280a.</li> <li>• Ignition In ACC.</li> <li>• Measure the voltage between <a href="#">SJB</a> C2280a-11, circuit 1002 (BK/PK), harness side and ground.</li> </ul>	<p><b>Yes</b> GO to <a href="#">B4</a>.</p> <p><b>No</b> GO to <a href="#">B3</a>.</p>



- Is the voltage greater than 10 volts?

### B3 CHECK CIRCUIT 1002 (BK/PK) FOR AN OPEN OR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: Ignition Switch C250.
- Measure the resistance between:
  - **SJB** C2280a-11, circuit 1002 (BK/PK), harness side and ignition switch C250-6, circuit 1002 (BK/PK), harness side.
  - **SJB** C2280a-11, circuit 1002 (BK/PK), harness side and ground.



- Are the resistances less than 5 ohms between the **SJB** and the ignition switch, and greater than 10,000 ohms between the **SJB** and ground?

**Yes**  
GO to [B4](#).

**No**  
VERIFY **SJB** fuses 3 (10A) and 7 (10A) are OK. If OK, REPAIR circuit 1002 (BK/PK). If not OK, refer to the Wiring Diagrams Manual to identify the possible causes of the circuit short. TEST the system for normal operation.

### B4 CHECK FOR CORRECT **SJB** OPERATION

- Ignition OFF.
- Check **SJB** C2280a for:
  - corrosion.
  - pushed-out pins.
  - spread terminals.
- Connect: **SJB** C2280a.
- Make sure the connector seats correctly, then 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](#). REPEAT the self-test.

**No**  
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.

## Pinpoint Test C: No Power in RUN

Refer to Wiring Diagrams Cell [13](#), Power Distribution/SJB for schematic and connector information.

## Normal Operation



When the ignition switch is turned to the RUN position, fused battery voltage is sent to the Smart Junction Box (SJB) along circuit 1044 (WH/YE).

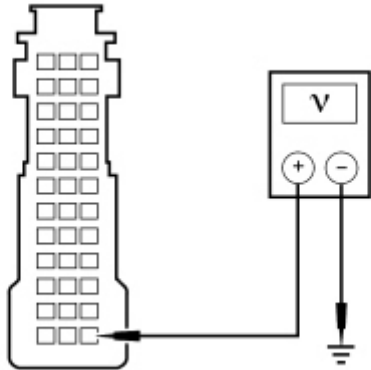
- DTC B1356 Ignition RUN Circuit Open — If during the on-demand self test the **SJB** does not receive the RUN input from the ignition switch or if the ignition switch position cannot be determined, DTC B1356 will be set.

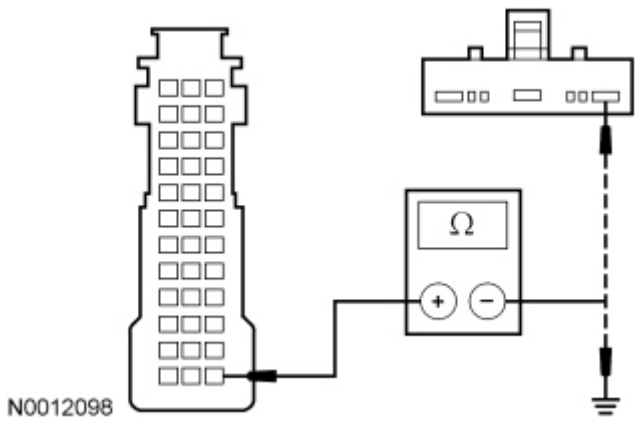
**This pinpoint test is intended to diagnose the following:**

- Wiring, terminals or connectors
- Ignition switch
- **SJB**

**PINPOINT TEST C: NO POWER IN RUN**

**NOTICE:** Use the Flex Probe Kit for all test connections to prevent damage to the wiring terminals. Do not use standard multi-meter probes.

Test Step	Result / Action to Take
<p><b>C1 CHECK THE IGNITION SWITCH</b></p> <ul style="list-style-type: none"> <li>• Carry out the Ignition Switch Component Test.</li> </ul> <p>Refer to Wiring Diagrams Cell <a href="#">149</a> for component testing.</p> <ul style="list-style-type: none"> <li>• <b>Is the ignition switch OK?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">C2</a>.</p> <p><b>No</b> INSTALL a new ignition switch. REFER to <a href="#">Ignition Switch</a> in this section. TEST the system for normal operation.</p>
<p><b>C2 CHECK FOR VOLTAGE AT THE <b>SJB</b></b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: <b>SJB</b> C2280a.</li> <li>• Ignition ON.</li> <li>• Measure the voltage between <b>SJB</b> C2280a-36, circuit 1044 (WH/YE), harness side and ground.</li> </ul>  <p>N0059338</p> <ul style="list-style-type: none"> <li>• <b>Is the voltage greater than 10 volts?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">C4</a>.</p> <p><b>No</b> GO to <a href="#">C3</a>.</p>
<p><b>C3 CHECK CIRCUIT 1044 (WH/YE) FOR AN OPEN OR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Ignition Switch C250.</li> <li>• Measure the resistance between: <ul style="list-style-type: none"> <li>▪ <b>SJB</b> C2280a-36, circuit 1044 (WH/YE), harness side and ignition switch C250-1, circuit 1044 (WH/YE), harness side.</li> <li>▪ <b>SJB</b> C2280a-36, circuit 1044 (WH/YE), harness side, and ground.</li> </ul> </li> </ul>	<p><b>Yes</b> GO to <a href="#">C4</a>.</p> <p><b>No</b> REPAIR circuit 1044 (WH/YE). TEST the system for normal operation.</p>



- Are the resistances less than 5 ohms between the **SJB** and the ignition switch, and greater than 10,000 ohms between the **SJB** and ground?

<b>C4 CHECK FOR CORRECT SJB OPERATION</b>	
<ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Check <b>SJB</b> C2280a for: <ul style="list-style-type: none"> <li>▪ corrosion.</li> <li>▪ pushed-out pins.</li> <li>▪ spread terminals.</li> </ul> </li> <li>• Connect: <b>SJB</b> C2280a.</li> <li>• Make sure the connector seats correctly, then operate the system and verify the concern is still present.</li> <li>• <b>Is the concern still present?</b></li> </ul>	<p><b>Yes</b> INSTALL a new <b>SJB</b>. REFER to <a href="#">Section 419-10</a>. REPEAT the self-test.</p> <p><b>No</b> The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.</p>

**Pinpoint Test D: No Power in START**

Refer to Wiring Diagrams Cell [13](#), Power Distribution/SJB for schematic and connector information.

**Normal Operation**

When the ignition switch is turned to the START position, fused battery voltage is sent to the Smart Junction Box (SJB) along circuit 1522 (DG).

**This pinpoint test is intended to diagnose the following:**

- Wiring, terminals or connectors
- Ignition switch
- **SJB**

**PINPOINT TEST D: NO POWER IN START**

**NOTICE:** Use the Flex Probe Kit for all test connections to prevent damage to the wiring terminals. Do not use standard multi-meter probes.

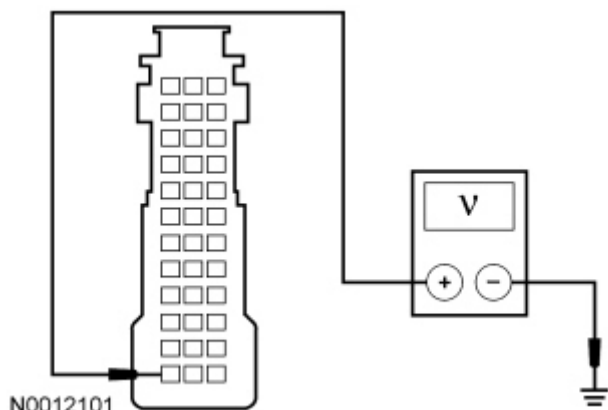
Test Step	Result / Action to Take
<b>D1 CHECK THE IGNITION SWITCH</b>	
<ul style="list-style-type: none"> <li>• Carry out the Ignition Switch Component Test.</li> </ul> <p>Refer to Wiring Diagrams Cell <a href="#">149</a> for component testing.</p>	<p><b>Yes</b> GO to <a href="#">D2</a>.</p> <p><b>No</b></p>

- Is the ignition switch OK?

INSTALL a new ignition switch. REFER to [Ignition Switch](#) in this section. TEST the system for normal operation.

#### D2 CHECK FOR VOLTAGE AT THE **SJB**

- Ignition OFF.
- Disconnect: **SJB** C2280a.
- With the ignition key in the START position, measure the voltage between **SJB** C2280a-12, circuit 1522 (DG), harness side and ground.



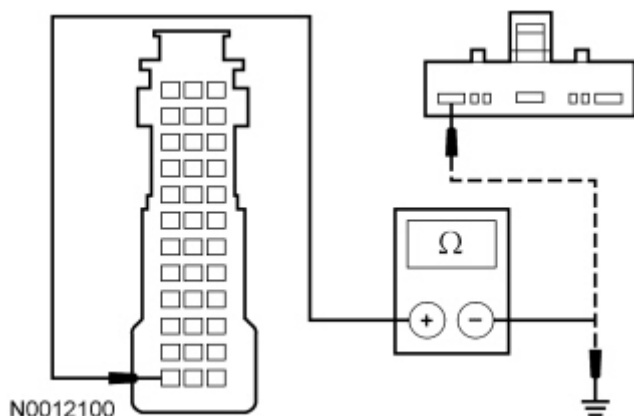
- Is the voltage greater than 10 volts?

**Yes**  
GO to [D4](#).

**No**  
GO to [D3](#).

#### D3 CHECK CIRCUIT 1522 (DG) FOR AN OPEN OR A SHORT TO GROUND

- Ignition OFF.
- Disconnect: Ignition Switch C250.
- Measure the resistance between:
  - **SJB** C2280a-12, circuit 1522 (DG), harness side and ignition switch C250-7, circuit 1522 (DG), harness side.
  - **SJB** C2280a-12, circuit 1522 (DG), harness side and ground.



- Are the resistances greater than 10,000 ohms between the **SJB** and the ignition switch, and less than 5 ohms between the **SJB** and ground?

**Yes**  
GO to [D4](#).

**No**  
REPAIR circuit 1522 (DG). TEST the system for normal operation.

#### D4 CHECK FOR CORRECT **SJB** OPERATION

- Ignition OFF.
- Check **SJB** C2280a for:
  - corrosion.
  - pushed-out pins.
  - spread terminals.
- Connect: **SJB** C2280a.
- Make sure the connector seats correctly, then 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](#). REPEAT the self-test.

**No**  
The system is operating correctly at this time. The concern may have been

caused by a loose or corroded connector. TEST the system for normal operation.

### Pinpoint Test E: DTC B1365 — Ignition START Circuit Short to Battery

Refer to Wiring Diagrams Cell [13](#), Power Distribution/SJB for schematic and connector information.

#### Normal Operation

When the ignition switch is turned to the START position, fused battery voltage is sent to the Smart Junction Box (SJB) along circuit 1522 (DG). The voltage is sent from the SJB to the audio unit along circuit 1000 (RD/BK) and to the starter relay in the Bussed Electrical Center (BEC) along circuit 32 (RD/LB).

- DTC B1365 Ignition START Circuit Short to Battery — If during the on-demand self test or during normal operation the [SJB](#) detects voltage on the START circuit while the ignition switch is in the RUN or ACC position, DTC B1365 will be set.

**This pinpoint test is intended to diagnose the following:**

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

### PINPOINT TEST E: DTC B1365 — IGNITION START CIRCUIT SHORT TO BATTERY

**NOTICE:** Use the Flex Probe Kit for all test connections to prevent damage to the wiring terminals. Do not use standard multi-meter probes.

Test Step	Result / Action to Take
<p><b>E1 CHECK THE IGNITION SWITCH</b></p> <ul style="list-style-type: none"> <li>• Carry out the Ignition Switch Component Test.</li> </ul> <p>Refer to Wiring Diagrams Cell <a href="#">149</a> for component testing.</p> <ul style="list-style-type: none"> <li>• <b>Is the ignition switch OK?</b></li> </ul>	<p><b>Yes</b> GO to <a href="#">E2</a>.</p> <p><b>No</b> INSTALL a new ignition switch. REFER to <a href="#">Ignition Switch</a> in this section. TEST the system for normal operation.</p>
<p><b>E2 CHECK CIRCUIT 1522 (DG) FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>• Disconnect: <a href="#">SJB</a> Fuse 20 (10A).</li> <li>• Ignition ON.</li> <li>• Measure the voltage between <a href="#">SJB</a> fuse 20 (10A), circuit 1522 (DG), input side and ground.</li> <li>• <b>Is any voltage present?</b></li> </ul>	<p><b>Yes</b> REPAIR circuit 1522 (DG). CLEAR the DTCs. REPEAT the self-test.</p> <p><b>No</b> GO to <a href="#">E3</a>.</p>
<p><b>E3 CHECK CIRCUITS 1000 (RD/BK) AND 32 (RD/LB) FOR A SHORT TO VOLTAGE</b></p> <ul style="list-style-type: none"> <li>• Disconnect: <a href="#">SJB</a> Fuse 21 (10A).</li> <li>• Measure the voltage between: <ul style="list-style-type: none"> <li>▪ <a href="#">SJB</a> fuse 20 (10A), circuit 1000 (RD/BK), output side and ground.</li> <li>▪ <a href="#">SJB</a> fuse 21 (10A), circuit 32 (RD/LB), output side and ground.</li> </ul> </li> <li>• <b>Is any voltage present?</b></li> </ul>	<p><b>Yes</b> If voltage is present at <a href="#">SJB</a> fuse 20 (10A), REFER to <a href="#">Section 415-00</a> to diagnose the audio system.</p> <p>If voltage is present at <a href="#">SJB</a> fuse 21 (10A), REFER to <a href="#">Section 303-06</a> to diagnose the starting system.</p> <p><b>No</b> GO to <a href="#">E4</a>.</p>

<b>E4 CHECK FOR CORRECT <u>SJB</u> OPERATION</b>	
<ul style="list-style-type: none"> <li>● Ignition OFF.</li> <li>● Check <u>SJB</u> C2280a for: <ul style="list-style-type: none"> <li>■ corrosion.</li> <li>■ pushed-out pins.</li> <li>■ spread terminals.</li> </ul> </li> <li>● Connect: <u>SJB</u> C2280a.</li> <li>● Make sure the connector seats correctly, then operate the system and verify the concern is still present.</li> <li>● <b>Is the concern still present?</b></li> </ul>	<p><b>Yes</b> INSTALL a new <u>SJB</u>. REFER to <a href="#">Section 419-10</a>. REPEAT the self-test.</p> <p><b>No</b> The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. TEST the system for normal operation.</p>

## Component Tests

### Ignition Switch — Mechanical

The following conditions can cause difficulty in operating the ignition switch and lock cylinder:

- Burrs on the lock cylinder key
- Insufficient lube on the lock cylinder
- Binding lock cylinder
- Burrs or foreign material around the rack and pinion actuator in the lock cylinder housing
- Insufficient lube on the actuator (do not apply lubricant to the inside of the ignition switch)
- Binding ignition switch

If the steering wheel lock is engaged with the wheels loaded against a curb, high effort will be necessary to turn the key from lock. Turn the steering wheel to either side of the lock to unload the system.

Carry out the following test to determine if the ignition switch and lock cylinder are operating correctly.

1. Inspect the ignition key for any burrs, damage or incorrect cut. Have a new ignition key made as necessary.
2. **NOTE:** The steering wheel may be locked full left or full right. If the steering wheel is locked, it will be necessary to apply turning effort to the steering wheel in the direction of the lock while turning the key.

Turn the key to the ACC position and then the RUN position.

- If the ignition key turns to the ACC and RUN position, continue with Step 3.
- If the ignition key will not turn to the ACC and RUN position, continue with Step 4.

3. **NOTE:** The ignition switch and lock cylinder should return from the START position back to the RUN position without assistance.

Turn the ignition key to the START position and release the key.

- If the ignition switch and lock cylinder return from the START position back to the RUN position without assistance, the ignition switch is operating correctly at this time.
- If the ignition switch and lock cylinder do not return from the START position back to the RUN position without assistance, continue with Step 4.

4. Remove the ignition lock cylinder. Refer to [Section 501-14](#).
5. Rotate the ignition lock cylinder through all of the switch positions.
  - If the lock cylinder operates correctly, continue with Step 6.
  - If the lock cylinder does not operate correctly, install a new ignition lock cylinder. Refer to [Section 501-14](#).
6. Check for binding or sticking ignition switch actuating rod, burrs around the rack-and-pinion actuator in the

ignition lock cylinder housing or insufficient lubrication.

- If there is sufficient lubrication and there are no burrs, binding or sticking conditions; install a new ignition switch. Refer to [Ignition Switch](#) in this section.
- If there is insufficient lubrication, burrs, binding or sticking conditions; repair or lubricate as necessary.

### **Ignition Switch — Electrical**

Refer to Wiring Diagrams Cell [149](#) for component testing.

### **Multifunction Switch — Electrical**

Refer to Wiring Diagrams Cell [149](#) for component testing.

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