

## 211-05 Steering Wheel and Column Electrical Components Diagnosis and Testing

2019 Ranger

Procedure revision date: 11/1/2018

### Steering Wheel and Column Electrical Components

#### DTC Charts

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

#### BCM DTC Chart

DTC	Description	Action
B108A:01	Start Button: General Electrical Failure	<a href="#">GO to Pinpoint Test F</a>
B108A:24	Start Button: Signal Stuck High	<a href="#">GO to Pinpoint Test F</a>
B1142:29	Ignition Status 1: Signal Invalid	<ul style="list-style-type: none"> <li>For vehicles equipped with a push button ignition switch, <a href="#">GO to Pinpoint Test F</a></li> <li>For vehicles equipped with a conventional ignition switch, <a href="#">GO to Pinpoint Test C</a></li> </ul>
B1240:11	Start Button Mode Indicator: Circuit Short to Ground	<a href="#">GO to Pinpoint Test G</a>
B1240:15	Start Button Mode Indicator: Circuit Short to Battery or Open	<ul style="list-style-type: none"> <li>If the ignition mode indicator is inoperative, <a href="#">GO to Pinpoint Test G</a></li> <li>If the ignition mode indicator is always on, <a href="#">GO to Pinpoint Test H</a></li> </ul>
B130F:12	Run Accessory Control: Circuit Short to Battery	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B130F:14	Run Accessory Control: Circuit Short to Ground or Open	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B1310:12	Run/Start Control: Circuit Short to Battery	<ul style="list-style-type: none"> <li>For vehicles equipped with a push button ignition switch, <a href="#">GO to Pinpoint Test F</a></li> <li>For vehicles equipped with a conventional ignition switch, <a href="#">GO to Pinpoint Test C</a></li> </ul>
B1310:14	Run/Start Control: Circuit Short to Ground or Open	<ul style="list-style-type: none"> <li>For vehicles equipped with a push button ignition switch, <a href="#">GO to Pinpoint Test F</a></li> <li>For vehicles equipped with a conventional ignition switch, <a href="#">GO to Pinpoint Test C</a></li> </ul>
B1472:12	Ignition Key Removal Inhibit: Circuit Short To Battery	<a href="#">GO to Pinpoint Test E</a>
B1472:14	Ignition Key Removal Inhibit: Circuit Short To Ground or Open	<a href="#">GO to Pinpoint Test E</a>
U300A:01	Ignition Switch: General Electrical Failure	<a href="#">GO to Pinpoint Test J</a>
All other Diagnostic Trouble Codes (DTCs)	-	REFER to: <a href="#">Body Control Module (BCM)</a> (419-10 Multifunction Electronic Modules, Diagnosis and Testing).

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 REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

### **SCCM DTC Chart**

<b>DTC</b>	<b>Description</b>	<b>Action</b>
B10AD:01	Rain Sensor: General Electrical Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B10AD:02	Rain Sensor: General Signal Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B10AD:08	Rain Sensor: Bus Signal/Message Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B10AD:49	Rain Sensor: Internal Electronic Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B10AD:55	Rain Sensor: Not Configured	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B10AD:9A	Rain Sensor: Component or System Operating Conditions	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B112B:04	Steering Wheel Module: System Internal Failure	<a href="#">GO to Pinpoint Test I</a>
B112B:44	Steering Wheel Module: Data Memory Failure	<a href="#">GO to Pinpoint Test I</a>
B112B:45	Steering Wheel Module: Program Memory Failure	<a href="#">GO to Pinpoint Test I</a>
B112B:46	Steering Wheel Module: Calibration / Parameter Memory Failure	<a href="#">GO to Pinpoint Test I</a>
B112B:49	Steering Wheel Module: Internal Electronic Failure	<a href="#">GO to Pinpoint Test I</a>
B1131:01	Wiper motor module: General Electrical Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B1131:02	Wiper motor module: General Signal Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B1131:08	Wiper motor module: Bus Signal/Message Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B1131:49	Wiper motor module: Internal Electronic Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B1131:55	Wiper motor module: Not Configured	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).

<b>DTC</b>	<b>Description</b>	<b>Action</b>
B1131:9A	Wiper motor module: Component or System Operating Conditions	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B124C:96	Turn Indicator Stalk Switch Pack: Component Internal Failure	REFER to: <a href="#">Turn Signal and Hazard Lamps</a> (417-01 Exterior Lighting, Diagnosis and Testing).
B124C:9E	Turn Indicator Stalk Switch Pack: Stuck On	REFER to: <a href="#">Turn Signal and Hazard Lamps</a> (417-01 Exterior Lighting, Diagnosis and Testing).
B124E:11	Wiper Stalk Switch Pack: Circuit Short To Ground	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B124E:13	Wiper Stalk Switch Pack: Circuit Open	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B124E:55	Wiper Stalk Switch Pack: Not Configured	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B124E:96	Wiper Stalk Switch Pack: Component Internal Failure	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B124E:9E	Wiper Stalk Switch Pack: Stuck On	REFER to: <a href="#">Wipers and Washers</a> (501-16 Wipers and Washers, Diagnosis and Testing).
B137F:11	Steering Wheel Left Switch Pack: Circuit Short To Ground	For a message center concern, REFER to: <a href="#">Instrumentation, Message Center and Warning Chimes</a> (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). . For a cruise control concern with adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing). . For a cruise control concern without adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03A Cruise Control, Diagnosis and Testing).
B137F:13	Steering Wheel Left Switch Pack: Circuit Open	For a message center concern, REFER to: <a href="#">Instrumentation, Message Center and Warning Chimes</a> (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). . For a cruise control concern with adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing). . For a cruise control concern without adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03A Cruise Control, Diagnosis and Testing).
B137F:4A	Steering Wheel Left Switch Pack: Incorrect Component Installed	For a message center concern, REFER to: <a href="#">Instrumentation, Message Center and Warning Chimes</a> (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). . For a cruise control concern with adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing). . For a cruise control concern without adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03A Cruise Control, Diagnosis and Testing).

<b>DTC</b>	<b>Description</b>	<b>Action</b>
B137F:96	Steering Wheel Left Switch Pack: Component Internal Failure	For a message center concern, REFER to: <a href="#">Instrumentation, Message Center and Warning Chimes</a> (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). . For a cruise control concern with adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing). . For a cruise control concern without adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03A Cruise Control, Diagnosis and Testing).
B137F:9E	Steering Wheel Left Switch Pack: Stuck On	For a message center concern, REFER to: <a href="#">Instrumentation, Message Center and Warning Chimes</a> (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). . For a cruise control concern with adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing). . For a cruise control concern without adaptive cruise control, REFER to: <a href="#">Cruise Control</a> (419-03A Cruise Control, Diagnosis and Testing).
B1380:11	Steering Wheel Right Switch Pack: Circuit Short To Ground	REFER to: <a href="#">Information and Entertainment System</a> (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC 3, Diagnosis and Testing).
B1380:13	Steering Wheel Right Switch Pack: Circuit Open	REFER to: <a href="#">Information and Entertainment System</a> (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC 3, Diagnosis and Testing).
B1380:4A	Steering Wheel Right Switch Pack: Incorrect Component Installed	REFER to: <a href="#">Information and Entertainment System</a> (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC 3, Diagnosis and Testing).
B1380:96	Steering Wheel Right Switch Pack: Component Internal Failure	REFER to: <a href="#">Information and Entertainment System</a> (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC 3, Diagnosis and Testing).
B1380:9E	Steering Wheel Right Switch Pack: Stuck On	REFER to: <a href="#">Information and Entertainment System</a> (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC 3, Diagnosis and Testing).
B1385:55	Lane Keeping Aid System: Not Configured	REFER to: <a href="#">Lane Keeping System</a> (419-07 Lane Keeping System, Diagnosis and Testing).
U0100:00	Lost Communication With ECM/PCM "A": No Sub Type Information	<a href="#">GO to Pinpoint Test K</a>
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	<a href="#">GO to Pinpoint Test K</a>
U0146:00	Lost Communication With Gateway "A": No Sub Type Information	<a href="#">GO to Pinpoint Test K</a>
U0151:00	Lost Communication With Restraints Control Module: No Sub Type Information	<a href="#">GO to Pinpoint Test K</a>
U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	<a href="#">GO to Pinpoint Test L</a>

<b>DTC</b>	<b>Description</b>	<b>Action</b>
U0164:00	Lost Communication With HVAC Control Module: No Sub Type Information	<a href="#">GO to Pinpoint Test L</a>
U023A:00	Lost Communication With Image Processing Module A: No Sub Type Information	<a href="#">GO to Pinpoint Test L</a>
U0422:00	Invalid Data Received From Body Control Module: No Sub Type Information	<a href="#">GO to Pinpoint Test M</a>
U053B:00	Invalid Data Received From Image Processing Module A: No Sub Type Information	<a href="#">GO to Pinpoint Test M</a>
U2101:00	Control Module Configuration Incompatible: No Sub Type Information	<a href="#">GO to Pinpoint Test N</a>
U2200:00	Control Module Configuration Memory Corrupt: No Sub Type Information	<a href="#">GO to Pinpoint Test N</a>
U3003:16	Battery Voltage: Circuit Voltage Below Threshold	<a href="#">GO to Pinpoint Test O</a>
U3003:17	Battery Voltage: Circuit Voltage Above Threshold	<a href="#">GO to Pinpoint Test P</a>

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

## Symptom Charts

### Symptom Chart: Ignition Switch - Conventional

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

### Symptom Chart

<b>Condition</b>	<b>Possible Causes</b>	<b>Actions</b>
No power in all ignition switch positions	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test A</a></li> </ul>
No power in ACC	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test B</a></li> </ul>
No power in ON	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test C</a></li> </ul>
No power in START	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li>DIAGNOSE the no-start condition. Refer to the appropriate section in Group 303 for the procedure.</li> </ul>

Condition	Possible Causes	Actions
Key not detected displays in the message center	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li>REFER to: <a href="#">Perimeter Anti-Theft Alarm</a> (419-01A Perimeter Anti-Theft Alarm, Diagnosis and Testing).</li> </ul>
The ignition key cannot be returned to the OFF position	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test D</a></li> </ul>
The ignition key can be turned to the OFF position when the selector lever is not in PARK	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test E</a></li> </ul>
The ignition lock cylinder is difficult to turn	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li>REFER to: <a href="#">Locks, Latches and Entry Systems</a> (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).</li> </ul>

### Symptom Chart: Ignition Switch - Push Button

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### Symptom Chart

Condition	Possible Causes	Actions
No power in ON	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test F</a></li> </ul>
Key not detected displays in the message center	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li>REFER to: <a href="#">Perimeter Anti-Theft Alarm</a> (419-01A Perimeter Anti-Theft Alarm, Diagnosis and Testing).</li> </ul>
The ignition mode indicator is inoperative	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test G</a></li> </ul>
The ignition mode indicator is always on	<ul style="list-style-type: none"> <li>Refer to Pinpoint Test</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">GO to Pinpoint Test H</a></li> </ul>

### Pinpoint Tests

► [PINPOINT TEST A : NO POWER IN ALL IGNITION SWITCH POSITIONS - CONVENTIONAL IGNITION SWITCH](#)

► [PINPOINT TEST B : NO POWER IN ACC - CONVENTIONAL IGNITION SWITCH](#)

- ▶ PINPOINT TEST C : NO POWER IN ON - CONVENTIONAL IGNITION SWITCH
- ▶ PINPOINT TEST D : THE IGNITION KEY CANNOT BE RETURNED TO THE OFF POSITION
- ▶ PINPOINT TEST E : THE IGNITION KEY CAN BE TURNED TO THE OFF POSITION WHEN THE SELECTOR LEVER IS NOT IN PARK
- ▶ PINPOINT TEST F : NO POWER IN ON - PUSH BUTTON IGNITION SWITCH
- ▶ PINPOINT TEST G : THE IGNITION MODE INDICATOR IS INOPERATIVE
- ▶ PINPOINT TEST H : THE IGNITION MODE INDICATOR IS ALWAYS ON
- ▶ PINPOINT TEST I : DTCS B112B:04, B112B:44, B112B:45, B112B:46 OR B112B:49
- ▶ PINPOINT TEST J : U300A:01
- ▶ PINPOINT TEST K : NETWORK COMMUNICATION CONCERNS U0100:00, U0140:00, U0146:00 OR U0151:00
- ▶ PINPOINT TEST L : NETWORK COMMUNICATION CONCERNS U0155:00, U0164:00, U023A:00 OR U0241:00
- ▶ PINPOINT TEST M : NETWORK COMMUNICATION CONCERNS U0422:00, U053B:00
- ▶ PINPOINT TEST N : U2101:00, U2200:00
- ▶ PINPOINT TEST O : U3003:16
- ▶ PINPOINT TEST P : U3003:17

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