

2006 Ford Truck Explorer 2WD V6-4.0L VIN E

Vehicle > Instrument Panel, Gauges and Warning Indicators > Testing and Inspection > Pinpoint Tests > Pinpoint Tests - Instrument Cluster

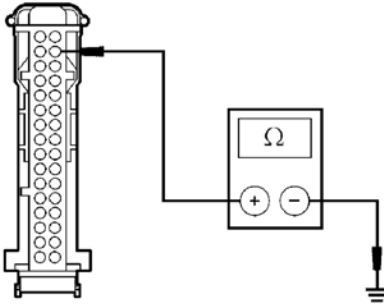
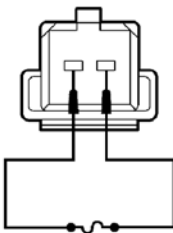
## TEST H: BRAKE WARNING INDICATOR IS NEVER/ALWAYS ON

### Pinpoint Test H: The Brake Warning Indicator Is Never/Always On

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<b>NOTICE:</b> 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
<b>H1 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCs) FROM BOTH CONTINUOUS AND ON-DEMAND SJB SELF-TESTS</b> <ul style="list-style-type: none"> <li>Retrieve the recorded SJB DTCs from the continuous and on-demand self-tests.</li> <li>Is SJB DTC C1769 retrieved?</li> </ul>	<b>Yes</b> GO to H5. If any other SJB DTCs are retrieved, REFER to <a href="#">Body Control System</a> to continue diagnosis of the DTCs. <b>No</b> GO to H2.
<b>H2 CARRY OUT THE INSTRUMENT CLUSTER INDICATOR LAMP CONTROL ACTIVE COMMAND USING THE DIAGNOSTIC TOOL</b> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Enter the following diagnostic mode on the scan tool: Instrument Cluster Active Command.</li> <li>Select the instrument cluster indicator lamp control active command. Trigger the brake warning indicator active command on and off. Observe the brake warning indicator.</li> <li>Does the brake warning indicator illuminate when triggered on, and turn off when triggered off?</li> </ul>	<b>Yes</b> GO to H3. <b>No</b> GO to H14.
<b>H3 CHECK THE PARKING BRAKE SWITCH PID</b> <ul style="list-style-type: none"> <li>Enter the following diagnostic mode on the scan tool: SJB Parking Brake Switch PID.</li> <li>Monitor the SJB parking brake switch PID while applying and releasing the parking brake.</li> <li>Does the PID agree with the parking brake position?</li> </ul>	<b>Yes</b> GO to H9. <b>No</b> If the PID indicates that the parking brake is always applied, GO to H4. If the PID indicates that the parking brake is never applied, GO to H6.

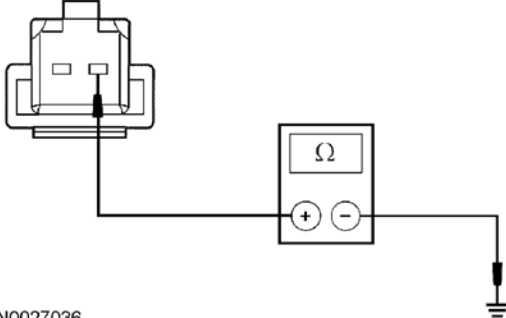
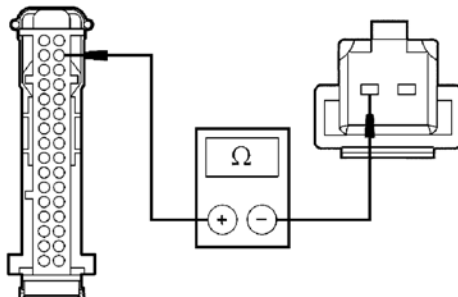
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**PINPOINT TEST H: THE BRAKE WARNING INDICATOR IS NEVER/ALWAYS ON (Continued)**

	Test Step	Result / Action to Take
H4	<p><b>CHECK THE PARKING BRAKE SWITCH (INDICATOR ALWAYS ON)</b></p> <ul style="list-style-type: none"> <li>• Disconnect: Parking Brake Switch C2015.</li> <li>• Observe the brake warning indicator.</li> <li>• <b>Does the brake warning indicator continue to illuminate?</b></li> </ul>	<p><b>Yes</b> GO to H5.</p> <p><b>No</b> INSTALL a new parking brake switch. TEST the system for normal operation.</p>
H5	<p><b>CHECK CIRCUIT CCB09 (GY/BU) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: SJB C2280b.</li> <li>• Measure the resistance between the SJB C2280b-18, circuit CCB09 (GY/BU), harness side and ground.</li> </ul>  <p>N0027850</p> <ul style="list-style-type: none"> <li>• <b>Is the resistance greater than 10,000 ohms?</b></li> </ul>	<p><b>Yes</b> GO to H15.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
H6	<p><b>CHECK THE PARKING BRAKE SWITCH (INDICATOR INOPERATIVE)</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Parking Brake Switch C2015.</li> <li>• Ignition ON.</li> <li>• Connect a fused (5A) jumper wire between the parking brake switch C2015-1, circuit GD143 (BK/VT), harness side and the parking brake switch C2015-2, circuit CCB09 (GY/BU), harness side.</li> </ul>  <p>N0002774</p> <ul style="list-style-type: none"> <li>• <b>Does the brake warning indicator illuminate?</b></li> </ul>	<p><b>Yes</b> INSTALL a new parking brake switch. TEST the system for normal operation.</p> <p><b>No</b> GO to H7.</p>
H7	<p><b>CHECK CIRCUIT GD143 (BK/VT) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> </ul>	

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**PINPOINT TEST H: THE BRAKE WARNING INDICATOR IS NEVER/ALWAYS ON (Continued)**

	Test Step	Result / Action to Take
<b>H7</b>	<p><b>CHECK CIRCUIT GD143 (BK/VT) FOR AN OPEN (Continued)</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the parking brake switch C2015-1, circuit GD143 (BK/VT), harness side and ground.</li> </ul>  <p>N0027036</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to H8.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
<b>H8</b>	<p><b>CHECK CIRCUIT CCB09 (GY/BU) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Disconnect: SJB C2280b.</li> <li>Measure the resistance between the SJB C2280b-18, circuit CCB09 (GY/BU), harness side and the parking brake switch C2015-2, circuit CCB09 (GY/BU), harness side.</li> </ul>  <p>N0027545</p> <ul style="list-style-type: none"> <li><b>Is the resistance less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to H15.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
<b>H9</b>	<p><b>CHECK THE ABS MODULE OPERATION</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Brake Fluid Level Switch C124.</li> <li>Ignition ON.</li> <li>Observe the brake warning indicator after the instrument cluster proves out.</li> </ul>	

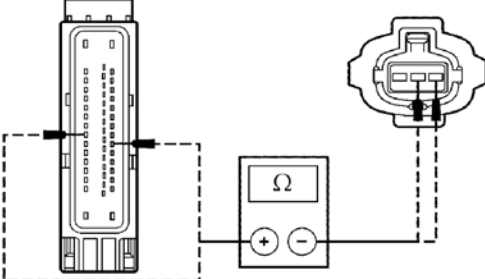
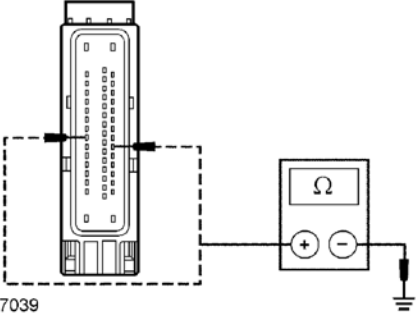
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**PINPOINT TEST H: THE BRAKE WARNING INDICATOR IS NEVER/ALWAYS ON (Continued)**

	Test Step	Result / Action to Take
<p><b>H9</b></p> <p><b>CHECK THE ABS MODULE OPERATION (Continued)</b></p> <ul style="list-style-type: none"> <li>Connect a fused (5A) jumper wire between the brake fluid level switch C124-3, circuit CMC19 (GY/VT), harness side and the brake fluid level switch C124-2, circuit RMC19 (YE/GY), harness side.</li> </ul> <div data-bbox="365 336 592 588" data-label="Diagram"> </div> <p>N0002771</p> <ul style="list-style-type: none"> <li>Does the brake warning indicator illuminate with the brake fluid level switch disconnected, and turn off when the jumper wire is in place?</li> </ul>	<p><b>Yes</b> REMOVE the jumper wire. GO to H10.</p> <p><b>No</b> REMOVE the jumper wire. GO to H11.</p>	
<p><b>H10</b></p> <p><b>CHECK CIRCUIT GD120 (BK/GN) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Measure the resistance between the brake fluid level switch C124-1, circuit GD120 (BK/GN), harness side and ground.</li> </ul> <div data-bbox="251 871 706 1144" data-label="Diagram"> </div> <p>A0037172</p> <ul style="list-style-type: none"> <li>Is the resistance less than 5 ohms?</li> </ul>	<p><b>Yes</b> INSTALL a new brake master cylinder. TEST the system for normal operation.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>	
<p><b>H11</b></p> <p><b>CHECK CIRCUITS CMC19 (GY/VT) AND RMC19 (YE/GY) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: ABS Module C-155.</li> </ul>		

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**PINPOINT TEST H: THE BRAKE WARNING INDICATOR IS NEVER/ALWAYS ON (Continued)**

	Test Step	Result / Action to Take
<p><b>H11</b></p>	<p><b>CHECK CIRCUITS CMC19 (GY/VT) AND RMC19 (YE/GY) FOR AN OPEN (Continued)</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the ABS module C155-39, circuit CMC19 (GY/VT), harness side and the brake fluid level switch C124-3, circuit CMC19 (GY/VT), harness side; and between the ABS module C155-7, circuit RMC19 (YE/GY), harness side and the brake fluid level switch C124-2, circuit RMC19 (YE/GY), harness side.</li> </ul>  <p>N0026167</p> <ul style="list-style-type: none"> <li><b>Are the resistances less than 5 ohms?</b></li> </ul>	<p><b>Yes</b> GO to H12.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
<p><b>H12</b></p>	<p><b>CHECK CIRCUITS CMC19 (GY/VT) AND RMC19 (YE/GY) FOR A SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Measure the resistance between the ABS module C155-39, circuit CMC19 (GY/VT), harness side and ground; and between the ABS module C155-7, circuit RMC19 (YE/GY), harness side and ground.</li> </ul>  <p>N0027039</p> <ul style="list-style-type: none"> <li><b>Are the resistances greater than 10,000 ohms?</b></li> </ul>	<p><b>Yes</b> GO to H13.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
<p><b>H13</b></p>	<p><b>CHECK FOR CORRECT ABS MODULE OPERATION</b></p> <ul style="list-style-type: none"> <li>Disconnect the ABS module connector.</li> <li>Check for:             <ul style="list-style-type: none"> <li>corrosion</li> <li>pushed-out pins</li> </ul> </li> <li>Correct the ABS module connector and make sure it seats correctly.</li> <li>Operate the system and verify that the concern is still present.</li> <li><b>Is the concern still present?</b></li> </ul>	<p><b>Yes</b> INSTALL a new ABS module. TEST the system for normal operation.</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.</p>

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PINPOINT TEST H: THE BRAKE WARNING INDICATOR IS NEVER/ALWAYS ON (Continued)	
Test Step	Result / Action to Take
<b>H14 CHECK FOR CORRECT INSTRUMENT CLUSTER OPERATION</b> <ul style="list-style-type: none"> <li>• Disconnect the instrument cluster connector.</li> <li>• Check for:                             <ul style="list-style-type: none"> <li>• corrosion</li> <li>• pushed-out pins</li> </ul> </li> <li>• Connect the instrument cluster connector and make sure it seats correctly.</li> <li>• Operate the system and verify that the concern is still present.</li> <li>• <b>Is the concern still present?</b></li> </ul>	<b>Yes</b> INSTALL a new instrument cluster. REFER to Instrument Cluster (IC) in this section. TEST the system for normal operation.  <b>No</b> The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
<b>H15 CHECK FOR CORRECT SJB OPERATION</b> <ul style="list-style-type: none"> <li>• Disconnect all the SJB connectors.</li> <li>• Check for:                             <ul style="list-style-type: none"> <li>• corrosion</li> <li>• pushed-out pins</li> </ul> </li> <li>• Connect all the SJB connectors and make sure they seat correctly.</li> <li>• Operate the system and verify that the concern is still present.</li> <li>• <b>Is the concern still present?</b></li> </ul>	<b>Yes</b> INSTALL a new SJB. TEST the system for normal operation.  <b>No</b> The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

**Normal Operation**

When the parking brake is applied, circuit CCBO9 (GY/BU), to the smart junction box (SJB), is grounded by the parking brake switch through circuit GD143 (BK/VT). The SJB receives the ground signal and sends the instrument cluster a message over the medium speed controller area network (MS-CAN) to illuminate the brake warning indicator. The brake fluid level switch is hardwired to the anti-lock brake system (ABS) module through circuits CMC19 (GY/VT) and RMC19 (YE/GY). The brake fluid level switch is grounded through circuit GD120 (BK/GN). The ABS module monitors the brake fluid level and when the brake fluid level is low or a base brake system concern is detected, the ABS module sends a signal to the instrument cluster over the high speed controller area network (HS-CAN) to illuminate the brake warning indicator.

**Possible Causes**

- circuit CCBO9 (GY/BU) open or short to ground
- circuit CMC19 (GY/VT) open or short to ground
- circuit GD120 (BK/GN) open
- circuit GD143 (BK/VT) open
- circuit RMC19 (YE/GY) open or short to ground
- parking brake switch
- brake fluid level switch
- SJB
- ABS module
- instrument cluster