

**Pinpoint Test L: The Reversing Lamps Are Inoperative**

Refer to Wiring Diagrams Cell [93](#), Reversing Lamps for schematic and connector information.

**Normal Operation — Vehicles Not Equipped With TorqShift**

The digital transmission range (TR) sensor receives voltage from the central junction box (CJB) fuse 12 (15A) through circuit 296 (WH/VT). When the transmission is placed in REVERSE (R), the digital TR sensor routes voltage to the reversing lamps through circuit 140 (BK/PK). The reversing lamps share a common ground through circuit 57 (BK).

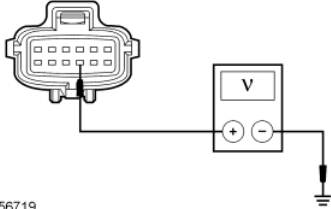
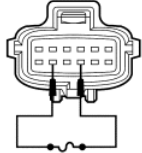
**Normal Operation — Vehicles Equipped With TorqShift**

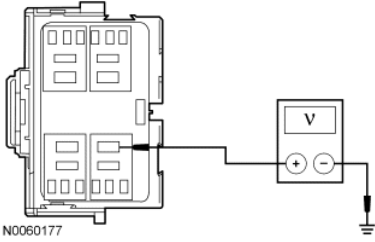
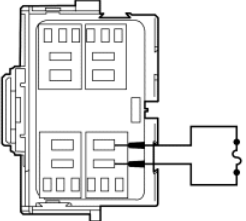
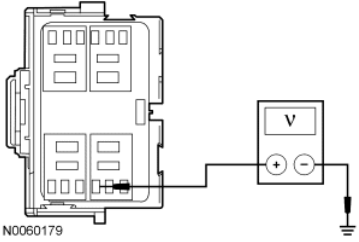
The reversing lamp relay coil receives voltage from the powertrain control module (PCM) power relay through circuit 361 (RD). The reversing lamp relay coil ground is supplied and controlled by the PCM through circuit 1362 (DG/OG). Voltage is supplied to the reversing lamp relay switch side from the CJB fuse 12 (15A) through circuit 296 (WH/VT). When the transmission is placed in REVERSE (R), the PCM provides a ground for the reversing lamp relay coil, energizing the relay. When the reversing lamp relay is energized, the reversing lamp relay routes voltage to the reversing lamps through circuit 140 (BK/PK). The reversing lamps share a common ground through circuit 57 (BK).

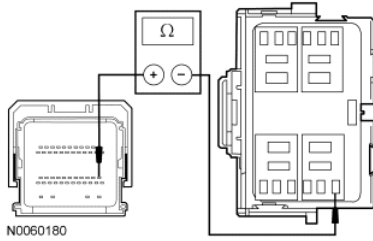
**Possible Causes**

- Fuse
- Circuit 140 (BK/PK) open
- Circuit 296 (WH/VT) open
- Circuit 361 (RD) open
- Circuit 1362 (DG/OG) open
- Digital TR sensor
- Reversing lamp relay
- PCM

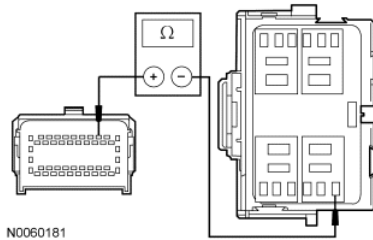
**PINPOINT TEST L: THE REVERSING LAMPS ARE INOPERATIVE**

Test Step	Result / Action to Take															
<p><b>L1 CHECK CIRCUIT 57 (BK) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect: Inoperative Reversing Lamp.</li> <li>• Measure the resistance between an inoperative reversing lamp, harness side and ground as follows:</li> </ul> <table border="1"> <thead> <tr> <th>Inoperative Reversing Lamp</th> <th>Connector-Pin</th> <th>Circuit</th> </tr> </thead> <tbody> <tr> <td>LH reversing lamp (except cutaway chassis)</td> <td>C451-1</td> <td>57 (BK)</td> </tr> <tr> <td>RH reversing lamp (except cutaway chassis)</td> <td>C461-1</td> <td>57 (BK)</td> </tr> <tr> <td>LH reversing lamp (cutaway chassis)</td> <td>C414-2</td> <td>57 (BK)</td> </tr> <tr> <td>RH reversing lamp (cutaway chassis)</td> <td>C417-2</td> <td>57 (BK)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>• Is the resistance less than 5 ohms?</li> </ul>	Inoperative Reversing Lamp	Connector-Pin	Circuit	LH reversing lamp (except cutaway chassis)	C451-1	57 (BK)	RH reversing lamp (except cutaway chassis)	C461-1	57 (BK)	LH reversing lamp (cutaway chassis)	C414-2	57 (BK)	RH reversing lamp (cutaway chassis)	C417-2	57 (BK)	<p><b>Yes</b> GO to <a href="#">L2</a>.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
Inoperative Reversing Lamp	Connector-Pin	Circuit														
LH reversing lamp (except cutaway chassis)	C451-1	57 (BK)														
RH reversing lamp (except cutaway chassis)	C461-1	57 (BK)														
LH reversing lamp (cutaway chassis)	C414-2	57 (BK)														
RH reversing lamp (cutaway chassis)	C417-2	57 (BK)														
<p><b>L2 DETERMINE THE TRANSMISSION TYPE</b></p> <ul style="list-style-type: none"> <li>• Connect: Inoperative Reversing Lamp.</li> <li>• Check the vehicle transmission type.</li> <li>• Is the vehicle equipped with a TorqShift transmission?</li> </ul>	<p><b>Yes</b> GO to <a href="#">L5</a>.</p> <p><b>No</b> GO to <a href="#">L3</a>.</p>															
<p><b>L3 CHECK CIRCUIT 296 (WH/VT) FOR AN OPEN (WITHOUT TORQSHIFT)</b></p> <ul style="list-style-type: none"> <li>• Disconnect: Digital TR Sensor C167.</li> <li>• Ignition ON.</li> <li>• Measure the voltage between the digital TR sensor C167-9, circuit 296 (WH/VT), harness side and ground.</li> </ul>  <p>A0056719</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="#">L4</a>.</p> <p><b>No</b> VERIFY the CJB fuse 12 (15A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.</p>															
<p><b>L4 CHECK THE DIGITAL TR SENSOR</b></p> <ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Connect a fused (15A) jumper wire between the digital TR sensor C167-9, circuit 296 (WH/VT), harness side and the digital TR sensor C167-11, circuit 140 (BK/PK), harness side.</li> </ul>  <p>A0056720</p> <ul style="list-style-type: none"> <li>• Ignition ON.</li> </ul>	<p><b>Yes</b> INSTALL a new digital TR sensor. REFER to <a href="#">Section 307-01A</a>. TEST the system for normal operation.</p> <p><b>No</b> REPAIR circuit 140 (BK/PK) for an open. TEST the system for normal operation.</p>															

<ul style="list-style-type: none"> <li>Do the reversing lamps illuminate?</li> </ul>	
<p><b>L5 CHECK FOR PCM DTCs</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Carry out the PCM self-test.</li> <li>Retrieve and record any PCM DTCs.</li> <li>Are any PCM DTCs retrieved?</li> </ul>	<p><b>Yes</b> REFER to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.</p> <p><b>No</b> GO to <a href="#">L6</a>.</p>
<p><b>L6 CHECK THE REVERSING LAMP RELAY</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: Reversing Lamp Relay .</li> <li>Carry out the reversing lamp relay 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>Is the reversing lamp relay OK?</li> </ul>	<p><b>Yes</b> GO to <a href="#">L7</a>.</p> <p><b>No</b> INSTALL a new reversing lamp relay. TEST the system for normal operation.</p>
<p><b>L7 CHECK CIRCUIT 296 (WH/VT) FOR AN OPEN (WITH TORQSHIFT)</b></p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Measure the voltage between the reversing lamp relay pin 3, circuit 296 (WH/VT), harness side and ground.</li> </ul>  <p>N0060177</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="#">L8</a>.</p> <p><b>No</b> VERIFY the CJB fuse 12 (15A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.</p>
<p><b>L8 CHECK CIRCUIT 140 (BK/PK) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Install a fused (5A) jumper wire between the reversing lamp relay pin 5, circuit 140 (BK/PK), harness side and the reversing lamp relay C121-3 circuit 296 (WH/VT), harness side.</li> </ul>  <p>N0060178</p> <ul style="list-style-type: none"> <li>Ignition ON.</li> <li>Do the reversing lamps illuminate?</li> </ul>	<p><b>Yes</b> REMOVE the jumper wire. GO to <a href="#">L9</a>.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
<p><b>L9 CHECK CIRCUIT 361 (RD) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Measure the voltage between the reversing lamp relay pin 1, circuit 361 (RD), harness side and ground.</li> </ul>  <p>N0060179</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="#">L10</a>.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>
<p><b>L10 CHECK CIRCUIT 1362 (DG/OG) FOR AN OPEN</b></p> <ul style="list-style-type: none"> <li>Ignition OFF.</li> <li>Disconnect: PCM C175b (Gasoline Engine) or C1381t (Diesel Engine).</li> <li>For gasoline engines, measure the resistance between the PCM C175b-24, circuit 1362 (DG/OG), harness side and the reversing lamp relay pin 2, circuit 1362 (DG/OG), harness side.</li> </ul>	<p><b>Yes</b> GO to <a href="#">L11</a>.</p> <p><b>No</b> REPAIR the circuit. TEST the system for normal operation.</p>



- For diesel engines, measure the resistance between the PCM C1381t-3, circuit 1362 (DG/OG), harness side and the reversing lamp relay pin 2, circuit 1362 (DG/OG), harness side.



- Is the resistance less than 5 ohms?

**L11 CHECK FOR CORRECT PCM OPERATION**

- Disconnect all the PCM connectors.
- Check for:
  - corrosion
  - damaged pins
  - pushed-out pins
- Connect all the PCM 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 PCM. REFER to [Section 303-14A](#) or [Section 303-14B](#). 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.