Warranty Information for Warranty Coverage

The following test procedures must be performed BEFORE replacing any WABCO speed sensor. Please be sure to enter the proper problem code — as identified in this bulletin — on the warranty claim form.

Application

Before testing the sensors, refer to the vehicle specification sheet to identify the type of ABS installed on the vehicle: D or E version pneumatic ABS, C version hydraulic ABS or D version hydraulic ABS. The Pro-Link® 9000 or TOOLBOX™ Software may be used to identify D version pneumatic ABS. TOOLBOX™ software may be used to identify D version hydraulic ABS. C version hydraulic ABS is not compatible with either the Pro-Link 9000 or TOOLBOX™ software. For further assistance, contact WABCO North America Customer Care at 855-228-3203.

Instructions

The tables referenced in the following test procedures refer to pinout tables. Refer to Table A and Table B. If sensor replacement is necessary, refer to the appropriate maintenance manual. Use the following chart to determine which table and maintenance manual you should use.

**NOTE:** If you have C version pneumatic ABS on the vehicle, please refer to WABCO Maintenance Manual 28 for sensor tests.

**WARNING**

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury can result.

**CAUTION**

When troubleshooting and testing the ABS system do not damage the connector terminals.

Test 1: Sensor resistance and short to ground test (Normally associated with an existing fault — sensor short or open)

1. Turn ignition OFF. Apply the parking brakes. Put blocks under the front and rear tires to prevent the vehicle from moving.
2. Disconnect the appropriate harness connector from the ABS Electronic Control Unit (ECU).
3. Inspect the connectors and terminals for corrosion, physical damage, or loose connections.
4. Use a Volt-Ohm meter to measure resistance (ohms) in two places:

   Between the terminal pins — **resistance must be between** 900-2000 ohms.

   From each terminal pin to the sensor case or to a good vehicle ground — **resistance must be infinite (open circuit).**

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<table>
<thead>
<tr>
<th>If the Type of ABS Installed on the Vehicle is:</th>
<th>USE</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>D Version Pneumatic ABS (Basic, Cab- or Frame-mounted)</td>
<td>A</td>
<td>30</td>
</tr>
<tr>
<td>E Version Pneumatic ABS (Basic, Universal or Frame-mounted)</td>
<td>A</td>
<td>0112</td>
</tr>
<tr>
<td>C Version Hydraulic ABS (Cab-mounted)</td>
<td>B</td>
<td>38</td>
</tr>
<tr>
<td>D Version Hydraulic ABS (Cab- or Frame-mounted)</td>
<td>B</td>
<td>39</td>
</tr>
</tbody>
</table>
A. If the proper ohm measurements are obtained, the sensor is not the cause of the fault. Reconnect the harness and clear the fault. If fault cannot be cleared, contact WABCO North America Customer Care at 855-228-3203.

B. If the ohm readings are not within the proper specifications, continue testing the harness at each additional connector until you reach the last sensor connector.

C. If the sensor ohm readings are not within the proper specifications as measured at the sensor, record the readings and replace the sensor. Refer to the appropriate maintenance manual for complete instructions.

D. If the sensor ohms readings are within the proper specifications but not within the proper ohm specification at the ECU connector, either the harness or one of the connectors is at fault and must be repaired or replaced. Check sensor extension cable for broken wires or wear due to interference with moving components. Make necessary repairs. Refer to the appropriate maintenance manual for complete instructions.

5. The code for a sensor resistance problem is SENS1. Enter this code in the comments field of the warranty claim form.

Test 2: Sensor voltage output test (Normally associated with a stored fault — excessive air gap or erratic speed signal)

1. Turn ignition OFF. Apply the parking brakes. Raise the vehicle off the ground. Put blocks under the front and rear tires to prevent the vehicle from moving.

2. Disconnect the appropriate harness connector from the ABS ECU.

3. Inspect the connectors and terminals for corrosion, physical damage or loose connections. Make the necessary repairs.

4. Release the parking brakes.

5. Rotate the wheel by hand at 30 rpm (1/2 revolution per second).

6. Use a Volt-Ohm meter to measure the AC voltage across the terminal pins on the connector listed in the table while spinning the appropriate wheel at 30 rpm (1/2 revolution per second). Minimum output voltage required — 0.2 volts AC.

If voltage is below minimum, readjust the sensor by pushing sensor in holder until it contacts the tooth wheel. Repeat AC voltage measurement. If voltage is still low, call WABCO North America Customer Care at 855-228-3203.

If voltage is greater than 0.2 volts AC, but erratic speed signal failures continue to occur when the vehicle is driven, check the wheel bearing end play (refer to axle manufacturer’s recommendations) and tooth wheel condition.

7. The code for a sensor voltage problem is SENS2. Enter this code in the comments field of the warranty claim form.

Table A: Pneumatic ABS — ECU Connector and Terminal Check Pins

<table>
<thead>
<tr>
<th>ABS ECU</th>
<th>Sensor</th>
<th>Connector</th>
<th>Pins</th>
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</thead>
<tbody>
<tr>
<td>D Full Function Cab Mount</td>
<td>LF</td>
<td>6-Pin</td>
<td>4 and 5</td>
</tr>
<tr>
<td></td>
<td>RF</td>
<td>9-Pin</td>
<td>4 and 5</td>
</tr>
<tr>
<td></td>
<td>LR</td>
<td>15-Pin</td>
<td>5 and 6</td>
</tr>
<tr>
<td></td>
<td>RR</td>
<td>15-Pin</td>
<td>8 and 9</td>
</tr>
<tr>
<td></td>
<td>LR (3rd Axle)</td>
<td>12-Pin</td>
<td>5 and 6</td>
</tr>
<tr>
<td></td>
<td>RR (3rd Axle)</td>
<td>12-Pin</td>
<td>8 and 9</td>
</tr>
<tr>
<td>D and E Basic Cab Mount</td>
<td>LF</td>
<td>18-Pin</td>
<td>12 and 15</td>
</tr>
<tr>
<td></td>
<td>RF</td>
<td>18-Pin</td>
<td>10 and 13</td>
</tr>
<tr>
<td></td>
<td>LR</td>
<td>18-Pin</td>
<td>11 and 14</td>
</tr>
<tr>
<td></td>
<td>RR</td>
<td>18-Pin</td>
<td>17 and 18</td>
</tr>
<tr>
<td>D and E Frame Mount</td>
<td>LF</td>
<td>X2-Black</td>
<td>7 and 8</td>
</tr>
<tr>
<td></td>
<td>RF</td>
<td>X2-Black</td>
<td>5 and 6</td>
</tr>
<tr>
<td></td>
<td>LR</td>
<td>X3-Green</td>
<td>1 and 2</td>
</tr>
<tr>
<td></td>
<td>RR</td>
<td>X3-Green</td>
<td>3 and 4</td>
</tr>
<tr>
<td></td>
<td>LR (3rd Axle)</td>
<td>X4-Brown</td>
<td>3 and 4</td>
</tr>
<tr>
<td></td>
<td>RR (3rd Axle)</td>
<td>X4-Brown</td>
<td>5 and 6</td>
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<tr>
<td>E Universal Cab Mount</td>
<td>LF</td>
<td>18-Pin</td>
<td>12 and 15</td>
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<td></td>
<td>RF</td>
<td>18-Pin</td>
<td>10 and 13</td>
</tr>
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<td></td>
<td>LR</td>
<td>18-Pin</td>
<td>11 and 14</td>
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<tr>
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<td>RR</td>
<td>18-Pin</td>
<td>17 and 18</td>
</tr>
<tr>
<td></td>
<td>LR (3rd Axle)</td>
<td>15-Pin</td>
<td>2 and 5</td>
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<tr>
<td></td>
<td>RR (3rd Axle)</td>
<td>15-Pin</td>
<td>11 and 14</td>
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Table B: Hydraulic ABS — ECU Connector and Terminal Check Pins

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<th>ABS ECU</th>
<th>Sensor</th>
<th>Connector</th>
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<tr>
<td>Cab Mount</td>
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<td>LF</td>
<td>35-Pin</td>
<td>15 and 32</td>
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<td>RF</td>
<td>35-Pin</td>
<td>17 and 34</td>
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<td>LR</td>
<td>35-Pin</td>
<td>18 and 35</td>
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<td>RR</td>
<td>35-Pin</td>
<td>16 and 33</td>
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<td><strong>D Version</strong></td>
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<td>Cab Mount</td>
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<tr>
<td>LF</td>
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<td>1 and 2</td>
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