SUBJECT: EB 14-003: Air Disc Brake and Caliper Troubleshooting with e-Stroke

-- Double Check Before You Replace --

1. **Use** an MGM Diagnostic Tool for Inspection and Troubleshooting.

2. **Always** confirm the correct wheel is being inspected by unplugging the e-Stroke sensor at the suspect wheel end and verify a sensor fault (after 60 seconds) with an MGM Diagnostic Tool. This confirms if the harness is installed correctly.

3. **Call** MGM Brakes Technical Support for Troubleshooting Assistance. (877) 437-8765

4. **Actuator Re-Installation** allowed if Actuator Boot and ESP Sensor Seal Height is greater than \( \geq 3 \text{mm} \) (0.118 in). Measure seal height with feeler gage, depth micrometer or caliper before re-installation.

5. Similar faults on **Right and Left Sides of the Same Axle** are typically caused by a **Control System Issue** rather than an issue with the Actuator or Caliper, i.e. Valve, Interlock, Contaminated Airline.

6. Faults reported on a **Single Wheel Only** are likely to be from a **Mechanical or Electrical Issue** with the caliper or actuator assembly.

7. **Non-Function AND Over-Stroke Faults on One Wheel Only**
   - **Note** that a combination of multiple Non-Function, Over-Stroke, and Drag faults from the e-Stroke system accumulating on a single wheel end may be indicating a Low Caliper Lining Running Clearance Condition.
   - **Note** that Caliper Lining Running Clearance may be Over-Adjusted.
   - **Check** that Caliper Lining Running Clearance meets manufacture’s specification.
   - **Inspect** Caliper for signs of High Temperature Operation or Moisture Contamination.

8. **Dragging Brake Fault Only**
   - **Note** that e-Stroke will only display an Active Dragging Brake Fault when the vehicle is moving greater than \( \geq 5 \text{mph} \) for 30 seconds.
   - **Check** for Ice or Moisture in Air Lines, Valve Issues - **Cold Weather Conditions**.
   - **Check** Caliper Function, Presence of Rust or Moisture (Single Wheel Fault).
   - **Check** Sensor Ground – Black Wire to CCM (Single Wheel Fault).

9. **Check Sensor Voltage** at CCM Connector while system is powered and wheels chocked:

<table>
<thead>
<tr>
<th>Test</th>
<th>Wires: Green (Signal +) to Black (Ground -) Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brakes Released</td>
<td>0.10 – 1.99V DC</td>
</tr>
<tr>
<td>Brakes Applied</td>
<td>&gt;2.00V DC</td>
</tr>
<tr>
<td>Sensor Fault</td>
<td>&lt; 0.10V DC after 60 seconds</td>
</tr>
</tbody>
</table>

   **Sensor Power:** Red (Power +) to Black (Ground -) Voltage – More Than \( >4.8 \text{V DC} \)

**Contact MGM Brakes for e-Stroke Technical Support - 1-877-4-e-STROKE**