

## Troubleshooting for D-Version ABS

### Troubleshooting

#### WARNING

**Before testing a vehicle equipped with Automatic Traction Control (ATC) on a dynamometer, the ATC system must be disabled. See [Subject 160](#) for instructions. Activation of the vehicle ATC on a dynamometer will cause unequal drive-wheel torque that can result in loss of vehicle control and personal injury or death.**

This subject includes troubleshooting procedures for diagnosing problems indicated by the ABS warning light(s) or the ATC wheel spin indicator light (if equipped) on the instrument panel. If any of these lights come on after the initial self-test, use one of the following methods to identify the problem:

- Troubleshoot using the Meritor WABCO PC Diagnostics software.
- Troubleshoot using J1587 codes viewed on a computer with Freightliner's ServiceLink installed.
- Troubleshoot using the instrument panel blink codes (with or without Pro-Link 9000®).

The J1587-code method provides more information about the specific problem than can be obtained from the blink codes.

The ABS (and ATC, if equipped) system has built-in diagnostics to ensure that all components are operating correctly. The first step is an automatic self-test. Under normal conditions, the ABS warning light(s) (ABS, TRAILER ABS, or ANTI LOCK) and ATC wheel spin indicator light (TRAC) light up on the instrument cluster when the ignition is turned on. After about 3 seconds, these lights should go out if all of the vehicle's ABS/ATC components are working.

If any of the lights stay on, or come back on later, a problem within the ABS/ATC system has occurred. The driver can continue to drive the vehicle, but the ABS system could be partially or completely inoperative.

**NOTE:** The TRAC indicator stays lit when the ATC is controlling wheel spin and blinks continuously if the ATC switch (TRAC MUD/SNOW) is activated. These are normal conditions and do not indicate a fault.

To check the type of fault code recorded, stop the vehicle and turn off the engine. Then, turn on the ignition switch, but don't start the engine. If the light stays on after the 3-second self-test, there is an active system fault that must be repaired to ensure proper system operation.

If the light does not stay on, a stored or intermittent fault (indicating a loose connector or broken wire) has been recorded in the ABS electronic control unit (ECU) memory.

If either light does not come on during the self-test, check the bulb, all related circuit breakers in the electrical panel, or the batteries (the ABS/ATC system requires at least 9.5 volts to function correctly).

If a fault has been corrected since the ABS warning light originally came on, the system must be calibrated by driving the vehicle a short distance at 4 mph (6 km/h) or more before the light will go out.

### USING MERITOR WABCO PC DIAGNOSTICS

Follow the instructions in the Meritor WABCO PC Diagnostics manual for troubleshooting the ABS/ATC system.

### USING J1587 FAULT CODES

Use Freightliner's ServiceLink to diagnose the ABS/ATC system if detailed fault codes are needed or if the diagnosis must be done remotely. Connect a computer, with ServiceLink installed, to the J1587 datalink connector located under the left-hand dash. Follow the instructions found in the ServiceLink manual.

The J1587 fault codes are eight-digit numbers.

- The first three digits refer to the message identifier (MID) that indicates the ECU reporting the fault. The MID is 136 for the ABS/ATC ECU.
- The next three digits (preceded by a lowercase "s") represents the subsystem identifier (SID), which indicates the component at fault.
- The last two digits, the Failure Mode Identifier (FMI), represent the specific problem with the component.

The tables provided in "Troubleshooting Tables" all have an MID code of 136. Each table lists all the FMI codes for a specific component (SID). See [Table 1](#) for a list of the first six digits of the fault codes with

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their corresponding components and troubleshooting table references.

| J1587 Fault Code Cross-Reference |                              |                          |
|----------------------------------|------------------------------|--------------------------|
| Fault Code, First 6 Digits       | Component or Area            | Troubleshooting Table    |
| 136001                           | Left Front Wheel Sensor      | <a href="#">Table 4</a>  |
| 136002                           | Right Front Wheel Sensor     | <a href="#">Table 5</a>  |
| 136003                           | Left Rear Wheel Sensor       | <a href="#">Table 6</a>  |
| 136004                           | Right Rear Wheel Sensor      | <a href="#">Table 7</a>  |
| 136005                           | Left Third Wheel Sensor *    | <a href="#">Table 8</a>  |
| 136006                           | Right Third Wheel Sensor *   | <a href="#">Table 9</a>  |
| 136007                           | Left Front Modulator Valve   | <a href="#">Table 10</a> |
| 136008                           | Right Front Modulator Valve  | <a href="#">Table 11</a> |
| 136009                           | Left Rear Modulator Valve    | <a href="#">Table 12</a> |
| 136010                           | Right Rear Modulator Valve   | <a href="#">Table 13</a> |
| 136011                           | Left Third Modulator Valve † | <a href="#">Table 14</a> |
| 136012                           | Right Third Modulator Valve  | <a href="#">Table 15</a> |
| 136013                           | Retarder                     | <a href="#">Table 16</a> |
| 136014                           | Ground (diagonal 1)          | <a href="#">Table 17</a> |
| 136015                           | Ground (diagonal 2)          | <a href="#">Table 18</a> |
| 136018                           | ATC Valve                    | <a href="#">Table 19</a> |
| 136023                           | Warning Light                | <a href="#">Table 20</a> |
| 136248                           | SAE-J1939 Datalink           | <a href="#">Table 21</a> |
| 136249                           | SAE-J1922 Datalink           | <a href="#">Table 22</a> |
| 136251                           | Voltage                      | <a href="#">Table 23</a> |
| 136253                           | Configuration                | <a href="#">Table 24</a> |
| 136254                           | Miscellaneous                | <a href="#">Table 25</a> |

\* The left or right third wheel sensor is located at the wheel end of the rearmost axle on a 6S/4M or 6S/6M configuration.

† The left or right third modulator valve is located on the chassis near the rearmost axle on a 6S/6M configuration.

**Table 1, J1587 Fault Code Cross-Reference**

Active faults cannot be cleared until they are repaired. A wheel sensor fault that has been repaired will not be cleared from memory until the vehicle has been driven at least 4 mph (6 km/h) to calibrate the system.

To erase all the stored fault codes from the ECU memory, refer to the ServiceLink manual. Make sure to make a note of all the stored fault codes before

clearing them. Stored faults cannot be cleared if active faults exist.

### USING THE INSTRUMENTATION PANEL BLINK CODES

NOTE: If troubleshooting the system with the Pro-Link 9000, use the instruction booklet that is supplied with the WABCO D-Version ABS cartridge.

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Use the ABS CHECK switch and the ABS warning light to:

- Display any active or stored faults (press the ABS CHECK switch 1 second for the Diagnostic mode).
- Erase stored faults from the ECU memory or display the system identification code (press the ABS CHECK switch 3 seconds for the Clear All mode).

NOTE: For simplicity, the ABS warning light will be referred to as the ABS light in this procedure. The warning light(s) on your vehicle may indicate ABS, TRAILER ABS, or ANTI LOCK.

### Displaying Fault Codes

Fault codes are displayed as follows:

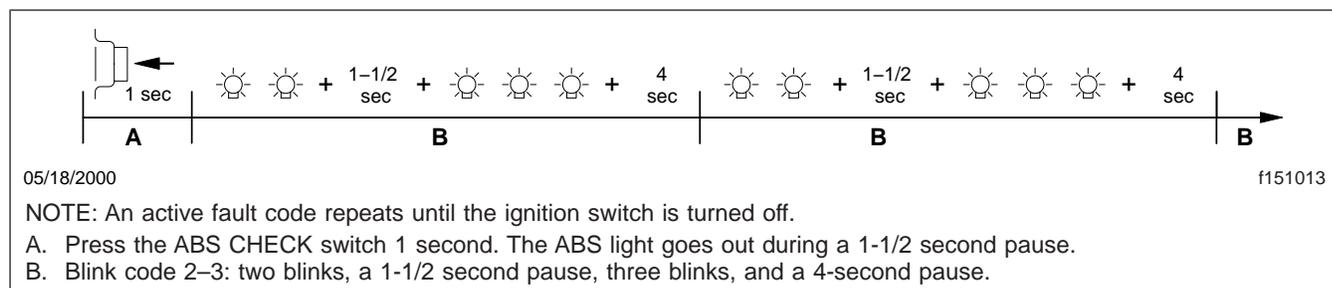
- With the ignition switch on, press the ABS CHECK switch for about 1 second (Diagnostic mode), then release. The ABS light should go out during the 1-1/2 second pause. See [Fig. 1](#).

indicated by two blinks, a pause of 1-1/2 seconds, followed by three blinks and a 4-second pause.

- If it is an active fault, the same fault code will repeat until the ignition switch is turned off. See [Fig. 1](#).
- If it is a stored fault, the next fault in the ECU memory will be displayed after the 4-second pause. See [Fig. 2](#). The last fault stored in memory is displayed first; each stored fault is displayed only once.
- If there are no fault codes in the ECU memory, blink code 1-1 is displayed, meaning the system is clear. See [Fig. 3](#).

### Identifying Blink Codes

The first digit in a blink code identifies the type of fault; the second digit indicates the specific location of the fault. See [Table 2](#) to identify the blink codes.



**Fig. 1, Active Fault Codes Repeat (blink code 2-3 shown)**

- The ABS light will blink (flash) a number equal to the first digit of the two-digit fault code. The first digit is a number from one to eight.
- After a 1-1/2 second pause, the light will blink the second digit. The number of blinks for the second digit is from one to six.
- After a 4-second pause, the cycle repeats an active fault code until it is repaired.
- If there are no active faults but one or more stored faults are in the ECU memory, the system will display all recorded faults in sequence starting with the most recent, with a 4-second pause between codes.

For example, after the ABS CHECK switch is pressed 1 second and released, fault code 2-3 is

**The ignition switch must be off when connecting or disconnecting connectors from the ECU. Power applied to the ECU during connector installation or removal could damage the pins.**

Once a fault code has been identified, use a multimeter to check the electrical harness at the ABS ECU connectors. See [Testing, 200](#) for wire numbers and connector pin locations on the frame-mounted ECU.

Refer to the applicable table in "Troubleshooting Tables" for fault codes, pins to be tested, and the correct multimeter readings. Repair or replace the components and/or wiring if the readings are not correct.

NOTE: Wire repairs may require the use of special tools for certain connectors and terminals.

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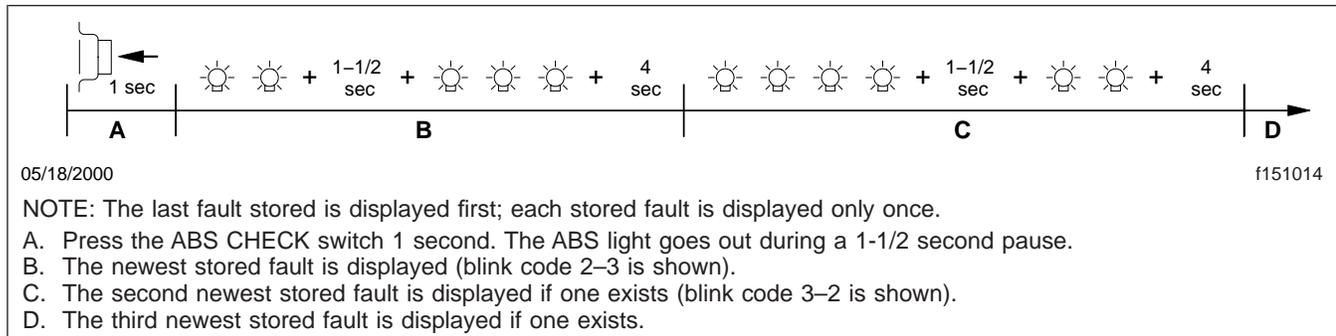


Fig. 2, Stored Fault Codes Display in Sequence

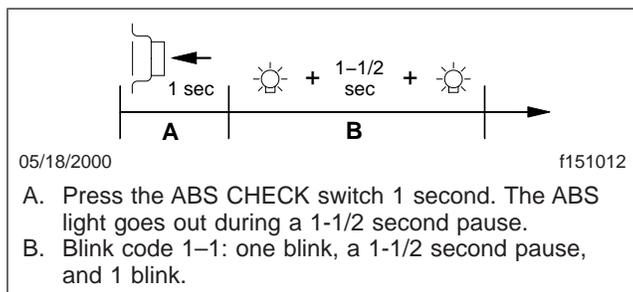


Fig. 3, No Faults, System OK

Refer to [Group 54](#) for information on special terminals and connectors, and ordering tools for them.

Refer to the wiring diagrams in [Specifications, 400](#) when troubleshooting the ABS system.

After the repair is complete, drive the vehicle at least 4 mph (6km/h) to calibrate the ABS/ATC system. Then, shut down the engine and turn the ignition switch on to verify the fault is no longer active. After pressing the ABS CHECK switch 1 second, a 1-1 "no fault" blink code should be displayed if there are no stored faults in the ECU memory.

## Erasing Stored Faults

An active fault code cannot be erased from ECU memory but stored faults can be erased all at once without being repaired. Make sure that all stored fault codes are recorded before they are erased because they should be repaired as soon as possible.

Stored faults can be erased from the ECU memory as follows:

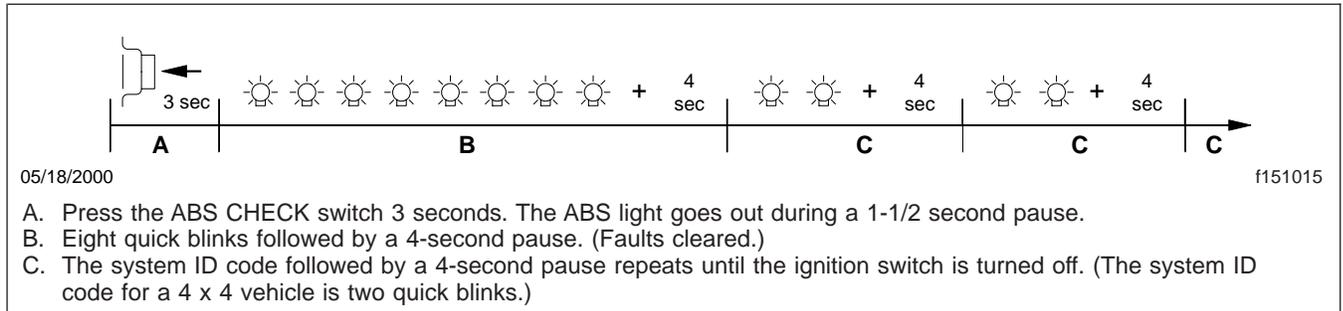
- Press the ABS CHECK switch for 3 to 6 seconds (Clear All mode).

- After releasing the switch, the ABS light will go out during the 1-1/2 second pause.
- If there were stored faults but no active faults, the ABS light will blink eight times meaning all stored faults have been cleared. See [Fig. 4](#). (If there are active faults, only the system identification code will be displayed. See [Fig. 5](#)).
- After a 4-second pause, the ABS light will display the system identification code followed by another 4-second pause repeatedly until the ignition switch is turned off.

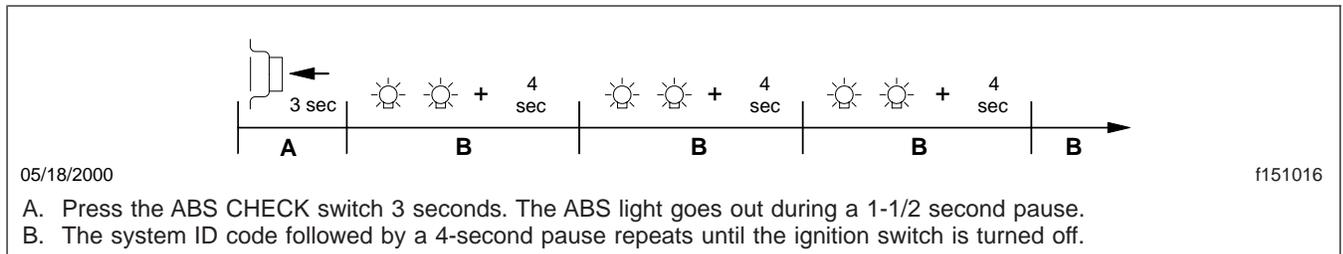
If there are active faults, only the system identification code will be displayed. See [Fig. 5](#).

The system identification code indicates the number of ABS wheel speed sensors (S) and modulator valves (M) installed on the vehicle. See [Table 3](#) for a list of system identification codes.

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**Fig. 4, Stored Faults Cleared**



**Fig. 5, Faults Not Cleared (active faults still exist)**

| ABS Blink Codes    |                              |  |                            |
|--------------------|------------------------------|--|----------------------------|
| 1st Digit (blinks) | Type of Fault                | 2nd Digit (blinks)                           | Specific Location of Fault |
| 1                  | No Faults                    | 1  | —                          |
| 2                  | ABS Modulator Valve          | 1  | Right Front Steer Axle     |
|                    |                              | 2  | Left Front Steer Axle      |
|                    |                              | 3  | Right Rear Drive Axle      |
|                    |                              | 4  | Left Rear Drive Axle       |
|                    |                              | 5  | Right Rear Additional Axle |
|                    |                              | 6  | Left Rear Additional Axle  |
| 3                  | Sensor Gap Too Large         | See 2nd digit and fault-location list above. |                            |
| 4                  | Short or Open Sensor Circuit |  |                            |
| 5                  | Erratic Sensor Signal        |  |                            |
| 6                  | Tone Wheel                   |  |                            |

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| ABS Blink Codes    |                   |                    |                                |
|--------------------|-------------------|--------------------|--------------------------------|
| 1st Digit (blinks) | Type of Fault     | 2nd Digit (blinks) | Specific Location of Fault     |
| 7                  | System Function * | 1                  | J1922 or J1939 Datalink        |
|                    |                   | 2                  | ATC Valve                      |
|                    |                   | 3                  | Retarder Relay † (third brake) |
|                    |                   | 4                  | ABS Warning Light              |
|                    |                   | 5                  | ATC Configuration              |
|                    |                   | 6                  | Reserved for future use        |
| 8                  | ECU               | 1                  | Low Power Supply               |
|                    |                   | 2                  | High Power Supply              |
|                    |                   | 3                  | Internal Fault                 |
|                    |                   | 4                  | System Configuration           |
|                    |                   | 5                  | Ground                         |

\* Reconfigure the ECU if fault messages appear for components not installed on the vehicle.

† The ECU detects only fault code 136 S013 03, indicating the retarder relay is shorted to power. See "Troubleshooting Tables," **Table 16**. If the retarder relay circuit is open or if it is shorted to ground, the system will not indicate a fault.

**Table 2, ABS Blink Codes**

| System Identification Blink Codes |                     |                         |
|-----------------------------------|---------------------|-------------------------|
| Blink Code                        | Sensors/ Modulators | Vehicle Wheel Positions |
| 1 Blink                           | 6S/6M               | 6 x 2                   |
| 2 Blinks                          | 4S/4M               | 4 x 4                   |
| 4 Blinks                          | 6S/4M               | 6 x 4                   |
| 5 Blinks                          | 6S/6M               | 6 x 4                   |

**Table 3, System Identification Blink Codes**

If a fault cannot be repaired or erased from ECU memory, contact your Meritor district service manager or call Meritor WABCO at 1-800-535-5560.

## Troubleshooting Tables

| Left Front Wheel Sensor Troubleshooting (SID = s001) |     |     |                   |  |            |  |
|--|-----|-----|-------------------|--|------------|--|
| J1587 Fault Code                                     |     |     | Problem           | Diagnostic Procedure   | Blink Code |  |
| MID  | SID | FMI |                   |  |            |  |
| 136  | 001 | 01  | Excessive air gap | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 7 and 8 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. Check for loose wheel bearings and/or excessive hub runout. | 3-2        |  |
| 136  | 001 | 02  | Incorrect tire    | Check for correct tire size. Check for correct number of teeth on the tone wheel.  | 5-2        |  |

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| Left Front Wheel Sensor Troubleshooting (SID = s001) |     |     |                          |   |            |
|--|-----|-----|--------------------------|---|------------|
| J1587 Fault Code                                     |     |     | Problem                  | Diagnostic Procedure  | Blink Code |
| MID  | SID | FMI |                          |   |            |
| 136  | 001 | 03  | Shorted to power         | Measure the voltage across pin 7 of the X2 (black) connector and ground, and pin 8 of the X2 connector and ground. If the measurement indicates a voltage, the sensor is shorted to power.  | 4-2        |
| 136  | 001 | 04  | Shorted to ground        | Check the continuity between pin 7 of the X2 (black) connector and ground, and pin 8 of the X2 connector and ground. If continuity exists in either pin, the sensor is shorted to ground.   |            |
| 136  | 001 | 05  | Open circuit             | Check the continuity between pins 7 and 8 of the X2 (black) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136  | 001 | 06  | Short circuit            | Check the continuity between pins 7 and 8 of the X2 (black) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136  | 001 | 07  | Damaged tone wheel       | Check the tone wheel for damage such as missing teeth.  | 6-2        |
| 136  | 001 | 08  | Wheel slip               | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 7 and 8 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. A fault is triggered if the wheel slips longer than 16 seconds.              | 3-2        |
| 136  | 001 | 09  | Wires mismatched         | Check for a mismatch fault of another sensor and correct the problem in the wiring harness.   | 5-2        |
| 136  | 001 | 10  | Intermittent signal loss | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 7 and 8 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. *  | 3-2        |
| 136  | 001 | 11  | Erratic signal           | Check the sensor wiring and connectors for intermittent contact. Check the tone wheel for damage. Verify the signal by measuring the voltage across pins 7 and 8 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. * | 5-2        |
| 136  | 001 | 12  | Frequency incorrect      | Check the sensor wiring and connectors for intermittent contact. The ECU may be at fault if the problem persists.   |            |

\* Use Meritor WABCO PC Diagnostics software to view the wheel speed signals. If there is an intermittent loss of the signal, check the connections.

Table 4, Left Front Wheel Sensor Troubleshooting (SID = s001)

| Right Front Wheel Sensor Troubleshooting (SID = s002) |     |     |                   |  |            |
|---|-----|-----|-------------------|--|------------|
| J1587 Fault Code                                      |     |     | Problem           | Diagnostic Procedure   | Blink Code |
| MID   | SID | FMI |                   |  |            |
| 136   | 002 | 01  | Excessive air gap | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 5 and 6 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. Check for loose wheel bearings and/or excessive hub runout. | 3-1        |

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## Meritor WABCO Pneumatic Antilock Braking System (ABS)

### Troubleshooting for D-Version ABS

| Right Front Wheel Sensor Troubleshooting (SID = s002) |     |     |                          |   |            |
|---|-----|-----|--------------------------|---|------------|
| J1587 Fault Code                                      |     |     | Problem                  | Diagnostic Procedure  | Blink Code |
| MID   | SID | FMI |                          |   |            |
| 136   | 002 | 02  | Incorrect tire           | Check for correct tire size. Check for correct number of teeth on the tone wheel.   | 5-1        |
| 136   | 002 | 03  | Shorted to power         | Measure the voltage across pin 4 of the X2 (black) connector and ground, and pin 6 of the X2 connector and ground. If the measurement indicates a voltage, the sensor is shorted to power.  | 4-1        |
| 136   | 002 | 04  | Shorted to ground        | Check the continuity between pin 4 of the X2 (black) connector and ground, and pin 6 of the X2 connector and ground. If continuity exists in either pin, the sensor is shorted to ground.   |            |
| 136   | 002 | 05  | Open circuit             | Check the continuity between pins 5 and 6 of the X2 (black) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136   | 002 | 06  | Short circuit            | Check the continuity between pins 5 and 6 of the X2 (black) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136   | 002 | 07  | Damaged tone wheel       | Check the tone wheel for damage such as missing teeth.  |            |
| 136   | 002 | 08  | Wheel slip               | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 5 and 6 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. A fault is triggered if the wheel slips longer than 16 seconds.              | 3-1        |
| 136   | 002 | 09  | Wires mismatched         | Check for a mismatch fault of another sensor and correct the problem in the wiring harness.   | 5-1        |
| 136   | 002 | 10  | Intermittent signal loss | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 5 and 6 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. *  | 3-1        |
| 136   | 002 | 11  | Erratic signal           | Check the sensor wiring and connectors for intermittent contact. Check the tone wheel for damage. Verify the signal by measuring the voltage across pins 5 and 6 of the X2 (black) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. * | 5-1        |
| 136   | 002 | 12  | Frequency incorrect      | Check the sensor wiring and connectors for intermittent contact. The ECU may be at fault if the problem persists.   |            |

\* Use Meritor WABCO PC Diagnostics software to view the wheel speed signals. If there is an intermittent loss of the signal, check the connections.

**Table 5, Right Front Wheel Sensor Troubleshooting (SID = s002)**

Troubleshooting for D-Version ABS

| Left Rear Wheel Sensor Troubleshooting (SID = s003) |     |     |                          |   |            |
|---|-----|-----|--------------------------|---|------------|
| J1587 Fault Code                                    |     |     | Problem                  | Diagnostic Procedure  | Blink Code |
| MID   | SID | FMI |                          |   |            |
| 136   | 003 | 01  | Excessive air gap        | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 1 and 2 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. Check for loose wheel bearings and/or excessive hub runout.                  | 3-4        |
| 136   | 003 | 02  | Incorrect tire           | Check for correct tire size. Check for correct number of teeth on the tone wheel.   | 5-4        |
| 136   | 003 | 03  | Shorted to power         | Measure the voltage across pin 1 of the X3 (green) connector and ground, and pin 2 of the X3 connector and ground. If the measurement indicates a voltage, the sensor is shorted to power.  | 4-4        |
| 136   | 003 | 04  | Shorted to ground        | Check the resistance between pin 11 and 14 of the X3 (green) connector and ground, and pin 2 of the X3 connector and ground. If continuity exists in either pin, the sensor is shorted to ground.   |            |
| 136   | 003 | 05  | Open circuit             | Check the continuity between pins 1 and 2 of the X3 (green) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136   | 003 | 06  | Short circuit            | Check the continuity between pins 1 and 2 of the X3 (green) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136   | 003 | 07  | Damaged tone wheel       | Check the tone wheel for damage such as missing teeth.  | 6-4        |
| 136   | 003 | 08  | Wheel slip               | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 1 and 2 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. A fault is triggered if the wheel slips longer than 16 seconds.              | 3-4        |
| 136   | 003 | 09  | Wires mismatched         | Check for a mismatch fault of another sensor and correct the problem in the wiring harness.   | 5-4        |
| 136   | 003 | 10  | Intermittent signal loss | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 1 and 2 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. *  | 3-4        |
| 136   | 003 | 11  | Erratic signal           | Check the sensor wiring and connectors for intermittent contact. Check the tone wheel for damage. Verify the signal by measuring the voltage across pins 1 and 2 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. * | 5-4        |
| 136   | 003 | 12  | Frequency incorrect      | Check the sensor wiring and connectors for intermittent contact. The ECU may be at fault if the problem persists.   |            |

\* Use Meritor WABCO PC Diagnostics software to view the wheel speed signals. If there is an intermittent loss of the signal, check the connections.

**Table 6, Left Rear Wheel Sensor Troubleshooting (SID = s003)**

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## Meritor WABCO Pneumatic Antilock Braking System (ABS)

### Troubleshooting for D-Version ABS

| Right Rear Wheel Sensor Troubleshooting (SID = s004) |     |     |                          |   |            |
|--|-----|-----|--------------------------|---|------------|
| J1587 Fault Code                                     |     |     | Problem                  | Diagnostic Procedure  | Blink Code |
| MID  | SID | FMI |                          |   |            |
| 136  | 004 | 01  | Excessive air gap        | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 3 and 4 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. Check for loose wheel bearings and/or excessive hub runout.                  | 3-3        |
| 136  | 004 | 02  | Incorrect tire           | Check for correct tire size. Check for correct number of teeth on the tone wheel.   | 5-3        |
| 136  | 004 | 03  | Shorted to power         | Measure the voltage across pin 3 of the X3 (green) connector and ground, and pin 4 of the X3 connector and ground. If the measurement indicates a voltage, the sensor is shorted to power.  | 4-3        |
| 136  | 004 | 04  | Shorted to ground        | Check the continuity between pin 3 of the X3 (green) connector and ground, and pin 4 of the X3 connector and ground. If continuity exists in either pin, the sensor is shorted to ground.   |            |
| 136  | 004 | 05  | Open circuit             | Check the continuity between pins 3 and 4 of the X3 (green) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136  | 004 | 06  | Short circuit            | Check the continuity between pins 3 and 4 of the X3 (green) connector. A good resistance measurement will be between 500 and 2000 ohms. If the resistance is not within this range, check the sensor and the chassis wiring.  |            |
| 136  | 004 | 07  | Damaged tone wheel       | Check the tone wheel for damage such as missing teeth.  | 6-3        |
| 136  | 004 | 08  | Wheel slip               | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 3 and 4 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. A fault is triggered if the wheel slips longer than 16 seconds.              | 3-3        |
| 136  | 004 | 09  | Wires mismatched         | Check for a mismatch fault of another sensor and correct the problem in the wiring harness.   | 5-3        |
| 136  | 004 | 10  | Intermittent signal loss | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 3 and 4 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. *  | 3-3        |
| 136  | 004 | 11  | Erratic signal           | Check the sensor wiring and connectors for intermittent contact. Check the tone wheel for damage. Verify the signal by measuring the voltage across pins 3 and 4 of the X3 (green) connector. A good measurement should be above 0.2 volt AC when the tire is rotated 30 rpm. * | 5-3        |
| 136  | 004 | 12  | Frequency incorrect      | Check the sensor wiring and connectors for intermittent contact. The ECU may be at fault if the problem persists.   |            |

\* Use Meritor WABCO PC Diagnostics software to view the wheel speed signals. If there is an intermittent loss of the signal, check the connections.

**Table 7, Right Rear Wheel Sensor Troubleshooting (SID = s004)**

Troubleshooting for D-Version ABS

| Left Third Wheel Sensor Troubleshooting (SID = s005) |     |     |                          |  |            |
|--|-----|-----|--------------------------|--|------------|
| J1587 Fault Code                                     |     |     | Problem                  | Diagnostic Procedure   | Blink Code |
| MID  | SID | FMI |                          |  |            |
| 136  | 005 | 01  | Excessive air gap        | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 3 and 4 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. Check for loose wheel bearings and/or excessive hub runout.                  | 3-6        |
| 136  | 005 | 02  | Incorrect tire           | Check for correct tire size. Check for correct number of teeth on the tone wheel.  | 5-6        |
| 136  | 005 | 03  | Shorted to power         | Measure the voltage across pin 3 of the X4 (brown) connector and ground, and pin 4 of the X4 connector and ground. If the measurement indicates a voltage, the sensor is shorted to power.   | 4-6        |
| 136  | 005 | 04  | Shorted to ground        | Check the continuity between pin 3 of the X4 (brown) connector and ground, and pin 4 of the X4 connector and ground. If continuity exists in either pin, the sensor is shorted to ground.  | 4-6        |
| 136  | 005 | 05  | Open circuit             | Check the continuity between pins 3 and 4 of the X4 (brown) connector. A good resistance measurement will be between 700 and 3000 ohms.  | 4-6        |
| 136  | 005 | 06  | Short circuit            | Check the continuity between pins 3 and 4 of the X4 (brown) connector. A good resistance measurement will be between 700 and 3000 ohms.  | 4-6        |
| 136  | 005 | 07  | Damaged tone wheel       | Check the tone wheel for damage such as missing teeth.   | 6-6        |
| 136  | 005 | 08  | Wheel slip               | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 3 and 4 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. A fault is triggered if the wheel slips longer than 16 seconds.              | 3-6        |
| 136  | 005 | 09  | Wires mismatched         | Check for a mismatch fault of another sensor and correct the problem in the wiring harness.  | 5-6        |
| 136  | 005 | 10  | Intermittent signal loss | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 3 and 4 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. *  | 3-6        |
| 136  | 005 | 11  | Erratic signal           | Check the sensor wiring and connectors for intermittent contact. Check the tone wheel for damage. Verify the signal by measuring the voltage across pins 3 and 4 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. * | 5-6        |
| 136  | 005 | 12  | Frequency incorrect      | Check the sensor wiring and connectors for intermittent contact. The ECU may be at fault if the problem persists.  | 5-6        |

\* Use Meritor WABCO PC Diagnostics software to view the wheel speed signals. If there is an intermittent loss of the signal, check the connections.

**Table 8, Left Third Wheel Sensor Troubleshooting (SID = s005)**

# 42.22

## Meritor WABCO Pneumatic Antilock Braking System (ABS)

### Troubleshooting for D-Version ABS

| Right Third Wheel Sensor Troubleshooting (SID = s006) |     |     |                          |  |            |
|---|-----|-----|--------------------------|--|------------|
| J1587 Fault Code                                      |     |     | Problem                  | Diagnostic Procedure   | Blink Code |
| MID   | SID | FMI |                          |  |            |
| 136   | 006 | 01  | Excessive air gap        | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 5 and 6 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. Check for loose wheel bearings and/or excessive hub runout.                  | 3-5        |
| 136   | 006 | 02  | Incorrect tire           | Check for correct tire size. Check for correct number of teeth on the tone wheel.  | 5-5        |
| 136   | 006 | 03  | Shorted to power         | Measure the voltage across pin 5 of the X4 (brown) connector and ground, and pin 6 of the X4 connector and ground. If the measurement indicates a voltage, the sensor is shorted to power.   | 4-5        |
| 136   | 006 | 04  | Shorted to ground        | Check the continuity between pin 5 of the X4 (brown) connector and ground, and pin 6 of the X4 connector and ground. If continuity exists in either pin, the sensor is shorted to ground.  | 4-5        |
| 136   | 006 | 05  | Open circuit             | Check the continuity between pins 5 and 6 of the X4 (brown) connector. A good resistance measurement will be between 700 and 3000 ohms.  | 4-5        |
| 136   | 006 | 06  | Short circuit            | Check the continuity between pins 5 and 6 of the of the X4 (brown) connector. A good resistance measurement will be between 700 and 3000 ohms.   | 4-5        |
| 136   | 006 | 07  | Damaged tone wheel       | Check the tone wheel for damage such as missing teeth.   | 6-5        |
| 136   | 006 | 08  | Wheel slip               | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 5 and 6 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. A fault is triggered if the wheel slips longer than 16 seconds.              | 3-5        |
| 136   | 006 | 09  | Wires mismatched         | Check for a mismatch fault of another sensor and correct the problem in the wiring harness.  | 5-5        |
| 136   | 006 | 10  | Intermittent signal loss | Adjust the sensor. Verify the adjustment by measuring the voltage across pins 5 and 6 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. *  | 3-5        |
| 136   | 006 | 11  | Erratic signal           | Check the sensor wiring and connectors for intermittent contact. Check the tone wheel for damage. Verify the signal by measuring the voltage across pins 5 and 6 of the X4 (brown) connector. A good measurement should be above 0.2 volt AC when the tire is rotated at 30 rpm. * | 5-5        |
| 136   | 006 | 12  | Frequency incorrect      | Check the sensor wiring and connectors for intermittent contact. The ECU may be at fault if the problem persists.  | 5-5        |

\* Use Meritor WABCO PC Diagnostics software to view the wheel speed signals. If there is an intermittent loss of the signal, check the connections.

**Table 9, Right Third Wheel Sensor Troubleshooting (SID = s006)**

Troubleshooting for D-Version ABS

| Left Front Modulator Valve Troubleshooting (SID = s007) |     |     |   |   |            |
|---|-----|-----|---|---|------------|
| J1587 Fault Code  |     |     | Problem   | Diagnostic Procedure  | Blink Code |
| MID   | SID | FMI |   |   |            |
| 136   | 007 | 01  | Open circuit in the inlet and/or outlet solenoid circuits | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 10 and 11 of the X2 (black) connector, and between pins 2 and 11. A good measurement should be between 4 and 8 ohms.                     | 2-2        |
| 136   | 007 | 03  | Shorted to power  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Measure the voltage across pins 2, 10, and 11 of the X2 (black) connector and ground. If any of the measurements indicate a voltage, the valve is shorted to power.        |            |
| 136   | 007 | 05  | Open circuit  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 10 and 11 of the X2 (black) connector, and between pins 2 and 11 of the X2 connector. A good measurement should be between 4 and 8 ohms. |            |
| 136   | 007 | 06  | Shorted to ground   | Check continuity between pin 2 of the X2 (black) connector and ground, and pin 10 of the X2 connector and ground. If continuity exists in either pin, the valve is shorted to ground.   |            |

Table 10, Left Front Modulator Valve Troubleshooting (SID = s007)

| Right Front Modulator Valve Troubleshooting (SID = s008) |     |     |   |  |            |
|--|-----|-----|---|--|------------|
| J1587 Fault Code   |     |     | Problem   | Diagnostic Procedure   | Blink Code |
| MID  | SID | FMI |   |  |            |
| 136  | 008 | 01  | Open circuit in the inlet and/or outlet solenoid circuits | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 3 and 9 of the X2 (black) connector, and between pins 4 and 9. A good measurement should be between 4 and 8 ohms.                     | 2-1        |
| 136  | 008 | 03  | Shorted to power  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Measure the voltage across pins 3, 4, and 9 of the X2 (black) connector and ground. If any of the measurements indicate a voltage, the valve is shorted to power.       |            |
| 136  | 008 | 05  | Open circuit  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 3 and 9 of the X2 (black) connector, and between pins 4 and 9 of the X2 connector. A good measurement should be between 4 and 8 ohms. |            |
| 136  | 008 | 06  | Shorted to ground   | Check continuity between pin 3 of the X2 (black) connector and ground, and pin 4 of the X2 connector and ground. If continuity exists in either pin, the valve is shorted to ground.   |            |

Table 11, Right Front Modulator Valve Troubleshooting (SID = s008)

# 42.22

## Meritor WABCO Pneumatic Antilock Braking System (ABS)

### Troubleshooting for D-Version ABS

| Left Rear Modulator Valve Troubleshooting (SID = s009) |     |     |   |  |            |  |
|--|-----|-----|---|--|------------|--|
| J1587 Fault Code                                       |     |     | Problem   | Diagnostic Procedure   | Blink Code |  |
| MID  | SID | FMI |   |  |            |  |
| 136  | 009 | 01  | Open circuit in the inlet and/or outlet solenoid circuits | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 10 and 11 of the X3 (green) connector, and between pins 12 and 11. A good measurement should be between 4 and 8 ohms.                     | 2-4        |  |
| 136  | 009 | 03  | Shorted to power  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Measure the voltage across pins 10, 11, and 12 of the X3 (green) connector and ground. If any of the measurements indicate a voltage, the valve is shorted to power.        |            |  |
| 136  | 009 | 05  | Open circuit  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 10 and 11 of the X3 (green) connector, and between pins 12 and 11 of the X3 connector. A good measurement should be between 4 and 8 ohms. |            |  |
| 136  | 009 | 06  | Shorted to ground   | Check continuity between pin 10 of the X3 (green) connector and ground, and pin 12 of the X3 connector and ground. If continuity exists in either pin, the valve is shorted to ground.   |            |  |

Table 12, Left Rear Modulator Valve Troubleshooting (SID = s009)

| Right Rear Modulator Valve Troubleshooting (SID = s010) |     |     |   |  |            |  |
|---|-----|-----|---|--|------------|--|
| J1587 Fault Code  |     |     | Problem   | Diagnostic Procedure   | Blink Code |  |
| MID   | SID | FMI |   |  |            |  |
| 136   | 010 | 01  | Open circuit in the inlet and/or outlet solenoid circuits | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 7 and 8 of the X3 (green) connector, and between pins 9 and 8. A good measurement should be between 4 and 8 ohms.                     | 2-3        |  |
| 136   | 010 | 03  | Shorted to power  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Measure the voltage across pins 7, 8, and 9 of the X3 (green) connector and ground. If any of the measurements indicate a voltage, the valve is shorted to power.       |            |  |
| 136   | 010 | 05  | Open circuit  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 7 and 8 of the X3 (green) connector, and between pins 9 and 8 of the X3 connector. A good measurement should be between 4 and 8 ohms. |            |  |
| 136   | 010 | 06  | Shorted to ground   | Check continuity between pin 7 of the X3 (green) connector and ground, and pin 9 of the X3 connector and ground. If continuity exists in either pin, the valve is shorted to ground.   |            |  |

Table 13, Right Rear Modulator Valve Troubleshooting (SID = s010)

Troubleshooting for D-Version ABS

| Left Third Modulator Valve Troubleshooting (SID = s011) |     |     |   |  |            |
|---|-----|-----|---|--|------------|
| J1587 Fault Code  |     |     | Problem   | Diagnostic Procedure   | Blink Code |
| MID   | SID | FMI |   |  |            |
| 136   | 011 | 01  | Open circuit in the inlet and/or outlet solenoid circuits | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 10 and 11 of the X4 (brown) connector, and between pins 12 and 11. A good measurement should be between 4 and 8 ohms.                     | 2-6        |
| 136   | 011 | 03  | Shorted to power  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Measure the voltage across pins 10, 11, and 12 of the X4 (brown) connector and ground. If any of the measurements indicate a voltage, the valve is shorted to power.        |            |
| 136   | 011 | 05  | Open circuit  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 10 and 11 of the X4 (brown) connector, and between pins 12 and 11 of the X4 connector. A good measurement should be between 4 and 8 ohms. |            |
| 136   | 011 | 06  | Shorted to ground   | Check continuity between pin 10 of the X4 (brown) connector and ground, and pin 12 of the X4 connector and ground. If continuity exists in either pin, the valve is shorted to ground.   |            |

Table 14, Left Third Modulator Valve Troubleshooting (SID = s011)

| Right Third Modulator Valve Troubleshooting (SID = s012) |     |     |   |  |            |
|--|-----|-----|---|--|------------|
| J1587 Fault Code   |     |     | Problem   | Diagnostic Procedure   | Blink Code |
| MID  | SID | FMI |   |  |            |
| 136  | 012 | 01  | Open circuit in the inlet and/or outlet solenoid circuits | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 7 and 8 of the X4 (brown) connector, and between pins 9 and 8. A good measurement should be between 4 and 8 ohms.                     | 2-5        |
| 136  | 012 | 03  | Shorted to power  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Measure the voltage across pins 7, 8, and 9 of the X3 (green) connector and ground. If any of the measurements indicate a voltage, the valve is shorted to power.       |            |
| 136  | 012 | 05  | Open circuit  | Check the modulator valve wiring. Check for damaged wiring in the inlet, outlet and ground circuits. Check the resistance between pins 7 and 8 of the X4 (brown) connector, and between pins 9 and 8 of the X4 connector. A good measurement should be between 4 and 8 ohms. |            |
| 136  | 012 | 06  | Shorted to ground   | Check continuity between pin 7 of the X4 (brown) connector and ground, and pin 9 of the X4 connector and ground. If continuity exists in either pin, the valve is shorted to ground.   |            |

Table 15, Right Third Modulator Valve Troubleshooting (SID = s012)

# 42.22

## Meritor WABCO Pneumatic Antilock Braking System (ABS)

### Troubleshooting for D-Version ABS

| Retarder Troubleshooting (SID = s013) |     |     |                   |  |            |  |
|---------------------------------------|-----|-----|-------------------|--|------------|--|
| J1587 Fault Code                      |     |     | Problem           | Diagnostic Procedure   | Blink Code |  |
| MID                                   | SID | FMI |                   |  |            |  |
| 136                                   | 013 | 03  | Shorted to power  | Measure the voltage between pin 5 of the X1 (gray) connector and ground. If the measurement indicates a voltage, the relay circuit is shorted to power.                            | 7-3        |  |
| 136                                   | 013 | 05  | Open circuit      | Check continuity of the retarder relay circuit 376R. Replace the wire if continuity does not exist. Reconfigure the ECU if the fault message appears but no retarder is installed. |            |  |
| 136                                   | 013 | 06  | Shorted to ground | Check continuity between pin 5 of the X1 (gray) connector and ground. If continuity exists, the retarder relay circuit is shorted to ground.                                       |            |  |

Table 16, Retarder Troubleshooting (SID = s013)

| Ground (diagonal 1-right front, left rear) Troubleshooting (SID = s014) |     |     |   |   |            |  |
|---|-----|-----|---|---|------------|--|
| J1587 Fault Code  |     |     | Problem                                       | Diagnostic Procedure  | Blink Code |  |
| MID   | SID | FMI |   |   |            |  |
| 136   | 014 | 04  | Voltage, diagonal 1, low voltage/open circuit | Check the 10A circuit breaker F43. Check pin 1 in the X1 (gray) connector for proper contact. Check circuit 16, 16E. Check the vehicle batteries and charging system. | 8-1        |  |
| 136   | 014 | 07  | ABS ECU                                       | Replace ECU if the fault repeats.   | 8-3        |  |

Table 17, Ground (diagonal 1; right front, left rear) Troubleshooting (SID = s014)

| Ground (diagonal 2-left front, right rear) Troubleshooting (SID = s015) |     |     |   |   |            |  |
|---|-----|-----|---|---|------------|--|
| J1587 Fault Code  |     |     | Problem                                       | Diagnostic Procedure  | Blink Code |  |
| MID   | SID | FMI |   |   |            |  |
| 136   | 015 | 04  | Voltage, diagonal 2, low voltage/open circuit | Check the 10A circuit breaker. Check pin 1 in the X1 (gray) connector for proper contact. Check circuit 16A, 16F. | 8-1        |  |
| 136   | 015 | 07  | ABS ECU                                       | Replace ECU if the fault repeats.   | 8-3        |  |

Table 18, Ground (diagonal 2; left front, right rear) Troubleshooting (SID = s015)

Troubleshooting for D-Version ABS

| ATC Valve Troubleshooting (SID = s018) |     |     |                              |  |            |
|--|-----|-----|------------------------------|--|------------|
| J1587 Fault Code *                     |     |     | Problem                      | Diagnostic Procedure   | Blink Code |
| MID                                    | SID | FMI |                              |  |            |
| 136                                    | 018 | 03  | ATC valve, shorted to power  | Measure the voltage between pin 5 of the X3 (green) connector and ground, and pin 6 of the X3 connector and ground. If measurements indicate a voltage, the ATC valve is shorted to power. | 7-2        |
| 136                                    | 018 | 05  | ATC valve, open circuit      | Check the resistance between pins 5 and 6 of the X3 (green) connector. A good measurement will read between 8 and 14 ohms. Check the wiring and the valve.                                 |            |
| 136                                    | 018 | 06  | ATC valve, shorted to ground | Check the continuity between pin 6 of the X3 (green) connector and ground. If continuity exists, there is a short to ground.   |            |

\* Reconfigure the ECU if the fault message appears but ATC is not installed.

Table 19, ATC Valve Troubleshooting (SID = s018)

| Warning Light Troubleshooting (SID = s023) |     |     |               |   |            |
|--|-----|-----|---------------|---|------------|
| J1587 Fault Code                           |     |     | Problem       | Diagnostic Procedure  | Blink Code |
| MID  | SID | FMI |               |   |            |
| 136  | 023 | 05  | Warning Light | Check the bulb and continuity of the warning light circuit. Was the blink code switch activated longer than 16 seconds? If so, cycle the ignition off and on to verify the fault. | 7-4        |

Table 20, Warning Light Troubleshooting (SID = s023)

| J1939 Datalink Troubleshooting (SID = s231) |     |     |   |   |            |
|---|-----|-----|---|---|------------|
| J1587 Fault Code                            |     |     | Problem                                 | Diagnostic Procedure  | Blink Code |
| MID   | SID | FMI |   |   |            |
| 136   | 231 | 02  | J1939 plausibility error                | Check the speedometer calibration. Check for tire size mismatch.  | 7-1        |
| 136   | 231 | 05  | The J1939 datalink has an open circuit. | Check J1939 datalink connections. Check for continuity of datalink wires. Reconfigure the ECU if the fault message appears but no J1939 datalink is installed.                            |            |
| 136   | 231 | 06  | J1939 shorted to ground                 | Check the continuity between pin 6 of the X1 (gray) connector and ground, and pin 7 of the X1 (gray) connector and ground. If continuity exists, the J1939 datalink is shorted to ground. |            |
| 136   | 231 | 09  | J1939 time-out                          | Check other J1939 ECUs for incorrect communication.   |            |
| 136   | 231 | 12  | J1939, internal error                   | Cycle the ignition off and on. If the fault detection repeats, replace the ABS ECU.   | 8-3        |

Table 21, J1939 Datalink Troubleshooting (SID = s231)

### Troubleshooting for D-Version ABS

| J1922 Datalink Troubleshooting (SID = s249) |     |     |  |   |            |  |
|---|-----|-----|--|---|------------|--|
| J1587 Fault Code                            |     |     | Problem                                  | Diagnostic Procedure  | Blink Code |  |
| MID   | SID | FMI |  |   |            |  |
| 136   | 249 | 05  | The J1922 datalink has an open circuit.  | Check the J1922 datalink connections. Check continuity of the datalink wires. Reconfigure the ECU if the fault message appears but no J1922 datalink is installed.                    | 7-1        |  |
| 136   | 249 | 06  | The J1922 datalink is shorted to ground. | Check continuity between pin 6 of the X1 (gray) connector and ground, and pin 7 of the X1 (gray) connector and ground. If continuity exists, the J1922 datalink is shorted to ground. |            |  |
| 136   | 249 | 10  | The J1922 bus is not free.               | Check other J1922 ECUs for incorrect communication.   |            |  |

Table 22, J1922 Datalink Troubleshooting (SID = s249)

| Overvoltage Troubleshooting (SID = s251) |     |     |                              |   |            |  |
|--|-----|-----|------------------------------|---|------------|--|
| J1587 Fault Code                         |     |     | Problem                      | Diagnostic Procedure  | Blink Code |  |
| MID                                      | SID | FMI |                              |   |            |  |
| 136                                      | 251 | 03  | Overvoltage, diagonal 1 or 2 | Check the alternator output and the battery voltage. Supply voltage is greater than 14 volts for more than 5 seconds. | 8-2        |  |

Table 23, Overvoltage Troubleshooting (SID = s251)

| Configuration Troubleshooting (SID = s253) |     |     |  |  |            |  |
|--|-----|-----|--|--|------------|--|
| J1587 Fault Code                           |     |     | Problem  | Diagnostic Procedure   | Blink Code |  |
| MID  | SID | FMI |  |  |            |  |
| 136  | 253 | 01  | ATC configuration                                      | Check the wires responsible for parameter setting.   | 7-5        |  |
| 136  | 253 | 02  | EEPROM or ABS configuration, wheel parameter incorrect | Cycle the ignition off and on. If the fault detection repeats, replace the ABS ECU.  | 8-4        |  |
| 136  | 253 | 12  | EEPROM, checksum                                       | Check the parameter setting. Diagnostic device disconnected during active diagnosis. Cycle the ignition off and on. If the fault detection repeats, replace the ABS ECU. |            |  |

Table 24, Configuration Troubleshooting (SID = s253)

| Miscellaneous ABS/ATC Troubleshooting (SID = s254) |     |     |                            |   |            |  |
|--|-----|-----|----------------------------|---|------------|--|
| J1587 Fault Code                                   |     |     | Problem                    | Diagnostic Procedure  | Blink Code |  |
| MID  | SID | FMI |                            |   |            |  |
| 136  | 254 | 02  | Internal error             | Cycle the ignition off and on. If the fault detection repeats, replace the ABS ECU. | 8-3        |  |
| 136  | 254 | 05  | ABS/ATC ECU, no loads      | No modulators connected. Fault not memorized.                                       | 8-4        |  |
| 136  | 254 | 08  | Excessive slip/dynamometer | Check the wheel sensor air gaps, one axle is much faster than the other.            | 7-1        |  |

Troubleshooting for D-Version ABS

| Miscellaneous ABS/ATC Troubleshooting (SID = s254) |     |     |                                  |   |            |
|--|-----|-----|----------------------------------|---|------------|
| J1587 Fault Code                                   |     |     | Problem                          | Diagnostic Procedure  | Blink Code |
| MID  | SID | FMI |                                  |   |            |
| 136  | 254 | 09  | Modulator Valve, activation time | Modulator valve was activated for too long.   | 2-1        |
| 136  | 254 | 12  | Internal error                   | Cycle the ignition off and on. If the fault detection repeats, replace the ABS ECU. | 8-3        |

Table 25, Miscellaneous ABS/ATC Troubleshooting (SID = s254)