Diagnostic Instructions — Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)

Printable View (43 KB)

Special Tool(s)	
 ST2332-A	Worldwide Diagnostic System (WDS) Vehicle Communication Module (VCM) with appropriate adapters, or equivalent diagnostic tool

The symptom chart can be used to help locate the air bag supplemental restraint system (SRS) concerns if no diagnostic trouble codes (DTCs) are retrieved and the listed symptoms are observed. Whether or not the listed symptoms are observed, always carry out the following:

1. Retrieve all DTCs stored in the restraints control module (RCM) memory. For additional information, refer to Retrieve Continuous DTCs in this section.
2. Run the On-Demand Self Test to determine what DTCs are currently being sensed by the RCM. Refer to On-Demand Self Test in this section.
3. If the stored DTCs are different than the current DTCs, always repair the current DTCs first.
4. If memory displays different continuous DTCs than the On-Demand Self Test, carry out in the following order:

- On-Demand Self Test
- Memory (Retrieve Continuous DTCs)

A DTC can indicate several concerns. The DTCs are to assist in system diagnosis and are not to be considered definitive. Always refer to the pinpoint test corresponding to the DTC to determine where the concern lies and to repair the concern correctly.

The SRS diagnostics can be divided into 3 sections:

- Diagnostic test modes
- PID/data monitor and record
- Active command modes

Diagnostic Test Modes

Two menu options are available under the diagnostic test modes:

- Retrieve Continuous DTCs
- On-Demand Self Test

Retrieve Continuous DTCs

During vehicle operation the restraints control module (RCM) will detect and store both intermittent and hard failure DTCs in nonvolatile memory. The DTC strategy employed by the RCM incorporates a time-out scheme for determining when a concern exists in the system. This requires a concern to exist for up to one minute in the system before the RCM will detect it. For the RCM to determine that a concern no longer exists, the concern must be absent for up to one minute. The actual detection time-outs vary with each DTC. The DTCs can be retrieved with a diagnostic tool using the retrieve continuous DTCs option. Any DTCs stored in the RCM will be displayed on the diagnostic tool along with a brief description of the DTC. If no DTCs are present, the diagnostic tool will display a SYSTEM PASSED message. This option can also be used to clear DTCs from the RCM memory, as long as the concern no longer exists. Once 128 key cycles have been recorded since the concern was last detected, the DTC will automatically be removed from memory.

To retrieve or clear DTCs, follow these steps:

5. Connect the diagnostic tool to the data link connector (DLC).
6. Turn the ignition switch to the ON position.
7. Follow the manufacturer's instructions for the diagnostic tool being used.
8. **NOTE:** Before proceeding with the clearing operation, make note of the DTCs displayed. Once cleared, continus DTCs cannot be retrieved if a fault is not currently present.

   All continuous DTCs will be displayed on the screen.
9. Clear the DTCs.

On-Demand Self Test

The On-Demand Self Test option is used to verify that no electrical concerns exist with the air bag supplemental restraint system (SRS). Upon entering the self test, the restraints control module (RCM) will make an electrical check of each electrical component in the system. If a concern is detected, a DTC is displayed on the diagnostic tool with a brief description of the DTC. Concerns detected during the self test are not stored in memory, unless the same concern was also detected during normal vehicle operation. The self test should always be run after any repair to verify that the repair was successful.

To run the On-Demand Self Test, follow these steps:

1. Connect the diagnostic tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the diagnostic tool being used.
4. The RCM will run the On-Demand Self Test and display on-demand DTCs (reflecting hard system concerns) on the screen.

Bit-Mapped Diagnostic Trouble Codes (DTCs)

Many of the continuous and on-demand DTCs that can be present in the RCM are bit-mapped DTCs that utilize PIDs (flagged faults). Bit-mapped DTCs are conceptually different from the previous style of DTCs. Previously, DTCs identified a specific concern for a given component and pointed to a particular diagnostic path. In the diagnostic path, PIDs are sometimes used to determine the root cause. Bit-mapped DTCs do not identify the specific concern. A bit-mapped DTC identifies the component(s) in which the concern exists. The next level (PIDs or flagged faults) identifies the specific concern.

A diagnostic tool must be used to view the PIDs (flagged faults) of a bit-mapped DTC. Once a diagnostic tool has retrieved a bit-mapped DTC, the diagnostic tool will provide the option to "FLAG" that DTC. When the option to "FLAG" the DTC is available, it must be carried out to identify the specific concern that is present. When the option to "FLAG" the DTC has been carried out, the diagnostic tool will then display the PIDs (flagged faults) for the DTC, including the status or state that exists (on-demand DTC) or existed (continuous DTC).

To view and flag bit-mapped DTCs, follow these steps:

1. Connect the diagnostic tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the diagnostic tool being used.
4. Carry out an On-Demand Self Test or retrieve continuous DTCs.
5. Select the DTC and the "FLAG" option on the diagnostic tool.
6. The diagnostic tool will display PIDs for the DTC. Record all flagged faults.

PID/Data Monitor and Record

The PID/Data Monitor and Record option allows the diagnostic tool operator to read the state of several parameter IDs (PIDs) to aid in diagnosing the system. PIDs are measurements of parameters such as voltages, resistances, etc., calculated by the restraints control module (RCM) and sent to the diagnostic tool for display. Many of the PIDs supported by the RCM are calculated periodically and are, therefore, not true real time readings.

To retrieve PIDs, follow these steps:

1. Connect the diagnostic tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the diagnostic tool being used.
4. Record all PIDs that are to be retrieved and initiate PID retrieval. PIDs are updated continuously on the display.

Active Commands

This command allows the technician to verify operation of the air bag indicator, the passenger air bag (PAD) indicator and chime. When the air bag output command is executed, the indicator(s) and the chime are activated simultaneously for approximately 4 seconds. All 3 of the devices are deactivated automatically.

Lamp Fault Codes

When the restraints control module (RCM) detects a system fault, it will cause the air bag indicator to flash a coded sequence; a lamp fault code (LFC). The code is 2 digits. The first digit is flashed with a 0.5-second interval between pulses. There is a 2-second pause before the second digit is flashed which also has a 0.5-second interval between pulses. There is a 5-second pause between each display of an LFC.

Each LFC is flashed 5 times after which the air bag indictor will remain lit for the remainder of the key-on cycle. If there are multiple LFCs, each LFC will flash in order of priority.

Each LFC has one or more associated diagnostic test codes (DTCs).

Diagnostic Trouble Codes (DTCs)

While the lamp fault codes (LFCs) are an indication of a general concern in the passive restraints system, the diagnostic trouble codes (DTCs) are more specific. The DTCs can be retrieved from the restraints control module (RCM) with a diagnostic tool via the data link connector (DLC).

The following table lists the DTCs in numerical order.

Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Priority Table

DTC [a]	LFC [b]	Description	Action To Take
—	Steady	RCM Disconnected or Inoperative	Go To Pinpoint Test A .
B1231	13	Longitudinal Acceleration Threshold Exceeded (Crash Data Memory Full)	INSTALL a new RCM and impact sensors
B1317	Continuous	Battery Voltage High	CHECK battery voltage; to be below 16 volts. REFER to Section 414-00 .
B1318	Continuous	Battery Voltage Low	CHECK battery voltage; to be above 9 volts. REFER to Section 414-00 .
B1342	12	RCM is Faulted	INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section.
B1869	NONE Continuous lamp	Air Bag Warning Indicator Circuit Open or Short to Ground	Go To Pinpoint Test B .

	Secondary air bag warning sounds if another fault is present		
B1870	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Air Bag Warning Indicator Circuit Short to Battery	Go To Pinpoint Test C .
B1884	18	PAD Warning Lamp Circuit Failure	Go To Pinpoint Test D .
B1890	18	PAD Warning Lamp Circuit Short To Battery	Go To Pinpoint Test E .
B1891	53	Air Bag Tone Warning Indicator Short to Battery	Go To Pinpoint Test F .
B1892	53	Air Bag Tone Warning Indicator Circuit Failure	Go To Pinpoint Test G .
B1921	14	Air Bag Diagnostic Monitor Ground Circuit Open	Go To Pinpoint Test H .
B2290	16	Occupant Classification System Fault	Go To Pinpoint Test I .
B2292	33	Restraint System — Safety Belt Pretensioner Status (Driver Pretensioner Circuit Failure)	Go To Pinpoint Test J .
B2292	34	Restraint System — Safety Belt Pretensioner Status (Passenger Pretensioner Circuit Failure)	Go To Pinpoint Test J .
B2293	19	Restraint System — Air Bag Status (Driver Front Air Bag Circuit Failure)	Go To Pinpoint Test K .
B2293	21	Restraint System — Air Bag Status (Passenger Front Air Bag Circuit Failure)	Go To Pinpoint Test K .
B2295	22	Restraint System — Side Air Bag Status (Driver Seat Side Air Bag Circuit Failure)	Go To Pinpoint Test L .
B2295	23	Restraint System — Side Air Bag Status (Passenger Seat Side Air Bag Circuit Failure)	Go To Pinpoint Test L .
B2296	42	Restraint System — Impact Sensor Status (Front Impact Severity Sensor Circuit Failure)	Go To Pinpoint Test M .
B2296	43	Restraint System — Impact Sensor Status (Driver Side Impact Sensor Circuit Failure)	Go To Pinpoint Test M .
B2296	44	Restraint System — Impact Sensor Status (Passenger Side Impact Sensor Circuit Failure)	Go To Pinpoint Test M .
B2434	51	Driver Safety Belt Buckle Switch Circuit Short to Ground	Go To Pinpoint Test N .

B2435	51	Driver Safety Belt Buckle Switch Resistance Out of Range	Go To Pinpoint Test O .
B2438	52	Passenger Safety Belt Buckle Switch Circuit Short to Ground	Go To Pinpoint Test P .
B2439	52	Passenger Safety Belt Buckle Switch Resistance Out of Range	Go To Pinpoint Test Q .
B2477	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Module Configuration Failure	INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section.
B2691	51	Driver Safety Belt Buckle Switch Circuit Fault	Go To Pinpoint Test R .
B2692	52	Passenger Safety Belt Buckle Switch Circuit Fault	Go To Pinpoint Test S .
B2909	16	Belt Tension Sensor Fault	Go To Pinpoint Test T .
C1414	15	Incorrect Vehicle Identification Code	Go To Pinpoint Test U .
C1947	49	Seat Track Position Switch Circuit Short to Ground	Go To Pinpoint Test V .
C1948	49	Seat Track Position Switch Circuit Resistance Out of Range	Go To Pinpoint Test W .
C1981	49	Seat Track Position Switch Circuit Fault	Go To Pinpoint Test X .
—	—	No Communication With The Restraints Control Module (RCM)	Go To Pinpoint Test Y .

[a] DTC: Diagnostic trouble code, retrieved using diagnostic tool.
[b] LFC: Lamp fault code, flashed on air bag indicator.

Inspection and Verification

1. Verify the customer concern by checking the air bag indicator in the instrument cluster. For additional information, refer to Prove Out the System in this section.

2. Visually inspect for obvious signs of mechanical and electrical damage using the following chart.

Visual Inspection Chart	
Mechanical	**Electrical**
• Damaged restraints control module (RCM) bracket • Damaged front crash sensor or bracket	• Blown fuse(s) • Damaged wiring harness • Loose or corroded connectors • Circuitry open/shorted

	• Damaged shorting bars

3. If the concern is not visually evident, use the diagnostic tool to retrieve diagnostic trouble codes (DTCs) and carry out the on-demand self test.
4. If the on-demand self test is passed and no DTCs are retrieved, GO to Symptom Chart .
5. If DTCs are retrieved, refer to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Priority Table.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• The air bag warning indicator is illuminated continuously	• Ignition circuits. • Ground circuits. • RCM internal concern. • Connector shorting bar. • RCM camming beam. • RCM disconnected. • Other circuitry. • Instrument cluster.	• Go To Pinpoint Test A .
• Air bag indicator flashing	• Air bag/pretensioner supplemental restraint system (SRS) fault. • RCM connector not fully seated.	• REFER to DTC Priority Table. • ENGAGE the RCM connector.
• Audible tone — DTCs retrieved	• Air bag SRS system fault.	• Go To Pinpoint Test B .
• No communication with the restraints control module (RCM)	• Diagnostic tool. • Data link connector (DLC). • RCM internal concern. • Circuitry.	• Go To Pinpoint Test Y .

GENERAL PROCEDURES

Supplemental Restraint System (SRS) Depowering and Repowering

Depowering Procedure

⚠ WARNING: Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. This will reduce the risk of injury in the event of an accidental deployment.

⚠ WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.

⚠ WARNING: To reduce the risk of personal injury, do not use any memory saver devices.

NOTE: If a seat equipped with a supplemental restraint system (SRS) component is being serviced, **the SRS must be depowered.**

NOTE: The air bag warning lamp illuminates when the RCM fuse is removed and the ignition switch is ON. This is normal operation and does not indicate a supplemental restraint system (SRS) fault.

NOTE: The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

1. Turn all vehicle accessories OFF.
2. Turn the ignition switch to OFF.
3. At the smart junction box (SJB), located in the RH lower kick panel, remove the cover and the restraints control module (RCM) fuse 17 (10A) from the SJB. For additional information, refer to the Wiring Diagram Manual.
4. Turn the ignition ON and visually monitor the air bag indicator for at least 30 seconds. The air bag indicator will remain lit continuously (no flashing) if the correct RCM fuse has been removed. If the air bag indicator does not remain lit continuously, remove the correct RCM fuse before proceeding.
5. Turn the ignition switch to OFF.
6. **⚠ WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any front or side air bag supplemental restraint system (SRS) components and before servicing, replacing, adjusting or striking components near the front or side air bag sensors, such as doors, instrument panel, console, door latches, strikers, seats and hood latches.**

   The front impact severity sensor is located on the radiator support bracket.

   The first row side impact sensors (if equipped) are located at or near the base of the B-pillars.

   To deplete the backup power supply energy, disconnect the battery ground cable and wait at least one minute. Be sure to disconnect auxiliary batteries and power supplies (if equipped).

   Disconnect the battery ground cable and wait at least 1 minute. For additional information, refer to Section 414-01.

Repowering Procedure

1. **⚠ WARNING: The restraint system diagnostic tool is for restraint system service only. Remove from vehicle prior to road use. Failure to remove could result in injury and possible violation of vehicle safety standards.**

   Make sure all restraint system diagnostic tool(s) that may have been installed during the repair have been removed from the vehicle and all SRS components are connected.
2. Turn the ignition switch from OFF to ON.
3. Install RCM fuse 17 (10A) to the SJB and close the cover.
4. **⚠ WARNING: Be sure that nobody is in the vehicle and that there is nothing blocking or set in front of any air bag module when the battery ground cable is connected.**

   Connect the battery ground cable.

GENERAL PROCEDURES (Continued)

5. Prove out the SRS as follows:

   Turn the ignition key from ON to OFF. Wait 10 seconds, then turn the key back to ON and visually monitor the air bag indicator with the air bag modules installed. The air bag indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is present, the air bag indicator will:

   - fail to light.
   - remain lit continuously.
   - flash.

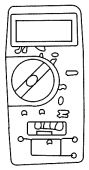
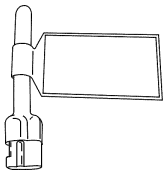
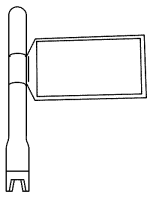
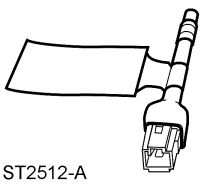
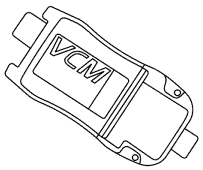
   The flashing might not occur until approximately 30 seconds after the ignition switch has been turned from the OFF to the ON position. This is the time required for the RCM to complete the testing of the SRS. If the air bag indicator is inoperative and a SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag indicator and any SRS fault discovered must be diagnosed and repaired.

   Clear all continuous DTCs from the restraints control module using a diagnostic tool.

DIAGNOSIS AND TESTING

Pinpoint Tests — Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)

Special Tool(s)

 ST1137-A	Fluke 88 Automotive Meter 105-R0053 or equivalent
 ST2507-A	Diagnostic Tool, Restraint System (2 Required) 418-133
 ST2502-A	Diagnostic Tool, Restraint System (4 Required) 418-F395
 ST2512-A	Diagnostic Tool, Restraint System (1 Required) 418-F403
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS) software with appropriate hardware, or equivalent scan tool

Pinpoint Tests

Pinpoint Test A: The Air Bag Warning Indicator Is Illuminated Continuously — RCM Disconnected or Inoperative, Loss of Ignition Feed or Loss of Signal Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: Be sure to cycle the ignition switch and look for a 6-second indicator prove-out without lamp fault codes (LFCs).

Normal Operation

During normal operation, the air bag indicator will illuminate continuously for approximately 6 seconds and then go out after the ignition switch is placed in the ON or START position and no air bag fault exists. The air bag indicator will remain illuminated continuously after 5 cycles of a LFC, if a fault exists. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section. Be sure to cycle the ignition switch and look for an approximate 6 second indicator prove-out without LFCs.

The restraints control module (RCM) will communicate diagnostic trouble codes (DTCs) to the scan tool through the data link connector (DLC). If the scan tool displays NO COMMUNICATION when retrieving continuous DTCs, refer to Section 418-00 to diagnose the no communication concern.

Possible Causes

An air bag indicator that is illuminated continuously can be caused by:

- fuse.
- damaged ignition circuit.
- RCM disconnected from the vehicle harness.
- loss of RCM signal ground.
- faulted RCM.
- damaged wiring, terminals or connectors.
- loss of RCM ignition feed.
- faulted instrument cluster module.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY — RCM DISCONNECTED OR INOPERATIVE, LOSS OF IGNITION FEED OR LOSS OF SIGNAL GROUND

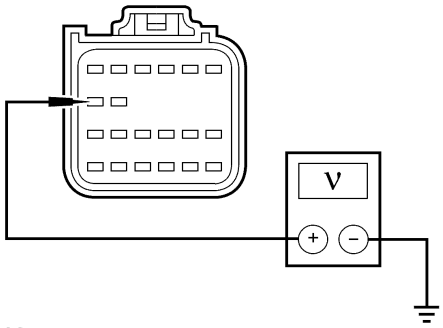
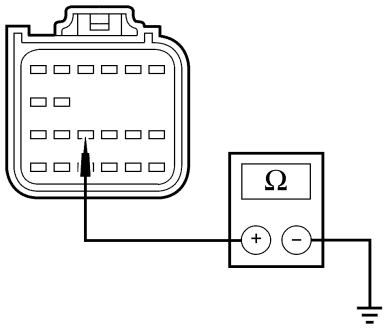
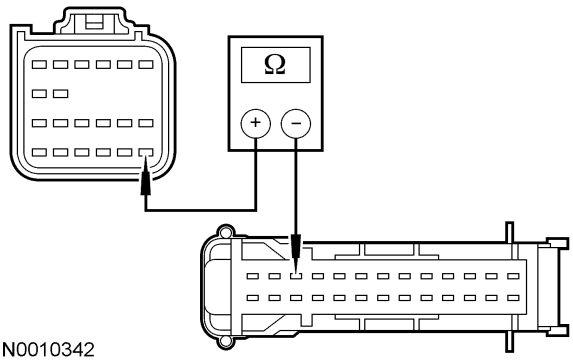
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
A1	**CHECK FOR CONTINUOUS OR ON-DEMAND SELF TEST DTCs**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC Fault PIDs. • **Were any continuous memory or on-demand self test DTCs retrieved?**	**Yes** If continuous memory DTCs were retrieved, GO to **A2**. If on-demand DTCs were retrieved, GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** GO to **A2**.
A2	**CHECK THE RCM CONNECTION**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: RCM C2041a. • Make sure RCM C2041a is connected and fully seated. • **Is RCM C2041a fully connected and the connector locking tab engaged?**	**Yes** GO to **A3**. **No** CONNECT C2041a and ENGAGE the locking tab. GO to **A7**.
A3	**CHECK CIRCUIT 937 (RD/WH) FOR AN OPEN**	
	• Deactivate the system. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Disconnect: RCM C2041a. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

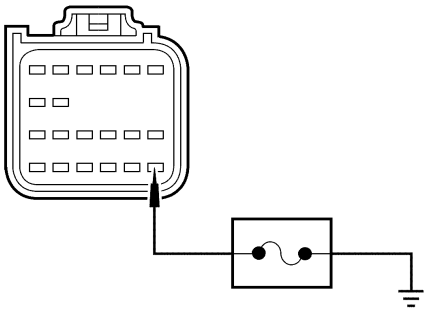
PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY — RCM DISCONNECTED OR INOPERATIVE, LOSS OF IGNITION FEED OR LOSS OF SIGNAL GROUND (Continued)

Test Step		Result / Action to Take
A3	**CHECK CIRCUIT 937 (RD/WH) FOR AN OPEN (Continued)**	
	• Measure the voltage between RCM C2041a-12, circuit 937 (RD/WH), harness side and ground.  A0039638 • **Is the voltage between 9 and 16 volts?**	**Yes** GO to **A4**. **No** VERIFY smart junction box (SJB) fuse 17 (10A) is OK. If OK, REPAIR circuit 937 (RD/WH). GO to **A7**.
A4	**CHECK CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Key in OFF position. • Measure the resistance between RCM C2041a-16, circuit 1203 (BK/LB), harness side and ground.  A0039639 • **Is the resistance less than 5 ohms?**	**Yes** GO to **A5**. **No** REPAIR circuit 1203 (BK/LB). GO to **A7**.
A5	**CHECK CIRCUIT 608 (BK/LG) FOR AN OPEN**	
	• Disconnect: Instrument Cluster Module C220. • Measure the resistance between instrument cluster module C220-24, circuit 608 (BK/LG), harness side and RCM C2041a-19, circuit 608 (BK/LG), harness side.  N0010342 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **A6**. **No** REPAIR circuit 608 (BK/LG). GO to **A7**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY — RCM DISCONNECTED OR INOPERATIVE, LOSS OF IGNITION FEED OR LOSS OF SIGNAL GROUND (Continued)

Test Step		Result / Action to Take
A6	**CHECK THE INDICATOR LAMP OPERATION (DRIVE LAMP OFF)**	
	• Connect: Instrument Cluster Module C220. • Key in ON position. • Connect a fused jumper between the RCM C2041a-19, circuit 608 (BK/LG), harness side and ground.  A0049155 • **Is the indicator lamp off ?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **A7**. **No** REPAIR or INSTALL a new instrument cluster module. REFER to Section 413-01. GO to **A7**.
A7	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step A1. • **Were any continuous memory DTCs retrieved during Step A1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test B: DTC B1869 — Lamp Air Bag Warning Indicator Circuit Open or Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

During normal operation, the air bag indicator will illuminate continuously for approximately 6 seconds and then go out after the ignition switch is placed to the ON or START and no air bag fault exists. The air bag indicator will remain illuminated continuously after 5 cycles of a lamp fault code (LFC), if a fault exists.

If the restraints control module (RCM) detects an open or short to ground on the air bag warning indicator circuit, it will store diagnostic trouble code (DTC) B1869 in memory.

Possible Causes

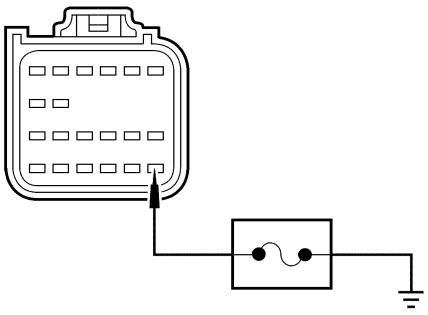
An open air bag indicator circuit can be caused by:

- damaged wiring, terminals or connectors.
- a faulted RCM.
- a faulted instrument cluster module.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: DTC B1869 — LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN OR SHORT TO GROUND

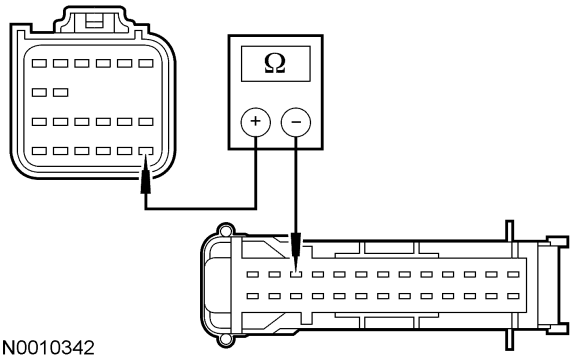
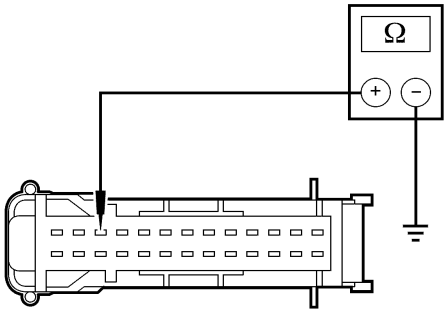
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
B1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1869 retrieved ?**	**Yes** If the air bag indicator lamp **does** illuminate, GO to **B2**. If the air bag indicator lamp **does not** illuminate, GO to **B4**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **B6**.
B2	**CHECK THE INDICATOR LAMP OPERATION (DRIVE LAMP OFF)**	
	• Key in OFF position. • Deactivate the system. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Disconnect: RCM C2041a and C2041b. • Key in ON position. • Connect a fused jumper lead between RCM C2041a-19, circuit 608 (BK/LG), harness side and ground.  A0049155 • **Is the indicator lamp OFF?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **B7**. **No** GO to **B3**.
B3	**CHECK CIRCUIT 608 (BK/LG) FOR AN OPEN**	
	• Key in OFF position. • Disconnect: Instrument Cluster Module C220. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: DTC B1869 — LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN OR SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
B3	**CHECK CIRCUIT 608 (BK/LG) FOR AN OPEN (Continued)**	
	• Measure the resistance between instrument cluster module C220-24, circuit 608 (BK/LG), harness side and RCM C2041a-19, circuit 608 (BK/LG), harness side.  N0010342 • **Is the resistance less than 0.5 ohm?**	**Yes** REPAIR or INSTALL a new instrument cluster module. REFER to Section 413-01. GO to **B7**. **No** REPAIR circuit 608 (BK/LG). GO to **B7**.
B4	**CHECK THE INDICATOR LAMP OPERATION (DRIVE LAMP ON)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • **Is the indicator lamp ON?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **B7**. **No** GO to **B5**.
B5	**CHECK CIRCUIT 608 (BK/LG) FOR A SHORT TO GROUND**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Instrument Cluster Module C220. • Measure the resistance between instrument cluster module C220-24, 608 (BK/LG), harness side and ground.  N0010341 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR or INSTALL a new instrument cluster module. REFER to Section 413-00. GO to **B7**. **No** REPAIR circuit 608 (BK/LG). GO to **B7**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: DTC B1869 — LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN OR SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
B6	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1869 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **B7**. **No** CHECK for causes of intermittent open or short to ground on circuit 608 (BK/LG). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. REPAIR any intermittent concerns found. GO to **B7**.
B7	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step B1. • **Were any continuous memory DTCs retrieved during Step B1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test C: DTC B1870 — Air Bag Warning Indicator Circuit Short to Battery

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

During normal operation, the air bag indicator will illuminate continuously for approximately 6 seconds and then go out after the ignition switch is placed to the ON or START and no air bag fault exists. The air bag indicator will remain illuminated continuously after 5 cycles of a lamp fault code (LFC), if a fault exists.

If the restraints control module (RCM) detects a short to battery on the air bag warning indicator circuit, it will store diagnostic trouble code (DTC) B1870 in memory. If any other DTCs are detected with this DTC active, the secondary air bag warning will be activated.

Possible Causes

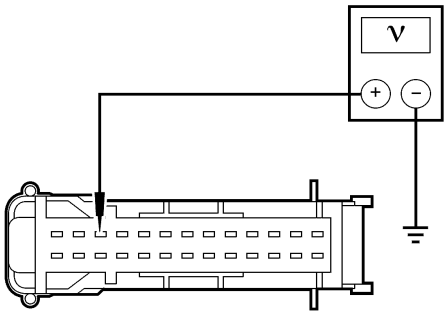
An air bag indicator circuit short to battery can be caused by:

- damaged wiring, terminals or connectors.
- a faulted RCM.
- a faulted instrument cluster module.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: DTC B1870 — AIR BAG WARNING INDICATOR CIRCUIT SHORT TO BATTERY

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
C1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1870 retrieved?**	**Yes** GO to C2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to C4.
C2	**CHECK CIRCUIT 608 (BK/LG) FOR A SHORT TO BATTERY**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Instrument Cluster Module C220. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between instrument cluster module C220-24, circuit 608 (BK/LG), harness side and ground.  N0010340 • **Is the voltage less than 0.2 volt?**	**Yes** GO to C3. **No** REPAIR circuit 608 (BK/LG). GO to C5.
C3	**CHECK THE RCM**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST C: DTC B1870 — AIR BAG WARNING INDICATOR CIRCUIT SHORT TO BATTERY (Continued)

Test Step		Result / Action to Take
C3	**CHECK THE RCM (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. **NOTE:** DTC B1869 should be retrieved when carrying out the on-demand self test due to an open on circuit 608 (BK/LG), DTC B1870 should not be retrieved at this time. • **Was on-demand DTC B1870 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to C5. **No** REPAIR or INSTALL a new instrument cluster module. REFER to Section 413-01. GO to C5.
C4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1870 retrieved?**	**Yes** GO to C2. **No** CHECK for causes of intermittent short to battery on circuit 608 (BK/LG). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire bundle. REPAIR any intermittent concerns found. GO to C5.
C5	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step C1. • **Were any continuous memory DTCs retrieved during Step C1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test D: LFC 18/DTC B1884 — PAD Warning Lamp Circuit Failure

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

⚠ CAUTION: The passenger air bag deactivation (PAD) indicator is part of the hazard switch assembly and cannot be separately serviced.

Normal Operation

When the ignition is in the ON position, the PAD indicator prove-out period is initiated by the restraints control module (RCM). The RCM briefly activates the PAD indicator to verify to the occupants correct functional operation of the PAD indicator. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

DIAGNOSIS AND TESTING (Continued)

If the RCM detects an open or short to ground on the PAD indicator circuit, it will store diagnostic trouble code (DTC) B1884 in memory and flash lamp fault code (LFC) 18 (or higher priority code if one exists) on the air bag indicator.

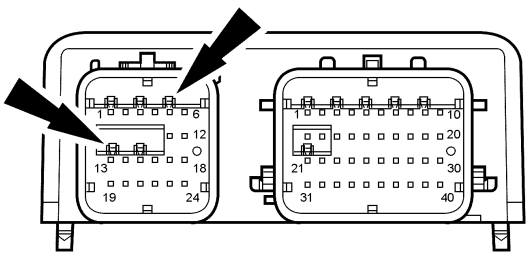
Possible Causes

A PAD indicator circuit open can be caused by:

- wiring, terminals or connectors.
- a faulted PAD indicator.
- a faulted RCM.

PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE

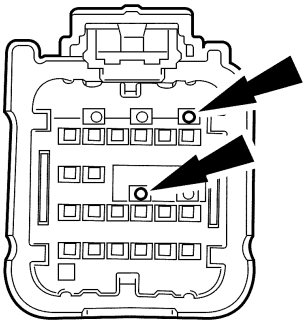
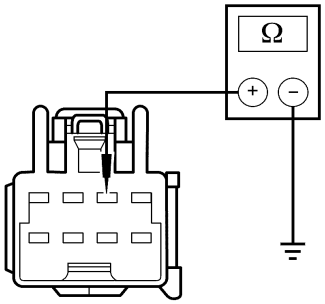
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
D1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1884 retrieved?**	**Yes** If the PAD indicator **does not** illuminate, GO to D2. If the PAD indicator **does** illuminate, GO to D5. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to D9.
D2	**CHECK THE RCM CONNECTOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Inspect the RCM C2041a component side for damaged camming beams.  A0039637	

(Continued)

DIAGNOSIS AND TESTING (Continued)

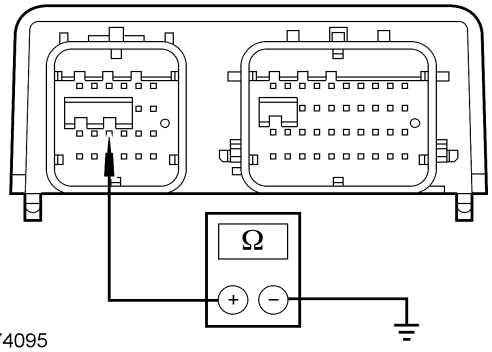
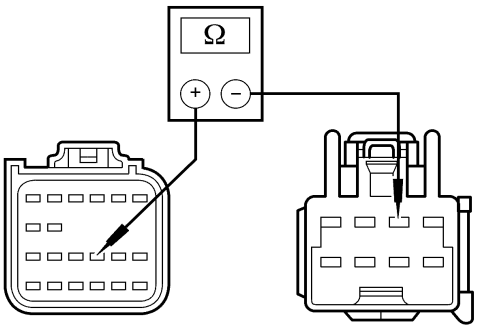
PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D2	**CHECK THE RCM CONNECTOR (Continued)**	
	• **NOTE:** The shorting bars can be accessed by prying out the cover from the harness side of the connector. Do not remove or defeat the shorting bars. Inspect RCM C2041a harness side for worn, damaged or dislodged shorting bars. Inspect for foreign material. Inspect for pushed out connector terminals.  A0040761 • **Were any RCM connector concerns found?**	**Yes** CORRECT the connector concerns. GO to D10. **No** GO to D3.
D3	**CHECK CIRCUIT 1632 (TN/LB) FOR SHORT TO GROUND**	
	• Connect: RCM C2041a and C2041b. • Disconnect: Passenger Air Bag Deactivation (PAD) Indicator C2039. • Measure the resistance between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and ground.  N0010339 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to D8. **No** GO to D4.
D4	**CHECK THE RCM**	
	• Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

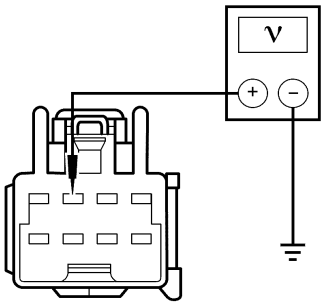
PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D4	**CHECK THE RCM (Continued)**	
	• Measure the resistance between RCM C2041a-15, circuit 1632 (TN/LB), component side and ground.  A0074095 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR circuit 1632 (TN/LB). GO to **D10**. **No** GO to **D8**.
D5	**CHECK PAD THE INDICATOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • **Is the PAD indicator ON?**	**Yes** GO to **D8**. **No** GO to **D6**.
D6	**CHECK CIRCUIT 1632 (TN/LB) FOR AN OPEN**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Deactivation (PAD) Indicator C2039. • Measure the resistance between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and RCM C2041a-15, circuit 1632 (TN/LB), harness side.  N0010338 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **D7**. **No** REPAIR circuit 1632 (TN/LB). GO to **D10**.
D7	**CHECK CIRCUIT 1850 (YE) FOR AN OPEN**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D7	**CHECK CIRCUIT 1850 (YE) FOR AN OPEN (Continued)**	
	• Measure the voltage between PAD indicator C2039-3, circuit 1850 (YE), harness side and ground.  N0010337 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new PAD Indicator. REFER to Passenger Air Bag Deactivation (PAD) Indicator in this section. GO to D10. **No** REPAIR circuit 1850 (YE). GO to D10.
D8	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: Passenger Air Bag Deactivation (PAD) Indicator C2039 (If previously disconnected). • Connect: RCM C2041a and C2041b (If previously disconnected). • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1884 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to D10. **No** CHECK for causes of intermittent open or short to ground on circuit 1632 (TN/LB). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to D10.
D9	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1884 retrieved?**	**Yes** GO to D2. **No** CHECK for causes of intermittent open or short to ground on circuit 1632 (TN/LB). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to D10.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: LFC18/DTC B1884 — PAD WARNING LAMP CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
D10	CHECK FOR ADDITIONAL DTCs	
• Refer to the continuous memory DTCs recorded during Step D1. • **Were any continuous memory DTCs retrieved during Step D1?**		**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test E: LFC18/DTC B1890 — PAD Warning Lamp Circuit Short to Battery

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

When the ignition is in the ON position, the PAD indicator prove-out period is initiated by the restraints control module (RCM). The RCM briefly activates the PAD indicator to verify to the occupants correct functional operation of the PAD indicator. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

If the RCM detects a short to battery on the passenger air bag deactivation (PAD) warning lamp circuit, it will store diagnostic trouble code (DTC) B1890 in memory and flash lamp fault code (LFC) 18 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

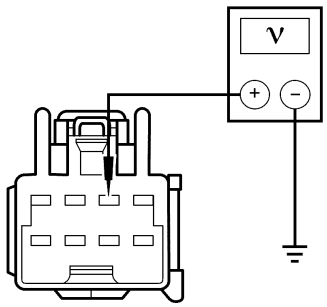
A PAD indicator circuit short to battery can be caused by:

- damaged wiring, terminals or connectors.
- a faulted PAD indicator.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: LFC 18/DTC B1890 — PAD WARNING LAMP CIRCUIT SHORT TO BATTERY

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
E1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1890 retrieved?**	**Yes** GO to **E2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **E4**.
E2	**CHECK CIRCUIT 1632 (TN/LB) FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Deactivation (PAD) Indicator C2039. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and ground.  N0010336 • **Is the voltage less than 0.2 volt?**	**Yes** GO to **E3**. **No** REPAIR circuit 1632 (TN/LB). GO to **E5**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: LFC 18/DTC B1890 — PAD WARNING LAMP CIRCUIT SHORT TO BATTERY (Continued)

Test Step		Result / Action to Take
E3	**CHECK THE RCM**	
	• Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. **NOTE:** DTC B1884 should be retrieved when carrying out the on-demand self test due to an open on circuit 1632 (TN/LB), DTC B1890 should not be retrieved at this time. • **Was on-demand DTC B1890 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **E5**. **No** INSTALL a new PAD Indicator. REFER to Passenger Air Bag Deactivation (PAD) Indicator in this section. GO to **E5**.
E4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1890 retrieved?**	**Yes** GO to **E2**. **No** CHECK for causes of intermittent short to battery on circuit 1632 (TN/LB). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **E5**.
E5	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step E1. • **Were any continuous memory DTCs retrieved during Step E1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test F: LFC 53/DTC B1891 — Air Bag Tone Warning Indicator Circuit Shorted to Voltage

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The connection between the instrument cluster module and restraint control module (RCM) is used to signal a chime if the primary air bag indicator is inoperative and another SRS fault exists. The RCM monitors this connection to the instrument cluster module at C220 pin 23.

If the RCM detects a circuit failure on the connection to the cluster, it will store diagnostic trouble code (DTC) B1891 in memory and flash lamp fault code (LFC) 53 (or a higher priority code if one exists) on the air bag indicator.

Possible Causes

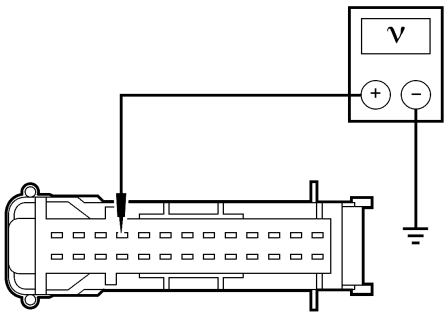
An air bag tone warning indicator circuit short to voltage can be caused by:

- wiring, terminals or connectors.
- a short to voltage on circuit 1083 (LB/BK).
- a faulted instrument cluster module.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: LFC 53/DTC B1891 — AIR BAG TONE WARNING INDICATOR CIRCUIT SHORTED TO VOLTAGE

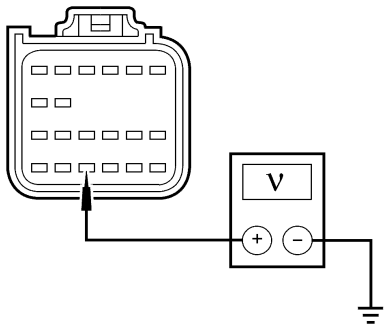
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
F1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1891 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to F2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to F4.
F2	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: Instrument Cluster Module C220. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between instrument cluster module C220-23, circuit 1083 (LB/BK), harness side and ground.  N0010335 • **Is the voltage less than 0.2 volt?**	**Yes** GO to F3. **No** REPAIR circuit 1083 (LB/BK). GO to F5.
F3	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT**	
	• Key in OFF position. • Deactivate the system. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: LFC 53/DTC B1891 — AIR BAG TONE WARNING INDICATOR CIRCUIT SHORTED TO VOLTAGE (Continued)

Test Step		Result / Action to Take
F3	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT (Continued)**	
	• Connect: Instrument Cluster Module C220. • Key in ON position. • Measure the voltage between RCM C2041a-22, circuit 1083 (LB/BK), harness side and ground.  A0039642 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **F5**. **No** INSTALL a new instrument cluster module. REFER to Section 413-01. GO to **F5**.
F4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1891 retrieved?**	**Yes** GO to **F2**. **No** CHECK for causes of intermittent short to voltage on circuit 1083 (LB/BK). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. REPAIR any intermittent concerns found. GO to **F5**.
F5	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step F1. • **Were any continuous memory DTCs retrieved during Step F1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test G: LFC 53/DTC B1892 — Air Bag Tone Warning Indicator Circuit Failure

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The connection between the instrument cluster module and restraints control module (RCM) is used to signal a chime if the primary air bag indicator is inoperative and another SRS fault exists. The RCM monitors this connection to the instrument cluster module at C220 pin 23.

DIAGNOSIS AND TESTING (Continued)

If the RCM detects a circuit failure on the connection to the cluster, it will store diagnostic trouble code (DTC) B1891 in memory and flash lamp fault code (LFC) 53 (or a higher priority code if one exists) on the air bag indicator.

Possible Causes

An air bag tone warning indicator circuit short to ground or open can be caused by:

- a short to ground or open on circuit 1083 (LB/BK).
- a faulted instrument cluster module.
- a faulted RCM.

PINPOINT TEST G: LFC 53/DTC B1892 — AIR BAG TONE WARNING INDICATOR CIRCUIT FAILURE

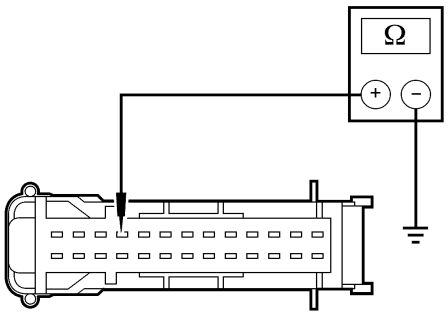
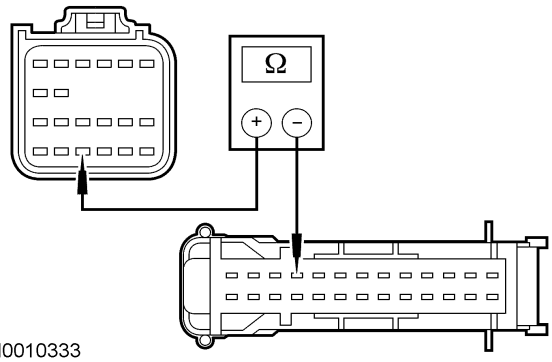
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
G1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1892 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to G2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to G5.
G2	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT FOR A SHORT TO GROUND**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: Instrument Cluster Module C220.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

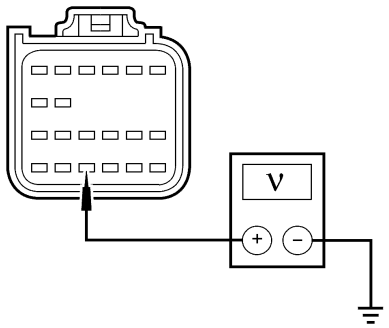
PINPOINT TEST G: LFC 53/DTC B1892 — AIR BAG TONE WARNING INDICATOR CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
G2	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between instrument cluster module C220-23, circuit 1083 (LB/BK), harness side and ground.  N0010334 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to **G3**. **No** REPAIR circuit 1083 (LB/BK). GO to **G6**.
G3	**CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT FOR AN OPEN**	
	• Measure the resistance between RCM C2041a-22, circuit 1083 (LB/BK), harness side, and instrument cluster module C220-23, circuit 1083 (LB/BK), harness side.  N0010333 • **Is the resistance less than 5 ohms?**	**Yes** GO to **G4**. **No** REPAIR circuit 1083 (LB/BK). GO to **G6**.
G4	**CHECK THE AIR BAG TONE WARNING INDICATOR**	
	• Deactivate the system. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Connect: Instrument Cluster Module C220. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: LFC 53/DTC B1892 — AIR BAG TONE WARNING INDICATOR CIRCUIT FAILURE (Continued)

Test Step		Result / Action to Take
G4	**CHECK THE AIR BAG TONE WARNING INDICATOR (Continued)**	
	• Measure the voltage between RCM C2041a-22, circuit 1083 (LB/BK), harness side and ground.  A0039642 • **Is the voltage greater than 10 volts?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **G6**. **No** INSTALL a new instrument cluster module. REFER to Section 413-00. GO to **G6**.
G5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1892 retrieved?**	**Yes** GO to **G2**. **No** CHECK for causes of intermittent open or short to ground on circuit 1083 (LB/BK). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. REPAIR any intermittent concerns found. GO to **G6**.
G6	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step G1. • **Were any continuous memory DTCs retrieved during Step G1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test H: LFC 14/DTC B1921 — Air Bag Diagnostic Monitor Ground Circuit Open

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

⚠ WARNING: The tightening torque of the restraints control module (RCM) retaining bolts is critical for correct air bag supplemental restraint system (SRS) operation. Refer to Restraints Control Module (RCM) in this section for correct torque values.

NOTE: A resistance difference as low as 10 ohms may set the LFC.

Normal Operation

The restraints control module (RCM) monitors the resistance between the ground connections at the mounting bolts and the reference ground at C2041a pin 16, circuit 1203 (BK/LB). If the RCM detects a difference in resistance, it will store diagnostic trouble code (DTC) B1921 in memory and flash lamp fault code (LFC) 14 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A resistance difference between the RCM mounting bolts ground and harness ground can be caused by:

- wiring, terminals or connectors.
- RCM not securely mounted.
- RCM is faulted.

PINPOINT TEST H: LFC 14/DTC B1921 — AIR BAG DIAGNOSTIC MONITOR GROUND CIRCUIT OPEN

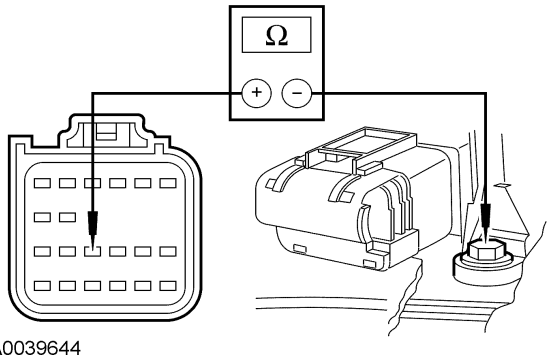
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
H1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	⚠ WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **⚠ WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **⚠ WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1921 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to H2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to H5.
H2	**INSPECT THE RCM MOUNTING AND MOUNTING SURFACE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: LFC 14/DTC B1921 — AIR BAG DIAGNOSTIC MONITOR GROUND CIRCUIT OPEN (Continued)

Test Step		Result / Action to Take
H2	**INSPECT THE RCM MOUNTING AND MOUNTING SURFACE (Continued)**	
	• Inspect the RCM mounting and make sure that the retaining bolts are fully seated and tightened correctly. • Remove the RCM. Refer to Restraints Control Module (RCM) in this section. • Visually inspect the RCM and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the RCM attached to the mounting surface incorrectly or were the RCM bolts not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN bolts or REPAIR the mounting surface as necessary. REINSTALL the RCM to the mounting surface. GO to H6. **No** GO to H3.
H3	**INSTALL THE RCM AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Clean the RCM mounting surfaces and bolts. • Install the RCM. Refer to Restraints Control Module (RCM) in this section. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1921 retrieved?**	**Yes** GO to H4. **No** Fault corrected. GO to H6.
H4	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR HIGH RESISTANCE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-16, circuit 1203 (BK/LB), harness side and the RCM case ground.  A0039644 • **Is the resistance less than 5 ohms?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to H6. **No** REPAIR circuit 1203 (BK/LB). GO to H6.
H5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B1921 retrieved?**	**Yes** GO to H2. **No** CHECK for causes of intermittent high resistance on circuit 1203 (BK/LB) or the chassis ground. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. REPAIR any intermittent concerns found. GO to H6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST H: LFC 14/DTC B1921 — AIR BAG DIAGNOSTIC MONITOR GROUND CIRCUIT OPEN (Continued)

Test Step		Result / Action to Take
H6	CHECK FOR ADDITIONAL DTCs	
	• Refer to the continuous memory DTCs recorded during Step H1. • **Were any continuous memory DTCs retrieved during Step H1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test I: LFC 16/DTC B2290 — Occupant Classification System (OCS) Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: LFC 16 is shared between DTC B2290 and DTC B2909.

Normal Operation

The occupant classification sensor (OCS) is used to classify the front passenger seat occupant in the event of a deployable impact. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The restraints control module (RCM) monitors for fault conditions reported by the OCS system. If the RCM detects one of the following faults reported by the OCS system, it will store diagnostic trouble code (DTC) B2290 in memory and flash lamp fault code (LFC) 16 (or higher priority code if one exists) on the air bag indicator.

The OCS system components (seat cushion foam pad, bladder with pressure sensor, electronic control unit [ECU] and seat wiring harness) are calibrated to each other and are serviced as an assembly. The OCS system components are not to be installed separately. If a new OCS system, OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor, ECU and seat wiring harness) must be installed as an assembly.

Fault Conditions

The OCS system reports the following fault conditions to the RCM:

- Low resistance
- Circuit open
- Circuit short to battery
- Circuit short to ground
- A faulted pressure sensor
- A faulted ECU mounting condition

Possible Causes

An occupant classification sensor (OCS) circuit fault can be caused by:

- wiring, terminals or connectors.
- a faulty OCS system component.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT

NOTE: To identify between a production OCS system and a service OCS system (OCS service kit) inspect the OCS ECU electrical connector. A production OCS system allows the disconnect of the electrical connector from the OCS ECU. A service OCS system (OCS service kit) has the OCS ECU electrical connector glued to the ECU, it cannot and should not be disconnected or altered.

NOTE: Mounting and orientation of the OCS ECU is critical for correct system operation. Failure to correctly position and securely fasten the OCS ECU in place can set a diagnostic trouble code (DTC) in the restraints control module (RCM). If the vehicle has been in a collision in which the passenger seat may have been damaged, inspect the OCS ECU mounting area for deformation. If damaged, a new OCS service kit must be installed. In addition, make sure the mounting area of the OCS system is restored to the original production configuration (install new as necessary).

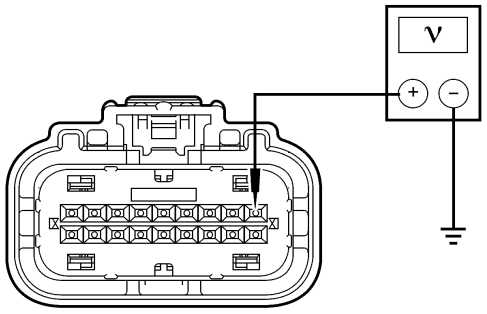
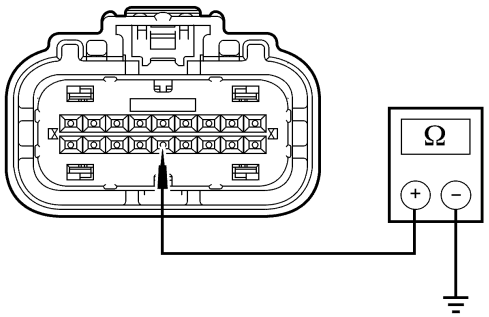
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
I1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2290 Fault PIDs. • **Was on-demand DTC B2290 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. **Vehicles with a production OCS system** For OCS system with a communications fault, GO to I2. For OCS system with an internal fault, GO to I19. For OCS system with a calibration fault, GO to I29. For OCS system with a pressure sensor fault, GO to I11. **Vehicles with a service OCS system** For OCS system with a communications fault, GO to I20. For OCS system with an internal fault, GO to I19. For OCS system with a calibration fault, GO to I29. For OCS system with a pressure sensor fault, INSTALL a new OCS system service kit. Refer to Occupant Classification Sensor in this section. GO to I31. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to I30.
I2	**CHECK THE SEAT WIRING AND CONNECTORS**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Carry out a thorough visual inspection of the OCS system wiring, terminals and connectors, the RCM wiring, terminals and connectors at RCM C2041b pins 17 and 18, and the related seat wiring harness and body wiring harness terminals and connectors. • **Were any problems noted?**	**Yes** REPAIR the seat connectors and wiring as needed. GO to I31. **No** GO to I3.

(Continued)

DIAGNOSIS AND TESTING (Continued)

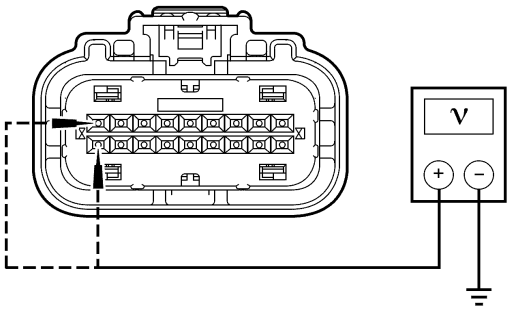
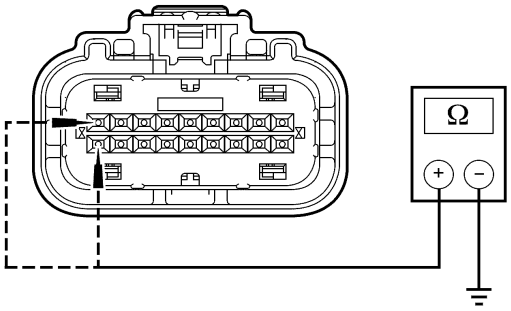
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I3	**CHECK IGNITION CIRCUIT 937 (RD/WH) FOR AN OPEN**	
	• For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Disconnect: OCS ECU C3043. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between OCS ECU C3043-1, circuit 937 (RD/WH), harness side and ground.  N0003691 • **Is the voltage greater than 10 volts?**	**Yes** GO to **I4**. **No** REPAIR circuit 937 (RD/WH). GO to **I31**.
I4	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between OCS ECU C3043-14, circuit 676 (PK/OG), harness side and ground.  N0003692 • **Is the resistance less than 5 ohms?**	**Yes** GO to **I5**. **No** REPAIR circuit 1203 (BK/LB). GO to **I31**.
I5	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO VOLTAGE BETWEEN THE OCS AND THE RCM**	
	• Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

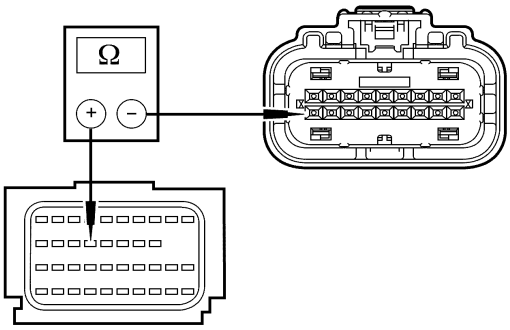
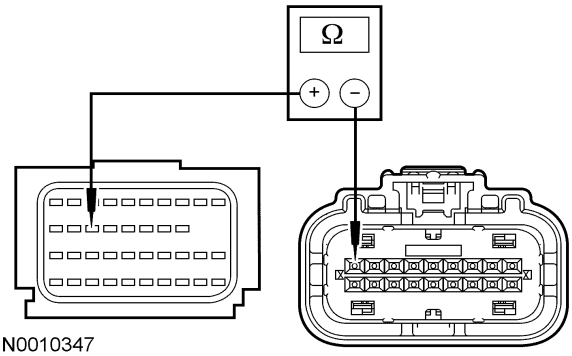
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I5	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO VOLTAGE BETWEEN THE OCS AND THE RCM (Continued)**	
	• Measure the voltage between OCS ECU C3043-18, circuit 1918 (BN/WH), harness side and ground; and between OCS ECU C3043-9, circuit 1919 (PK/OG), harness side and ground.  N0003693 • **Are the voltages less than 0.2 volt?**	**Yes** GO to I6. **No** REPAIR circuit 1918 (BN/WH) or circuit 1919 (PK/OG). GO to I31.
I6	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND BETWEEN THE OCS AND THE RCM**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between OCS ECU C3043-18, circuit 1918 (BN/WH), harness side and ground; and between OCS ECU C3043-9, circuit 1919 (PK/OG), harness side and ground.  N0003694 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to I7. **No** REPAIR circuit 1918 (BN/WH) or circuit 1919 (PK/OG). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

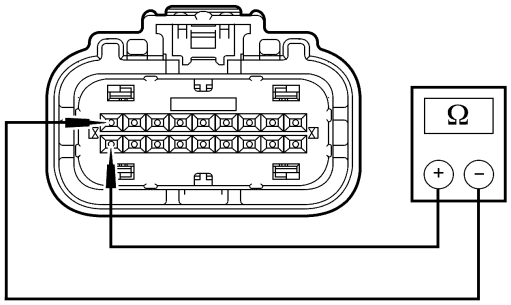
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I7	**CHECK CIRCUIT 1918 (BN/WH) FOR AN OPEN BETWEEN THE OCS AND THE RCM**	
	• Measure the resistance between RCM C2041b-17, circuit 1918 (BN/WH), harness side and OCS ECU C3043-18, circuit 1918 (BN/WH), harness side.  N0010346 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I8**. **No** REPAIR circuit 1918 (BN/WH). GO to **I31**.
I8	**CHECK CIRCUIT 1919 (PK/OG) FOR AN OPEN BETWEEN THE OCS AND THE RCM**	
	• Measure the resistance between RCM C2041b-18, circuit 1919 (PK/OG), harness side and OCS ECU C3043-9, circuit 1919 (PK/OG), harness side.  N0010347 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I9**. **No** REPAIR circuit 1919 (PK/OG). GO to **I31**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

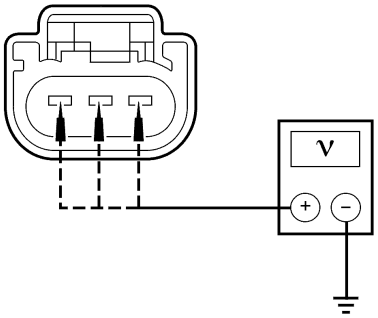
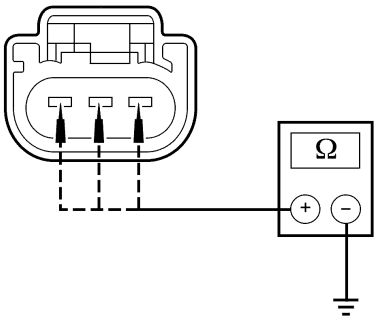
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I9	**CHECK CIRCUIT 1918 (BN/WH) FOR A SHORT TO CIRCUIT 1919 (PK/OG) BETWEEN THE OCS AND THE RCM**	
	• Measure the resistance between OCS ECU C3043-18, circuit 1918 (BN/WH), harness side and OCS ECU C3043-9, circuit 1919 (PK/OG), harness side.  N0003697 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to I10. **No** REPAIR circuits 1918 (BN/WH) and 1919 (PK/OG). GO to I31.
I10	**CHECK THE RCM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good RCM. Refer to Restraints Control Module (RCM) in this section. • Connect: OCS ECU C3043. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2290 Fault PIDs. • **Was on-demand DTC B2290 retrieved?**	**Yes** INSTALL a new OCS service kit. REFER to Occupant Classification Sensor, in this section. GO to I31. **No** Fault corrected. GO to I31.
I11	**CHECK THE SEAT WIRING AND CONNECTORS**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Carry out a thorough visual inspection of the OCS system wiring, terminals and connectors and the related seat wiring harness and body wiring harness terminals and connectors. • **Were any problems noted?**	**Yes** REPAIR the seat connectors and wiring as needed. GO to I31. **No** GO to I12.
I12	**CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT TO VOLTAGE**	
	• For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Disconnect: RCM C2041a and C2041b. • Disconnect: OCS Pressure Sensor C3159. • Disconnect: OCS ECU C3043. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

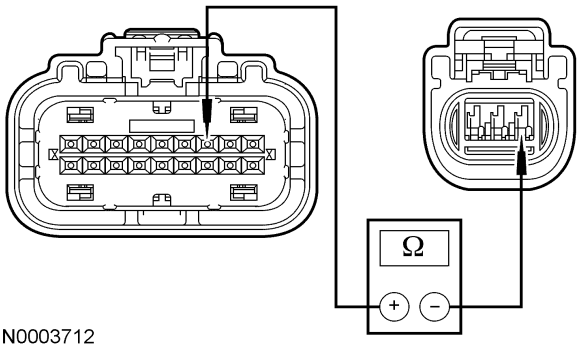
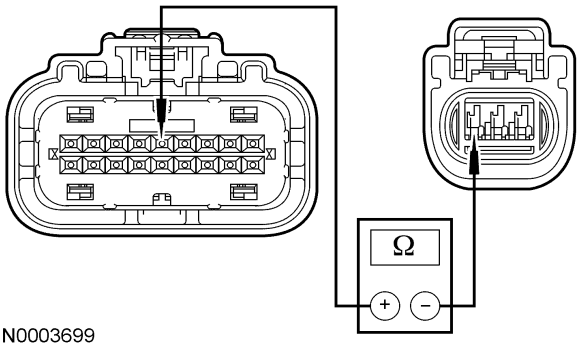
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I12	**CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between OCS pressure sensor C3159-1, circuit 1568 (RD/WH), harness side and ground; between OCS pressure sensor C3159-2, circuit 1570 (TN/BK), harness side and ground; and between OCS pressure sensor C3159-3, circuit 1569 (GY/LB), harness side and ground.  A0074066 • **Are the voltages less than 0.2 volt?**	**Yes** GO to I13. **No** REPAIR circuit 1568 (RD/WH), circuit 1569 (GY/LB) or circuit 1570 (TN/BK). GO to I31.
I13	**CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT TO GROUND**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between OCS pressure sensor C3159-1, circuit 1568 (RD/WH), harness side and ground; between OCS pressure sensor C3159-2, circuit 1570 (TN/BK), harness side and ground; and between OCS pressure sensor C3159-3, circuit 1569 (GY/LB), harness side and ground.  A0074067 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to I14. **No** REPAIR circuit 1568 (RD/WH), circuit 1569 (GY/LB) or circuit 1570 (TN/BK). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

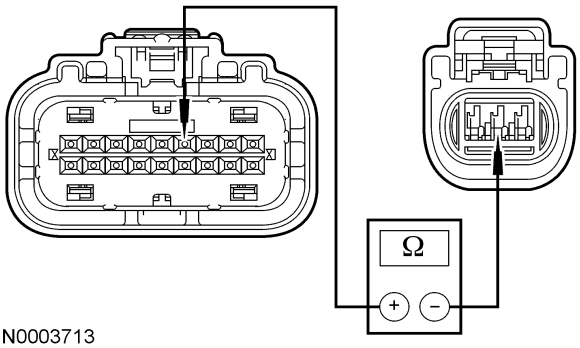
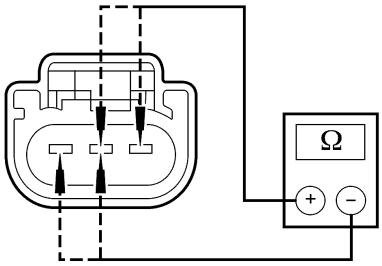
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I14	**CHECK CIRCUIT 1568 (RD/WH) FOR AN OPEN BETWEEN THE OCS ECU AND THE PRESSURE SENSOR**	
	• Measure the resistance between OCS ECU C3043-3, circuit 1568 (RD/WH), harness side and OCS pressure sensor C3159-1, circuit 1568 (RD/WH), harness side.  N0003712 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I15**. **No** REPAIR circuit 1568 (RD/WH). GO to **I31**.
I15	**CHECK CIRCUIT 1569 (GY/LB) FOR AN OPEN BETWEEN THE OCS ECU AND THE PRESSURE SENSOR**	
	• Measure the resistance between OCS ECU C3043-5, circuit 1569 (GY/DB), harness side and OCS pressure sensor C3159-3, circuit 1569 (GY/DB), harness side.  N0003699 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **I16**. **No** REPAIR circuit 1569 (GY/LB). GO to **I31**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I16	**CHECK CIRCUIT 1570 (TN/BK) FOR AN OPEN BETWEEN THE OCS ECU AND THE PRESSURE SENSOR**	
	• Measure the resistance between OCS ECU C3043-4, circuit 1570 (TN/BK), harness side and OCS pressure sensor C3159-2, circuit 1570 (TN/BK), harness side.  N0003713 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I17. **No** REPAIR circuit 1570 (TN/BK). GO to I31.
I17	**CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT**	
	• Measure the resistance between the OCS pressure sensor: — C3159-1, circuit 1568 (RD/WH), harness side and C3159-2, circuit 1570 (TN/BK), harness side. — C3159-1, circuit 1568 (RD/WH), harness side and C3159-3, circuit 1569 (GY/LB), harness side. — C3159-2, circuit 1570 (TN/BK), harness side and C3159-3, circuit 1569 (GY/LB), harness side.  A0074071 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to I18. **No** REPAIR circuit 1568 (RD/WH), circuit 1569 (GY/LB) and/or circuit 1570 (TN/BK). GO to I31.
I18	**CHECK THE OCS SYSTEM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a new OCS system service kit. Refer to Occupant Classification Sensor, in this section. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

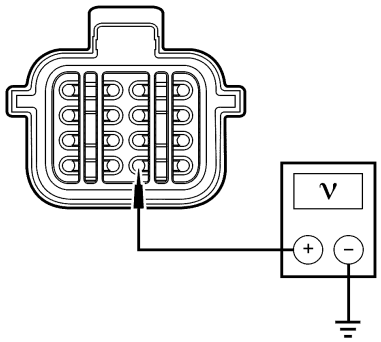
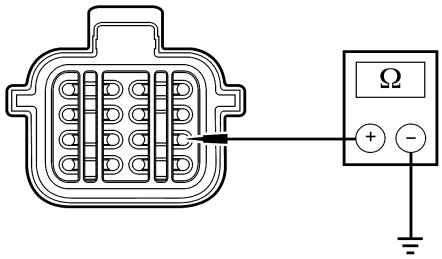
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I18	**CHECK THE OCS SYSTEM (Continued)**	
	• Enter the following diagnostic mode on the scan tool: OCS System Reset. **⚠ CAUTION: It is necessary to carry out the OCS system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS service kit is installed. A scan tool is used to trigger the active command to carry out the OCS system reset.** **⚠ CAUTION: Make sure the seat is completely assembled before carrying out the OCS system reset.** **⚠ CAUTION: The following precautions must be taken before carrying out the OCS system reset:** **— Make sure the OCS system components are connected and no faults are present.** **— Make sure the OCS system is not at a temperature below 0°C (32°F) or above 45°C (113°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits (0°C to 45°C [32°F to 113°F]) for a minimum of 30 minutes.** **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.** **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the OCS system reset process.** **NOTE:** For best results, the OCS system should be at or near room temperature, 10°C to 29°C (50°F to 85°F). **NOTE:** If the first attempt to carry out the OCS system reset is unsuccessful, a second attempt must be made. Carry out the OCS system reset active command using the scan tool. • Key in OFF position. **NOTE:** The ignition switch must be cycled after the OCS system reset. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2290 Fault PIDs. • **Was on-demand DTC B2290 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **I31**. **No** Fault corrected. GO to **I31**.
I19	**CHECK FOR AN OCS MOUNTING FAULT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • **NOTE:** The ECU must be correctly positioned and securely fastened in place. Failure to do so can set a diagnostic trouble code (DTC) in the restraints control module (RCM). Inspect the OCS ECU for correct mounting location and direction, for OCS fastener tightness, for damage to the OCS ECU and seat cushion pan. • **Is the OCS ECU correctly located and are the fasteners tight and is there no damage to components?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to **I31**. **No** REPAIR as necessary. REFER to Occupant Classification Sensor in this section for correct mounting location/direction of the ECU, the correct fasteners for mounting of the ECU. If the seat cushion pan is damaged, refer to the appropriate procedure in Section 501-10 for repair. GO to **I31**.
I20	**CHECK THE SEAT WIRING AND CONNECTORS**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

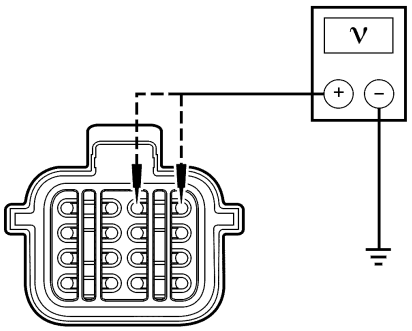
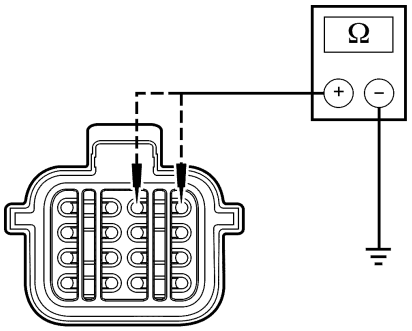
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I20	**CHECK THE SEAT WIRING AND CONNECTORS (Continued)**	
	• Carry out a thorough visual inspection of the OCS system wiring, terminals and connectors, the RCM wiring, terminals and connectors at RCM C2041b pins 17 and 18, and the related seat wiring harness and body wiring harness terminals and connectors. • **Were any problems noted?**	**Yes** REPAIR the seat connectors and wiring as needed. GO to I21. **No** GO to I21.
I21	**CHECK IGNITION CIRCUIT 937 (RD/WH) FOR AN OPEN**	
	• For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Disconnect: Passenger Seat C300. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger seat C300-14, circuit 937 (RD/WH), body harness side and ground.  N0011646 • **Is the voltage greater than 10 volts?**	**Yes** GO to I22. **No** REPAIR circuit 937 (RD/WH). GO to I31.
I22	**CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between passenger seat C300-9, circuit 1203 (BK/LB), body harness side and ground.  N0011647 • **Is the resistance less than 5 ohms?**	**Yes** GO to I23. **No** REPAIR circuit 1203 (BK/LB). GO to I31.
I23	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO VOLTAGE BETWEEN THE PASSENGER SEAT AND THE RCM**	
	• Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

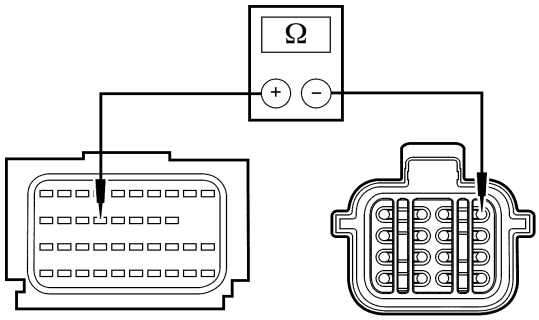
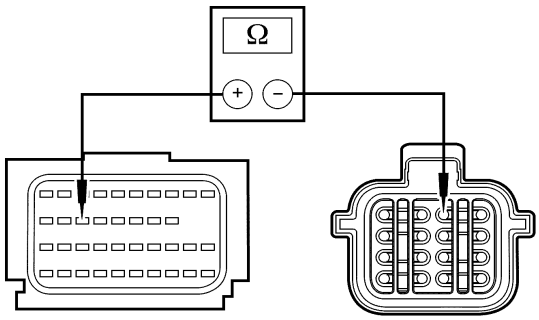
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I23	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO VOLTAGE BETWEEN THE PASSENGER SEAT AND THE RCM (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger seat C300-1, circuit 1918 (BN/WH), body harness side and ground; and between passenger seat C300-2, circuit 1919 (PK/OG), body harness side and ground.  N0011648 • **Are the voltages less than 0.2 volt?**	**Yes** GO to I24. **No** REPAIR circuit 1918 (BN/WH) or circuit 1919 (PK/OG). GO to I31.
I24	**CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND BETWEEN THE PASSENGER SEAT AND THE RCM**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between passenger seat C300-1, circuit 1918 (BN/WH), body harness side and ground; and between passenger seat C300-2, circuit 1919 (PK/OG), body harness side and ground.  N0011649 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to I25. **No** REPAIR circuit 1918 (BN/WH) or circuit 1919 (PK/OG). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

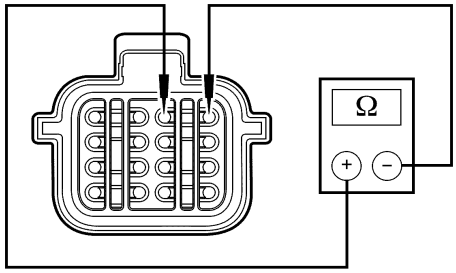
PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I25	**CHECK CIRCUIT 1918 (BN/WH) FOR AN OPEN BETWEEN THE PASSENGER SEAT AND THE RCM**	
	• Measure the resistance between RCM C2041b-17, circuit 1918 (BN/WH), harness side and passenger seat C300-1, circuit 1918 (BN/WH), body harness side.  N0011650 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I26. **No** REPAIR circuit 1918 (BN/WH). GO to I31.
I26	**CHECK CIRCUIT 1919 (PK/OG) FOR AN OPEN BETWEEN THE PASSENGER SEAT AND THE RCM**	
	• Measure the resistance between RCM C2041b-18, circuit 1919 (PK/OG), harness side and passenger seat C300-2, circuit 1919 (PK/OG), body harness side.  N0011651 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to I27. **No** REPAIR circuit 1919 (PK/OG). GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I27	**CHECK CIRCUIT 1918 (BN/WH) FOR A SHORT TO CIRCUIT 1919 (PK/OG) BETWEEN THE PASSENGER SEAT AND THE RCM**	
	• Measure the resistance between passenger seat C300-1, circuit 1918 (BN/WH), body harness side and passenger seat C300-2, circuit 1919 (PK/OG), body harness side.  N0011652 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to I28. **No** REPAIR circuits 1918 (BN/WH) and 1919 (PK/OG). GO to I31.
I28	**CHECK THE RCM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good RCM. Refer to Restraints Control Module (RCM) in this section. • Connect: Passenger Seat C300. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2290 Fault PIDs. • **Was on-demand DTC B2290 retrieved?**	**Yes** INSTALL a new OCS service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** Fault corrected. GO to I31.
I29	**CHECK THE OCS SYSTEM**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I29	**CHECK THE OCS SYSTEM (Continued)**	
	• Enter the following diagnostic mode on the scan tool: OCS System Reset. **⚠ CAUTION: It is necessary to carry out the OCS system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS service kit is installed. A scan tool is used to trigger the active command to carry out the OCS system reset.** **⚠ CAUTION: Make sure the seat is completely assembled before carrying out the OCS system reset.** **⚠ CAUTION: The following precautions must be taken before carrying out the OCS system reset:** **— Make sure the OCS system components are connected and no faults are present.** **— Make sure the OCS system is not at a temperature below 0°C (32°F) or above 45°C (113°F) when initiating the OCS system reset process. If the vehicle has been exposed to extreme cold or hot temperatures, the vehicle must be exposed and kept at a temperature within the limits, 0°C to 45°C (32°F to 113°F) for a minimum of 30 minutes.** **— Make sure nothing is present on the passenger seat before carrying out the OCS system reset and nothing is placed on the seat during the process.** **— Make sure a minimum 8-second time period has passed after cycling the ignition switch ON before the OCS system reset process.** **NOTE:** For best results, the OCS system should be at or near room temperature, 10°C to 29°C (50°F to 85°F). **NOTE:** If the first attempt to carry out the OCS system reset is unsuccessful, a second attempt must be made. Carry out the OCS system reset, using the scan tool. • Key in OFF position. **NOTE:** The ignition switch must be cycled after the OCS system reset. • Key in ON position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2290 Fault PIDs. • **Was on-demand DTC B2290 retrieved?**	**Yes** INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to I31. **No** Fault corrected. GO to I31.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST I: LFC 16/DTC B2290 — OCCUPANT CLASSIFICATION SYSTEM (OCS) FAULT (Continued)

Test Step		Result / Action to Take
I30	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2290 Fault PIDs. • **Was on-demand DTC B2290 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded in Step I1, GO to the appropriated pinpoint test step. **Vehicles with a production OCS system** For OCS system with a communications fault, GO to **I2**. For OCS system with an internal fault, GO to **I19**. For OCS system with a calibration fault, GO to **I29**. For OCS system with a pressure sensor fault, GO to **I11**. **Vehicles with a service OCS system** For OCS system with a communications fault, GO to **I20**. For OCS system with an internal fault, GO to **I19**. For OCS system with a calibration fault, GO to **I29**. For OCS system with a pressure sensor fault, INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor in this section. GO to **I31**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **I31**.
I31	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step I1. • **Were any continuous memory DTCs retrieved during Step I1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test J: LFC 33 and 34/DTC B2292 — Restraint System — Safety Belt Pretensioner Status

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

The safety belt pretensioners are activated by the restraints control module (RCM) to remove excessive slack from the safety belt webbing when an impact exceeding preprogramed limits is detected. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks all of the safety belt pretensioners for faults. If the RCM detects one of the following faults on any of the safety belt pretensioner circuits, it will store diagnostic trouble code (DTC) B2292 in memory and flash, depending on the fault indicator, or lamp fault code (LFC) 33 or 34 depending on the fault (or higher priority code if one exists) on the air bag indicator.

Fault Conditions

The RCM monitors for the following fault conditions:

- Low resistance
- High resistance or circuit open
- Circuit short to voltage
- Circuit short to ground

Possible Causes

A safety belt pretensioner status fault can be caused by:

- wiring, terminals or connectors.
- a faulty safety belt pretensioner.
- a faulted RCM.

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS

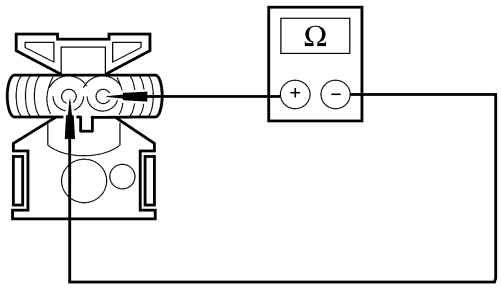
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
J1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2292 Fault PIDs. • **Was on-demand DTC B2292 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to J2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to J12.

(Continued)

DIAGNOSIS AND TESTING (Continued)

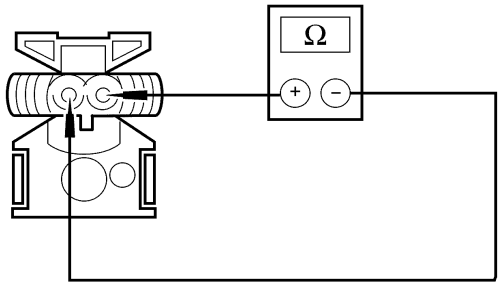
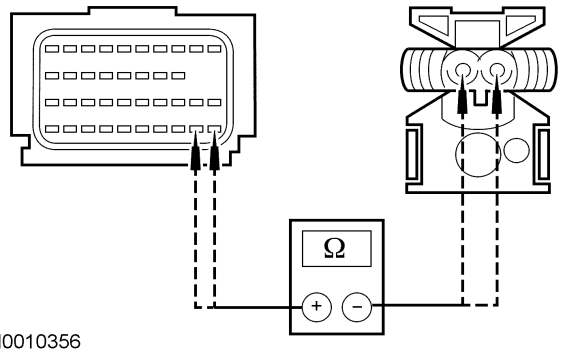
PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS (Continued)

Test Step		Result / Action to Take
J2	**CHECK THE PRETENSIONERS**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: The Affected Safety Belt Pretensioner C3014 (Driver) or C303 (Passenger). • Connect: Restraint System Diagnostic Tool 418-F395 to the Affected Safety Belt Pretensioner C3014 (Driver) or C303 (Passenger). • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2292 Fault PIDs. • **Was on-demand DTC B2292 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For driver safety belt pretensioner with a low resistance fault, GO to **J3**. For driver safety belt pretensioner with an open circuit fault, GO to **J5**. For driver safety belt pretensioner with a short to battery fault, GO to **J7**. For driver safety belt pretensioner with a short to ground fault, GO to **J9**. For passenger safety belt pretensioner with a low resistance fault, GO to **J4**. For passenger safety belt pretensioner with an open circuit fault, GO to **J6**. For passenger safety belt pretensioner with a short to battery fault, GO to **J8**. For passenger safety belt pretensioner with a short to ground fault, GO to **J10**. **No** INSTALL a new driver or passenger safety belt pretensioner. REFER to Section 501-20A. GO to **J13**.
J3	**CHECK THE DRIVER SAFETY BELT PRETENSIONER CIRCUITS FOR LOW RESISTANCE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between driver safety belt pretensioner C3014, circuit 1079 (LG/RD), harness side and C3014, circuit 1080 (LG/BK), harness side.  A0030495 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to **J11**. **No** REPAIR circuits 1079 (LG/RD) and 1080 (LG/BK). GO to **J13**.
J4	**CHECK THE PASSENGER SAFETY BELT PRETENSIONER CIRCUITS FOR LOW RESISTANCE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

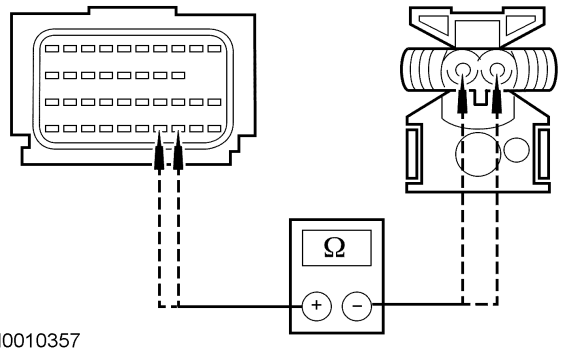
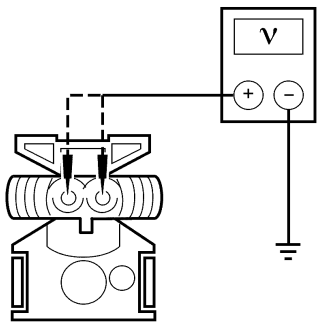
PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS (Continued)

Test Step		Result / Action to Take
J4	**CHECK THE PASSENGER SAFETY BELT PRETENSIONER CIRCUITS FOR LOW RESISTANCE (Continued)**	
	• Disconnect: Passenger Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between passenger safety belt pretensioner C303, circuit 1081 (YE/RD), harness side and C303, circuit 1082 (LB/BK), harness side.  A0030495 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to J11. **No** REPAIR circuits 1081 (YE/RD) and 1082 (LB/BK). GO to J13.
J5	**CHECK CIRCUIT 1079 (LG/RD) AND CIRCUIT 1080 (LG/BK) FOR AN OPEN**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-31, circuit 1079 (LG/RD), harness side and driver safety belt pretensioner C3014, circuit 1079 (LG/RD), harness side; and between RCM C2041b-32, circuit 1080 (LG/BK), harness side and the driver safety belt pretensioner C3014, circuit 1080 (LG/BK), harness side  N0010356 • **Are the resistances less than 0.5 ohm?**	**Yes** GO to J11. **No** REPAIR circuit 1079 (LG/RD) or circuit 1080 (LG/BK). GO to J13.
J6	**CHECK CIRCUIT 1081 (YE/RD) AND CIRCUIT 1082 (LB/BK) FOR AN OPEN**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

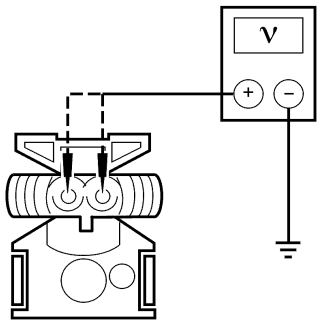
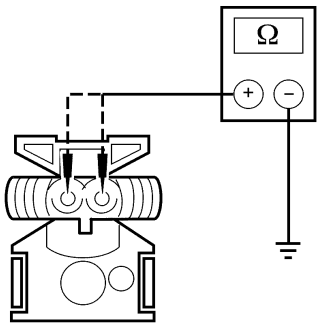
PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS (Continued)

Test Step		Result / Action to Take
J6	**CHECK CIRCUIT 1081 (YE/RD) AND CIRCUIT 1082 (LB/BK) FOR AN OPEN (Continued)**	
	• Measure the resistance between RCM C2041b-33, circuit 1081 (YE/RD), harness side and passenger safety belt pretensioner C303, circuit 1081 (YE/RD), harness side; and between RCM C2041b-34, circuit 1082 (LB/BK), harness side and passenger safety belt pretensioner C303, circuit 1082 (LB/BK), harness side.  N0010357 • **Are the resistances less than 0.5 ohm?**	**Yes** GO to J11. **No** REPAIR circuit 1081 (YE/RD) or circuit 1082 (LB/BK). GO to J13.
J7	**CHECK CIRCUIT 1079 (LG/RD) AND CIRCUIT 1080 (LG/BK) FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between driver safety belt pretensioner C3014 C3014, circuit 1079 (LG/RD), harness side and ground; and between driver safety belt pretensioner C3014, circuit 1080 (LG/BK), harness side and ground.  A0094162 • **Is the voltage less than 0.2 volt?**	**Yes** GO to J11. **No** REPAIR circuit 1079 (LG/RD) or circuit 1080 (LG/BK). GO to J13.
J8	**CHECK CIRCUIT 1081 (YE/RD) AND CIRCUIT 1082 (LB/BK) FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Safety Belt Pretensioner Restraint Diagnostic System Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

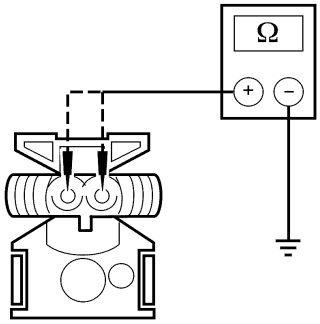
PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS (Continued)

Test Step		Result / Action to Take
J8	**CHECK CIRCUIT 1081 (YE/RD) AND CIRCUIT 1082 (LB/BK) FOR A SHORT TO VOLTAGE (Continued)**	
	• Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger safety belt pretensioner C303, circuit 1082 (LB/BK), harness side and ground; and between passenger safety belt pretensioner C303, circuit 1081 (YE/RD), harness side and ground.  A0094162 • **Is the voltage less than 0.2 volt?**	**Yes** GO to **J11**. **No** REPAIR circuit 1081 (YE/RD) or circuit 1082 (LB/BK). GO to **J13**.
J9	**CHECK CIRCUIT 1079 (LG/RD) AND CIRCUIT 1080 (LG/BK) FOR A SHORT TO GROUND**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between driver safety belt pretensioner C3014, circuit 1079 (LG/RD), harness side and ground; and between driver safety belt pretensioner C3014, circuit 1080 (LG/BK), harness side and ground.  A0094161 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to **J11**. **No** REPAIR circuit 1079 (LG/RD) or circuit 1080 (LG/BK). GO to **J13**.
J10	**CHECK CIRCUIT 1081 (YE/RD) AND CIRCUIT 1082 (LB/BK) FOR A SHORT TO GROUND**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Safety Belt Pretensioner Restraint Diagnostic System Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS (Continued)

Test Step		Result / Action to Take
J10	**CHECK CIRCUIT 1081 (YE/RD) AND CIRCUIT 1082 (LB/BK) FOR A SHORT TO GROUND (Continued)**	
	• Measure the resistance between passenger safety belt pretensioner C303, circuit 1081 (YE/RD), harness side and ground; and between passenger safety belt pretensioner C303, circuit 1082 (LB/BK).  A0094161 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to J11. **No** REPAIR circuit 1081 (YE/RD) or circuit 1082 (LB/BK). GO to J13.
J11	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure the safety belt pretensioner restraint system diagnostic tool, sensor electrical connectors, and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Connect: Driver and Passenger Safety Belt Pretensioner Restraint System Diagnostic Tools. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2292 Fault PIDs. • **Was on-demand DTC B2292 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to J13. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to J13.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 — RESTRAINT SYSTEM — SAFETY BELT PRETENSIONER STATUS (Continued)

Test Step		Result / Action to Take
J12	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: The Affected Safety Belt Pretensioner C3014 (Driver) C303 (Passenger). • Connect: Restraint System Diagnostic Tool 418-F395 to the Affected Safety Belt Pretensioner C3014 (Driver) C303 (Passenger). • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2292 Fault PIDs. • **Was on-demand DTC B2292 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. CHECK for causes of the intermittent fault at or near the affected safety belt pretensioner connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to J13. If an intermittent concern **was not** found and repaired, USE the fault PIDs recorded and GO to the appropriate pinpoint test step. For driver safety belt pretensioner with a low resistance fault, GO to J3. For driver safety belt pretensioner with an open circuit fault, GO to J5. For driver safety belt pretensioner with a short to battery fault, GO to J7. For driver safety belt pretensioner with a short to ground fault, GO to J9. For passenger safety belt pretensioner with a low resistance fault, GO to J4. For passenger safety belt pretensioner with an open circuit fault, GO to J6. For passenger safety belt pretensioner with a short to battery fault, GO to J8. For passenger safety belt pretensioner with a short to ground fault, GO to J10. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to J13.
J13	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step J1. • **Were any continuous memory DTCs retrieved during Step J1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test K: LFC 19 and 21/DTC B2293 — Restraint System — Air Bag Status

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The front air bags will deploy upon receiving a flow of current from the restraints control module (RCM). Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks all of the front air bag circuits for faults. If the RCM detects one of the following faults on any of the front air bag circuits, it will store diagnostic trouble code (DTC) B2293 in memory and flash either lamp fault code (LFC) 19 or 21 depending on the fault (or higher priority code if one exists) on the air bag indicator.

Fault Conditions

The RCM monitors for the following fault conditions:

- Low resistance
- High resistance or circuit open
- Circuit short to voltage
- Circuit short to ground

Possible Causes

A driver air bag status fault can be caused by:

- wiring, terminals or connectors.
- a faulty clockspring.
- a faulty driver air bag module.
- a faulted RCM.

A passenger air bag status fault can be caused by:

- wiring, terminals or connectors.
- a faulty passenger air bag module.
- a faulted RCM.

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
K1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2293 Fault PIDs. • **Was on-demand DTC B2293 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to K2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to K38.

(Continued)

DIAGNOSIS AND TESTING (Continued)

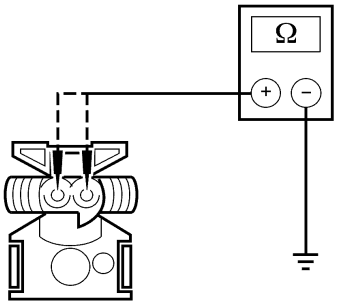
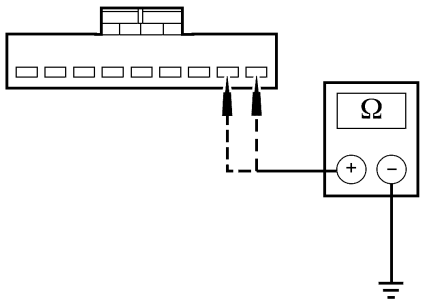
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K2	**CHECK THE DRIVER AND THE PASSENGER AIR BAG MODULES**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • If the fault PID was reported for the driver air bag module: — Remove the driver air bag module. Refer to Driver Air Bag Module in this section. — Connect Restraint System Diagnostic Tool 418-F395 (2 required) to the driver air bag module squib 1 and squib 2 connectors. • If the fault PID was reported for the passenger air bag module: — Disconnect passenger air bag module C256. — Connect Restraint System Diagnostic Tool 418-F403 to passenger air bag module C256. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2293 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded in the Step K1, GO to the appropriate pinpoint test step. For driver air bag module squib 1 with a short to ground fault, GO to K3. For driver air bag module squib 1 with a short to battery fault, GO to K5. For driver air bag module squib 1 with an open circuit fault, GO to K7. For driver air bag module squib 1 with a low resistance fault, GO to K11. For passenger air bag module squib 1 with a short to ground fault, GO to K14. For passenger air bag module squib 1 with a short to battery fault, GO to K15. For passenger air bag module squib 1 with an open circuit fault, GO to K16. For passenger air bag module squib 1 with a low resistance fault, GO to K18. For driver air bag module squib 2 with a short to ground fault, GO to K20. For driver air bag module squib 2 with a short to battery fault, GO to K22. For driver air bag module squib 2 with an open circuit fault, GO to K24. For driver air bag module squib 2 with a low resistance fault, GO to K28. For passenger air bag module squib 2 with a short to ground fault, GO to K31. For passenger air bag module squib 2 with a short to battery fault, GO to K32. For passenger air bag module squib 2 with an open circuit fault, GO to K33. For passenger air bag module squib 2 with a low resistance fault, GO to K35. **No** If a fault PID was against driver air bag module in Step K1, INSTALL a new driver air bag module. REFER to Driver Air Bag Module in this section. GO to K39. If a fault PID was against passenger air bag module in Step K1, INSTALL a new passenger air bag module. REFER to Passenger Air Bag Module in this section. GO to K39.
K3	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: Driver Air Bag Module Squib 1 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

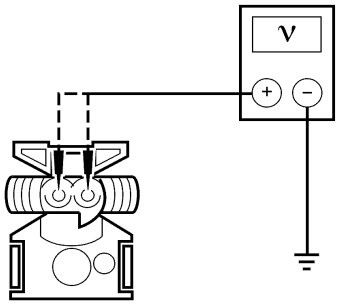
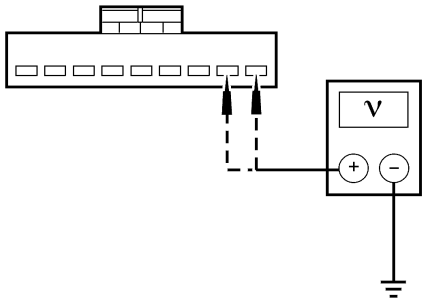
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K3	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1 (Continued)**	
	• Measure the resistance between driver air bag module squib 1 electrical connector, circuit 614 (GY/OG), harness side and ground; and between driver air bag module squib 1 electrical connector, circuit 615 (GY/WH), harness side and ground.  A0088716 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K4**.
K4	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between clockspring C2274-1, circuit 614 (GY/OG), harness side and ground; and between clockspring C2274-2, circuit 615 (GY/WH), harness side and ground.  A0088717 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 614 (GY/OG) or 615 (GY/WH). GO to **K39**.
K5	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Squib 1 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

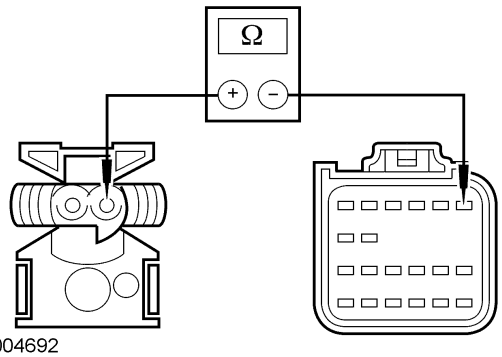
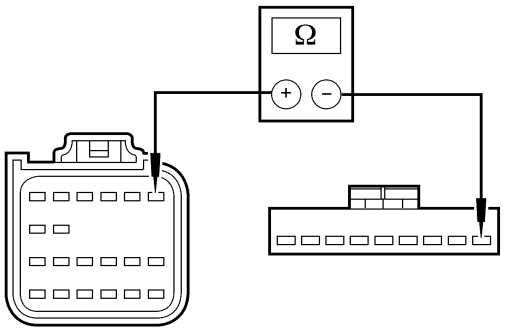
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K5	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1 (Continued)**	
	• Measure the voltage between driver air bag module squib 1 electrical connector, circuit 614 (GY/OG), harness side and ground; and between driver air bag module squib 1 electrical connector, circuit 615 (GY/WH), harness side and ground.  A0088715 • **Are the voltages less than 0.2 volt?**	**Yes** GO to **K37**. **No** GO to **K6**.
K6	**CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Key in OFF position. • Disconnect: Clockspring C2274. • Key in ON position. • Measure the voltage between clockspring C2274-1, circuit 614 (GY/OG), harness side and ground; and between clockspring C2274-2, circuit 615 (GY/WH), harness side and ground.  A0088718 • **Are the voltages less than 0.2 volt?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 614 (GY/OG) or 615 (GY/WH). GO to **K39**.
K7	**CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Squib 1 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

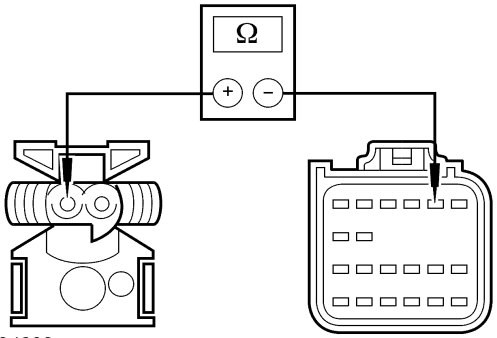
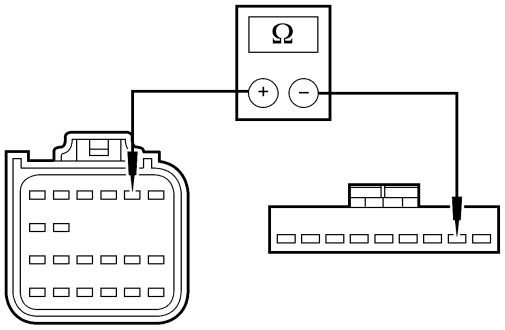
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K7	**CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1 (Continued)**	
	• Measure the resistance between RCM C2041a-1, circuit 614 (GY/OG), harness side and driver air bag module squib 1, circuit 614 (GY/OG), harness side.  N0004692 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K9**. **No** GO to **K8**.
K8	**CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-1, circuit 614 (GY/OG), harness side and clockspring C2274-1, circuit 614 (GY/OG), harness side.  N0005029 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 614 (GY/OG). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

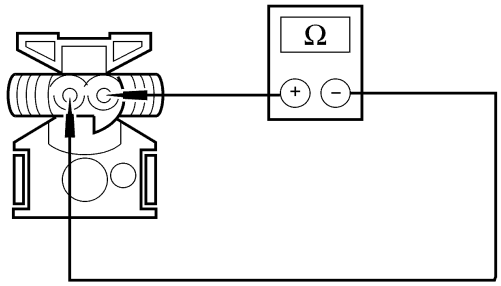
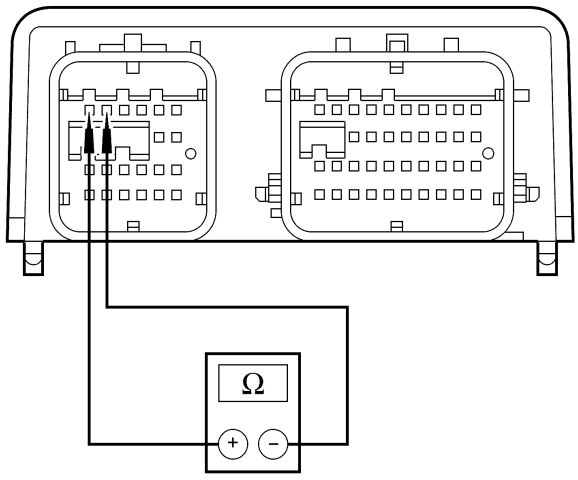
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K9	**CHECK FOR AN OPEN ON CIRCUIT 615 (GY/WH) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1**	
	• Measure the resistance between RCM C2041a-2, circuit 615 (GY/WH), harness side and driver air bag module squib 1, circuit 615 (GY/WH), harness side.  N0004693 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** GO to **K10**.
K10	**CHECK FOR AN OPEN ON CIRCUIT 615 (GY/WH) BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-2, circuit 615 (GY/WH), harness side and clockspring C2274-2, circuit 615 (GY/WH), harness side.  N0005030 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 615 (GY/WH). GO to **K39**.
K11	**CHECK FOR LOW RESISTANCE ON CIRCUITS 614 (GY/OG) AND 615 (GY/WH) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Squib 1 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

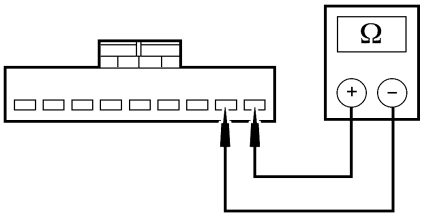
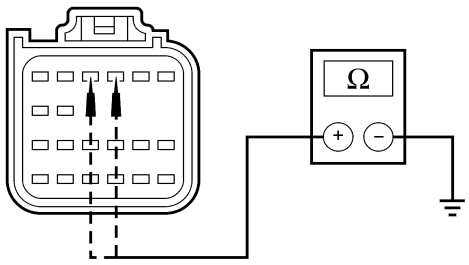
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K11	**CHECK FOR LOW RESISTANCE ON CIRCUITS 614 (GY/OG) AND 615 (GY/WH) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 1 (Continued)**	
	• Measure the resistance between driver air bag module squib 1, circuit 614 (GY/OG), harness side and circuit 615 (GY/WH), harness side.  A0030492 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K12**.
K12	**MEASURE THE RESISTANCE BETWEEN THE RCM CIRCUITS 614 (GY/OG) AND 615 (GY/WH)**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a pin 1, component side and pin 2, component side.  A0041266 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K13**. **No** GO to **K37**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

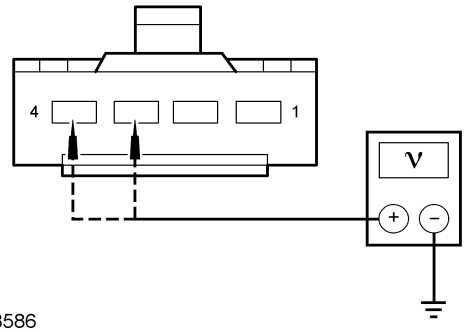
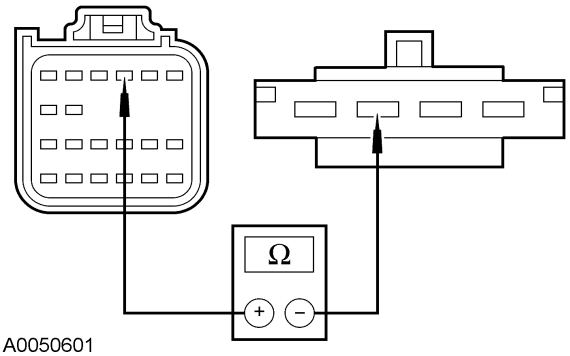
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K13	**CHECK FOR LOW RESISTANCE ON CIRCUITS 614 (GY/OG) AND 615 (GY/WH) BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Connect: RCM C2041a and C2041b. • Disconnect: Clockspring C2274. • Measure the resistance between clockspring C2274-1, circuit 614 (GY/OG), harness side and C2274-2, circuit 615 (GY/WH), harness side.  A0088719 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 614 (GY/OG) and 615 (GY/WH). GO to **K39**.
K14	**CHECK CIRCUITS 607 (LB/OG) AND 616 (PK/BK) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-3, circuit 607 (LB/OG), harness side and ground; and between RCM C2041a-4, circuit 616 (PK/BK), harness side and ground.  A0041267 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to **K37**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 607 (LB/OG) or 616 (PK/BK). GO to **K39**.
K15	**CHECK CIRCUITS 607 (LB/OG) AND 616 (PK/BK) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

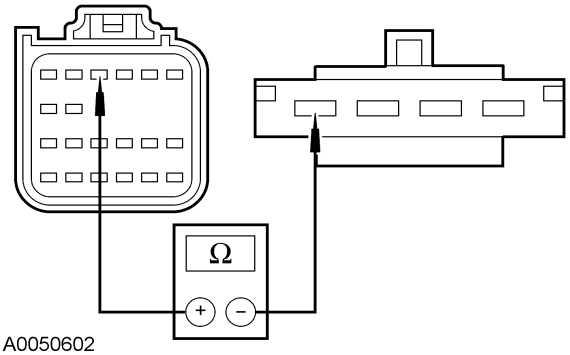
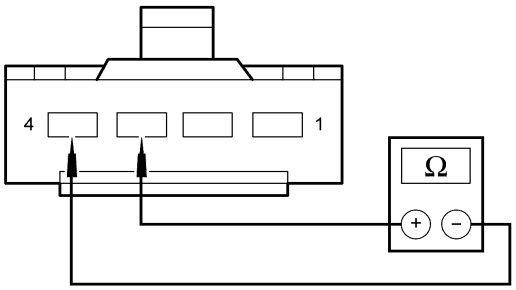
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K15	**CHECK CIRCUITS 607 (LB/OG) AND 616 (PK/BK) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 1 (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger air bag module C256-3, circuit 607 (LB/OG), harness side and ground; and between passenger air bag module C256-4, circuit 616 (PK/BK), harness side and ground.  A0088586 • **Are the voltages less than 0.2 volt?**	**Yes** GO to **K37**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 607 (LB/OG) or 616 (PK/BK). GO to **K39**.
K16	**CHECK FOR AN OPEN ON CIRCUIT 607 (LB/OG) BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-3, circuit 607 (LB/OG), harness side and passenger air bag module C256-3, circuit 607 (LB/OG), harness side.  A0050601 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K17**. **No** REPAIR circuit 607 (LB/OG). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

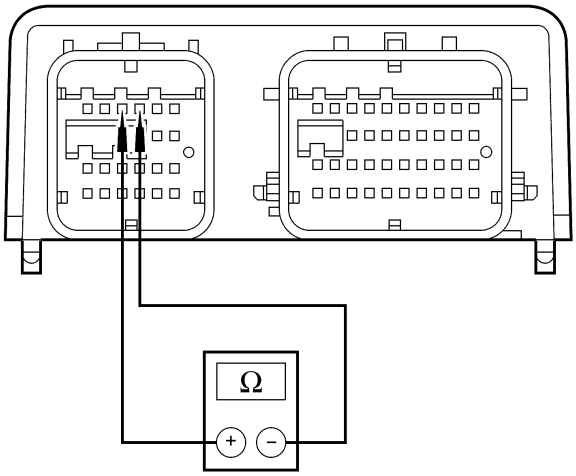
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K17	**CHECK FOR AN OPEN ON CIRCUIT 616 (PK/BK) BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 1**	
	• Measure the resistance between RCM C2041a-4, circuit 616 (PK/BK), harness side and passenger air bag module C256-4, circuit 616 (PK/BK), harness side.  A0050602 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** REPAIR circuit 616 (PK/BK). GO to **K39**.
K18	**CHECK FOR LOW RESISTANCE ON CIRCUITS 607 (LB/OG) AND 616 (PK/BK) BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 1**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Measure the resistance between passenger air bag module C256-3, circuit 607 (LB/OG), harness side and C256-4, circuit 616 (PK/BK), harness side.  A0029872 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K19**.
K19	**CHECK THE RESISTANCE BETWEEN THE RCM CIRCUITS 607 (LB/OG) AND 616 (PK/BK)**	
	• Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

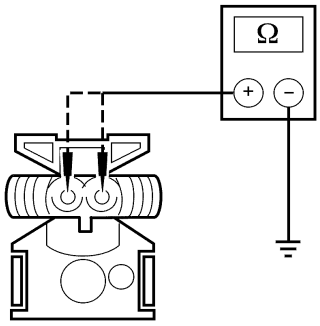
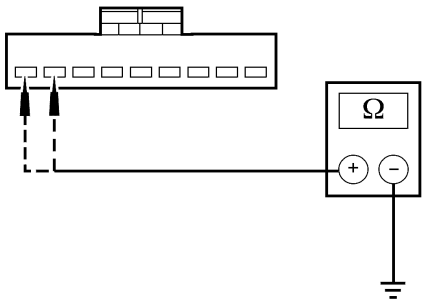
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K19	**CHECK THE RESISTANCE BETWEEN THE RCM CIRCUITS 607 (LB/OG) AND 616 (PK/BK) (Continued)**	
	• Measure the resistance between RCM C2041a pin 3, component side and pin 4, component side.  A0041271 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR circuits 607 (LB/OG) and 616 (PK/BK). GO to **K39**. **No** GO to **K37**.
K20	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Disconnect: Driver Air Bag Module Squib 2 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

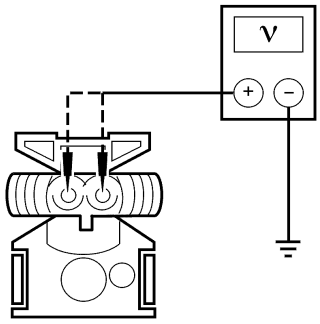
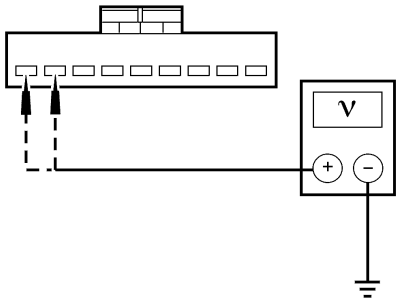
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K20	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2 (Continued)**	
	• Measure the resistance between driver air bag module squib 2, circuit 1516 (YE/WH), harness side and ground; and between driver air bag module squib 2, circuit 1517 (RD/OG), harness side and ground.  A0094161 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K21**.
K21	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between clockspring C2274-8, circuit 1516 (YE/WH), harness side and ground; and between clockspring C2274-9, circuit 1517 (RD/OG), harness side and ground.  A0088721 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1516 (YE/WH) or 1517 (RD/OG). GO to **K39**.
K22	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Squib 2 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

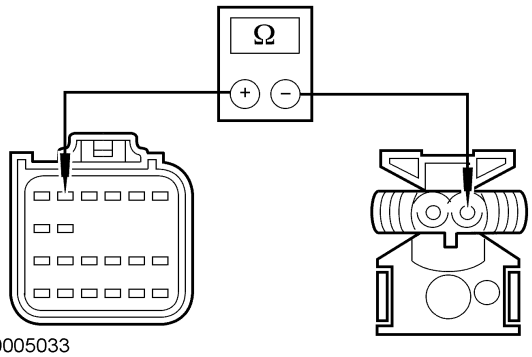
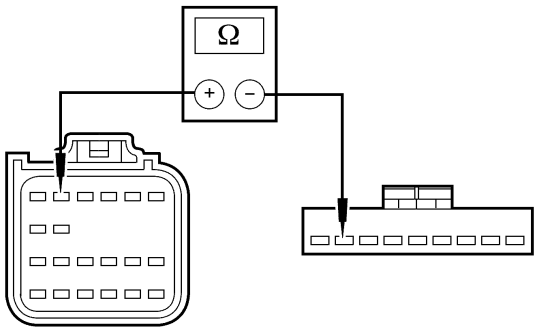
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K22	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2 (Continued)**	
	• Measure the voltage between driver air bag module squib 2, circuit 1516 (YE/WH), harness side and ground; and between driver air bag module squib 2, circuit 1517 (RD/OG), harness side and ground.  A0094162 • **Are the voltages less than 0.2 volt?**	**Yes** GO to **K37**. **No** GO to **K23**.
K23	**CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Key in OFF position. • Disconnect: Clockspring C2274. • Key in ON position. • Measure the voltage between clockspring C2274-8, circuit 1516 (YE/WH), harness side and ground; and between clockspring C2274-9, circuit 1517 (RD/OG), harness side and ground.  A0088722 • **Are the voltages less than 0.2 volt?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1516 (YE/WH) or 1517 (RD/OG). GO to **K39**.
K24	**CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Squib 2 Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

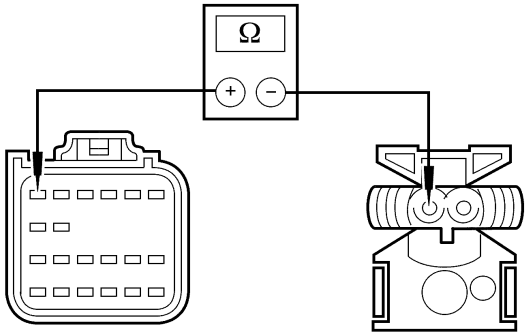
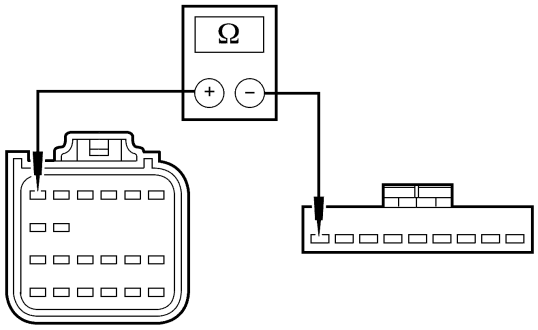
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K24	**CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2 (Continued)**	
	• Measure the resistance between RCM C2041a-5, circuit 1516 (YE/WH), harness side and driver air bag module squib 2, circuit 1516 (YE/WH), harness side.  N0005033 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K26**. **No** GO to **K25**.
K25	**CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-5, circuit 1516 (YE/WH), harness side and clockspring C2274-8, circuit 1516 (YE/WH), harness side.  N0005034 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 1516 (YE/WH). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

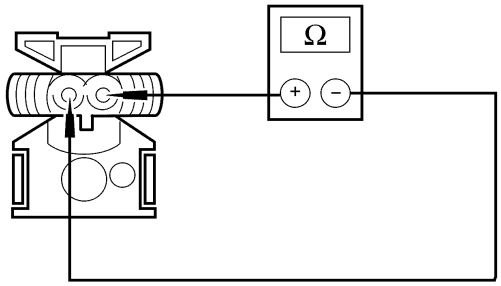
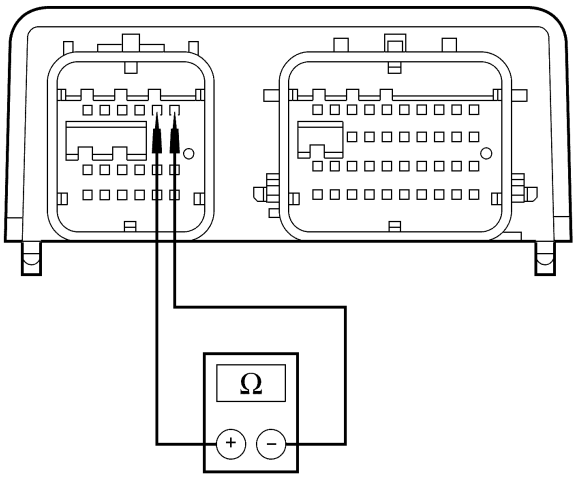
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K26	**CHECK FOR AN OPEN ON CIRCUIT 1517 (RD/OG) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2**	
	• Measure the resistance between RCM C2041a-6, circuit 1517 (RD/OG), harness side and driver air bag module squib 2, circuit 1517 (RD/OG), harness side.  N0005036 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** GO to **K27**.
K27	**CHECK FOR AN OPEN ON CIRCUIT 1517 (RD/OG) BETWEEN THE RCM AND THE CLOCKSPRING**	
	• Disconnect: Clockspring C2274. • Measure the resistance between RCM C2041a-6, circuit 1517 (RD/OG), harness side and clockspring C2274-9, circuit 1517 (RD/OG), harness side.  N0005035 • **Is the resistance less than 0.5 ohm?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuit 1517 (RD/OG). GO to **K39**.
K28	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Air Bag Module Squib 2 Restraint System Diagnostic Tool.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

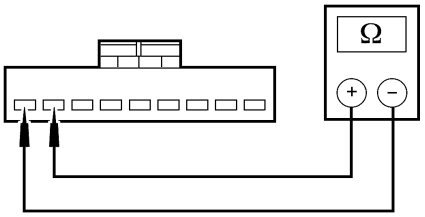
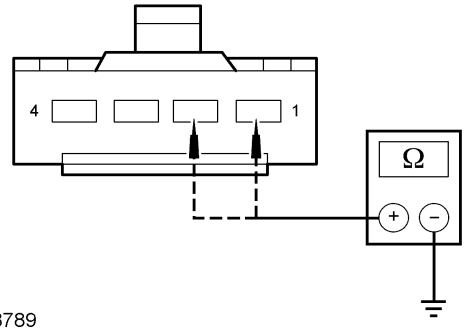
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K28	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) BETWEEN THE RCM AND THE DRIVER AIR BAG MODULE SQUIB 2 (Continued)**	
	• Measure the resistance between driver air bag module squib 2, circuit 1516 (YE/WH), harness side, and circuit 1517 (RD/OG), harness side.  A0030495 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K29**.
K29	**MEASURE THE RESISTANCE BETWEEN THE RCM CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG)**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a pin 5, component side and pin 6, component side.  A0041276 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K30**. **No** GO to **K37**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

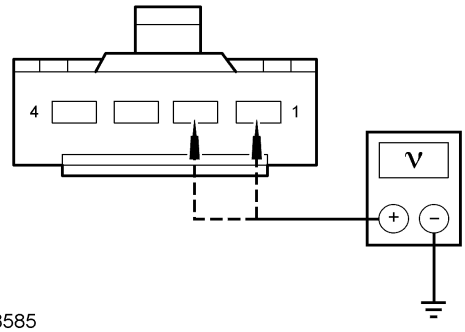
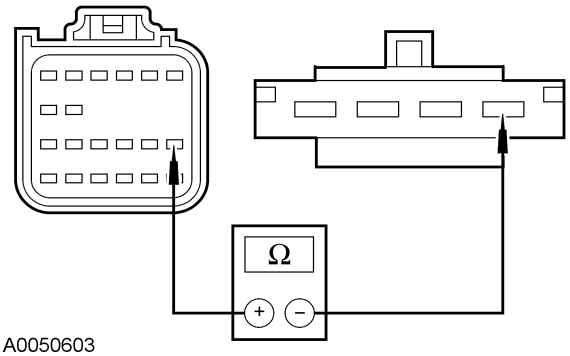
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K30	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) BETWEEN THE DRIVER AIR BAG MODULE AND THE CLOCKSPRING**	
	• Connect: RCM C2041a and C2041b. • Disconnect: Clockspring C2274. • Measure the resistance between clockspring C2274-8, circuit 1516 (YE/WH), harness side and C2274-9, circuit 1517 (RD/OG), harness side.  A0088725 • **Is the resistance greater than 10,000 ohms?**	**Yes** INSTALL a new clockspring. REFER to Clockspring in this section. GO to **K39**. **No** REPAIR circuits 1516 (YE/WH) and 1517 (RD/OG). GO to **K39**.
K31	**CHECK CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between passenger air bag module C256-1, circuit 1518 (RD/WH), harness side and ground; and between passenger air bag module C256-2, circuit 1519 (LG/RD), harness side and ground.  A0088789 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to **K37**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1518 (RD/WH) or 1519 (LG/RD). GO to **K39**.
K32	**CHECK CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

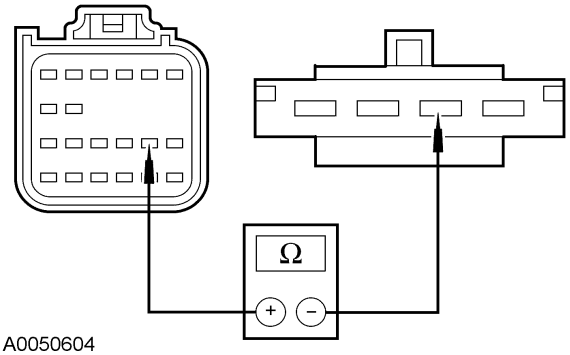
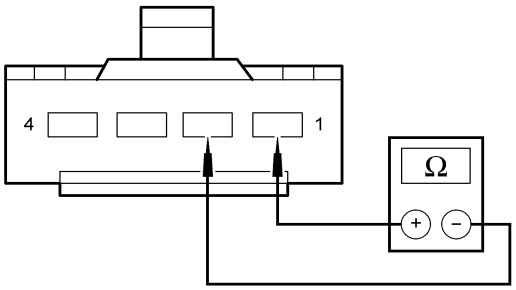
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K32	**CHECK CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 2 (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger air bag module C256-1, circuit 1518 (RD/WH), harness side and ground; and between passenger air bag module C256-2, circuit 1519 (LG/RD), harness side and ground.  A0088585 • **Are the voltages less than 0.2 volt?**	**Yes** GO to **K37**. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1518 (RD/WH) or 1519 (LG/RD). GO to **K39**.
K33	**CHECK FOR AN OPEN ON CIRCUIT 1518 (RD/WH) BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041a-13, circuit 1518 (RD/WH), harness side and passenger air bag module C256-1, circuit 1518 (RD/WH), harness side.  A0050603 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K34**. **No** REPAIR circuit 1518 (RD/WH). GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

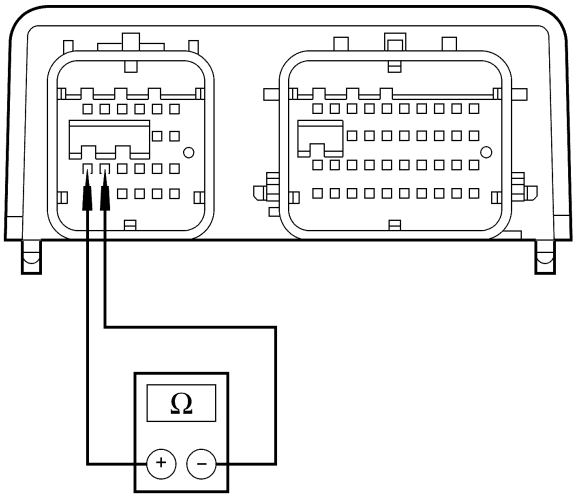
PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K34	**CHECK FOR AN OPEN ON CIRCUIT 1519 (LG/RD) BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE**	
	• Measure the resistance between RCM C2041a-14, circuit 1519 (LG/RD), harness side and passenger air bag module C256-2, circuit 1519 (LG/RD), harness side.  A0050604 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **K37**. **No** REPAIR circuit 1519 (LG/RD). GO to **K39**.
K35	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) BETWEEN THE RCM AND THE PASSENGER AIR BAG MODULE SQUIB 2**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool. • Measure the resistance between passenger air bag module C256-1, circuit 1518 (RD/WH), harness side and C256-2, circuit 1519 (LG/RD), harness side.  A0029882 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **K37**. **No** GO to **K36**.
K36	**MEASURE THE RESISTANCE BETWEEN THE RCM CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD)**	
	• Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K36	**MEASURE THE RESISTANCE BETWEEN THE RCM CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD) (Continued)**	
	• Measure the resistance between RCM C2041a pin 13, component side and pin 14, component side.  A0041281 • **Is the resistance greater than 10,000 ohms?**	**Yes** REPAIR circuit 1518 (RD/WH) and 1519 (LG/RD). GO to K39. **No** GO to K37.
K37	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Connect: Driver or Passenger Air Bag Module Restraint System Diagnostic Tool(s). • Connect: RCM C2041a and C2041b. • Connect: Clockspring C2274 (If previously disconnected). • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2293 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to K39. **No** Fault corrected. GO to K39.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K38	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • If the fault PID was reported for the driver air bag module: — Remove the driver air bag module. Refer to Driver Air Bag Module in this section. — Connect restraint system diagnostic tools 418-F395 (2 required) to driver air bag module squib 1 and squib 2 connectors. • If the fault PID was reported for the passenger air bag module: — Disconnect passenger air bag module C256. — Connect Restraint System Diagnostic Tool 418-F403 to passenger air bag module C256. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2293 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. CHECK for causes of the intermittent fault at or near the affected air bag module connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to **K39**. If an intermittent concern **was not** found and repaired, use the fault PIDs recorded and GO to the appropriate pinpoint test step. For driver air bag module squib 1 with a short to ground fault, GO to **K3**. For driver air bag module squib 1 with a short to battery fault, GO to **K5**. For driver air bag module squib 1 with an open circuit fault, GO to **K7**. For driver air bag module squib 1 with a low resistance fault, GO to **K11**. For passenger air bag module squib 1 with a short to ground fault, GO to **K14**. For passenger air bag module squib 1 with a short to battery fault, GO to **K15**. For passenger air bag module squib 1 with an open circuit fault, GO to **K16**. For passenger air bag module squib 1 with a low resistance fault, GO to **K18**. For driver air bag module squib 2 with a short to ground fault, GO to **K20**. For driver air bag module squib 2 with a short to battery fault, GO to **K22**. For driver air bag module squib 2 with an open circuit fault, GO to **K24**. For driver air bag module squib 2 with a low resistance fault, GO to **K28**. For passenger air bag module squib 2 with a short to ground fault, GO to **K31**. For passenger air bag module squib 2 with a short to battery fault, GO to **K32**. For passenger air bag module squib 2 with an open circuit fault, GO to **K33**. For passenger air bag module squib 2 with a low resistance fault, GO to **K35**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness, cycling the ignition key frequently, and rotating the steering wheel (driver air bag module fault). REPAIR any intermittent concerns found. GO to **K39**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 — RESTRAINT SYSTEM — AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
K39	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step K1. • **Were any continuous memory DTCs retrieved during Step K1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test L: LFC 22 and 23/DTC B2295 — Restraint System — Side Air Bag Status

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The seat side air bags will deploy upon receiving a flow of current from the restraints control module (RCM). Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks all of the seat side air bag circuits for faults. If the RCM detects one of the following faults on any of the seat side air bag circuits, it will store diagnostic trouble code (DTC) B2295 in memory and flash either lamp fault code (LFC) 22 or 23 depending on the fault (or higher priority code if one exists) on the air bag indicator.

Fault Conditions

The RCM monitors for the following fault conditions:

- Low resistance
- High resistance or circuit open
- Circuit short to voltage
- Circuit short to ground

Possible Causes

A seat side air bag status fault can be caused by:

- wiring, terminals or connectors.
- a faulty seat side air bag module.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
L1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	⚠ WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **⚠ WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **⚠ WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2295 Fault PIDs. • **Was on-demand DTC B2295 retrieved?**	**Yes** **Vehicles with seat side air bag modules** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to L3. **Vehicles without seat side air bag modules** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to L2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to L17.
L2	**CHECK THE SEAT SIDE AIR BAG BRIDGE RESISTOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver and Passenger Seat Side Air Bag Bridge Resistors. • Transfer the driver seat side air bag bridge resistor to the passenger side, and the passenger seat side air bag bridge resistor to the driver side. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2295 Fault PIDs. • **Did the fault PID transfer between the driver side and the passenger side?**	**Yes** INSTALL a new seat side air bag bridge resistor. GO to L18. **No** Using the fault PIDs recorded in Step L1, GO to the appropriate pinpoint test step. For driver seat side air bag module with a short to battery fault, GO to L4. For driver seat side air bag module with a short to ground fault, GO to L5. For driver seat side air bag module with an open circuit fault, GO to L6. For driver seat side air bag module with a low resistance fault, GO to L8. For passenger seat side air bag module with a short to battery fault, GO to L10. For passenger seat side air bag module with a short to ground fault, GO to L11. For passenger seat side air bag module with an open circuit fault, GO to L12. For passenger seat side air bag module with a low resistance fault, GO to L14.

(Continued)

DIAGNOSIS AND TESTING (Continued)

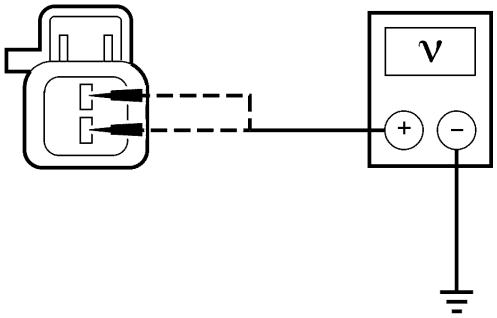
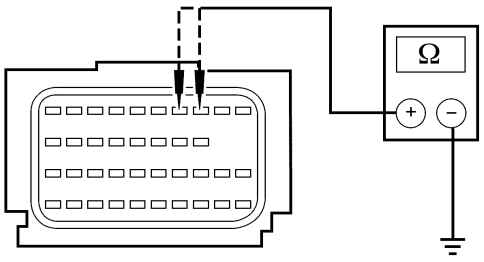
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L3	**CHECK THE DRIVER AND PASSENGER SEAT SIDE AIR BAG MODULES**	**Yes** Using the fault PIDs recorded in Step U1, GO to the appropriate pinpoint test step. For driver seat side air bag module with a short to battery fault, GO to L4. For driver seat side air bag module with a short to ground fault, GO to L5. For driver seat side air bag module with an open circuit fault, GO to L6. For driver seat side air bag module with a low resistance fault, GO to L8. For passenger seat side air bag module with a short to battery fault, GO to L10. For passenger seat side air bag module with a short to ground fault, GO to L11. For passenger seat side air bag module with an open circuit fault, GO to L12. For passenger seat side air bag module with a low resistance fault, GO to L14. **No** REMOVE and INSPECT the seat side air bag module jumper harness for damage. If a concern is found, REPAIR the harness. If no problem is found in the harness or the harness cannot be repaired, INSTALL a new seat side air bag module. REFER to Side Air Bag Module in this section. GO to L18.
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: The Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Connect: Restraint System Diagnostic Tool 418-133 to the Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2295 Fault PIDs. • **Was on-demand DTC B2295 retrieved?**	
L4	**CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Disconnect: Driver Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

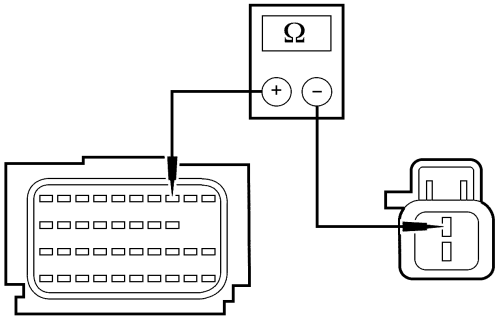
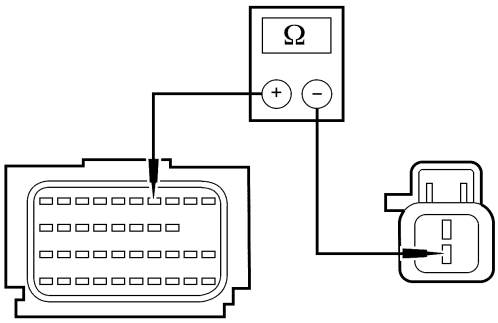
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L4	**CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the voltage between driver seat side air bag module C367-1 (or driver seat side air bag bridge resistor C3108-1), circuit 1257 (WH/LB), harness side and ground; and between driver seat side air bag module C367-2 (or driver seat side air bag bridge resistor C3108-2), circuit 1258 (RD), harness side and ground.  A0088573 • **Are the voltages less than 0.2 volt?**	**Yes** GO to L16. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1257 (WH/LB) or 1258 (RD). GO to L18.
L5	**CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Disconnect: Driver Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-3, circuit 1257 (WH/LB), harness side and ground; and between RCM C2041b-4, circuit 1258 (RD), harness side and ground.  A0079102 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to L16. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1257 (WH/LB) or 1258 (RD). GO to L18.
L6	**CHECK FOR AN OPEN ON CIRCUITS 1257 (WH/LB) BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

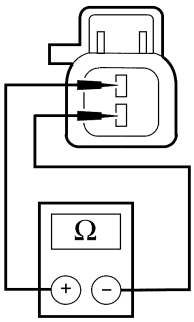
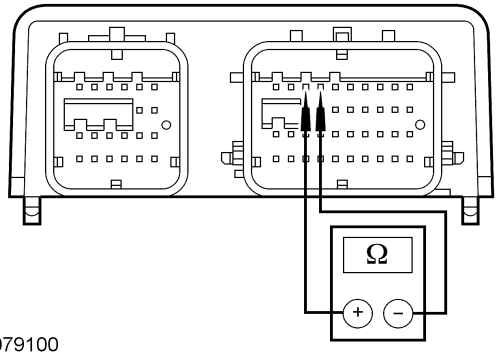
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L6	**CHECK FOR AN OPEN ON CIRCUITS 1257 (WH/LB) BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Disconnect: Driver Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-3, circuit 1257 (WH/LB), harness side and driver seat side air bag module C367-1 (or driver seat side air bag bridge resistor C3108-1), circuit 1257 (WH/LB), harness side.  N0010355 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to L7. **No** REPAIR circuit 1257 (WH/LB). GO to L18.
L7	**CHECK FOR AN OPEN ON CIRCUIT 1258 (RD) BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE**	
	• Measure the resistance between RCM C2041b-4, circuit 1258 (RD), harness side and driver seat side air bag module C367-2 (or driver seat side air bag bridge resistor C3108-2), circuit 1258 (RD), harness side.  N0010354 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to L16. **No** REPAIR circuit 1258 (RD). GO to L18.
L8	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1257 (WH/LB) AND 1258 (RD) BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Disconnect: Driver Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

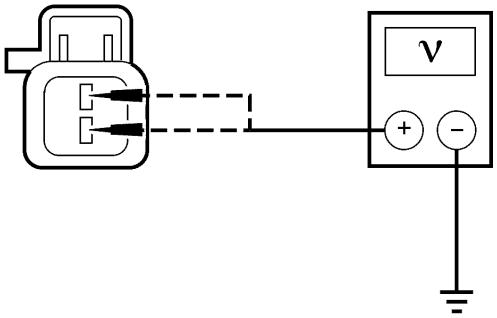
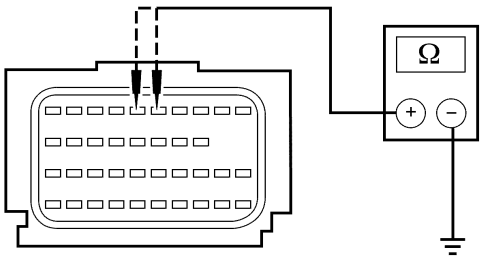
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L8	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1257 (WH/LB) AND 1258 (RD) BETWEEN THE RCM AND THE DRIVER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the resistance between driver seat side air bag module C367-1 (or driver seat side air bag bridge resistor C3108-1), circuit 1257 (WH/LB), harness side and C367-2 (or driver seat side air bag bridge resistor C3108-2), circuit 1258 (RD), harness side.  A0029887 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **L16**. **No** GO to **L9**.
L9	**MEASURE THE RESISTANCE BETWEEN RCM CIRCUITS 1257 (WH/LB) AND 1258 (RD)**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b pin 3, component side and pin 4, component side.  A0079100 • **Is the resistance greater than 10,000 ohms?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1257 (WH/LB) and circuit 1258 (RD). GO to **L18**. **No** GO to **L16**.
L10	**CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO BATTERY BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Disconnect: Passenger Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

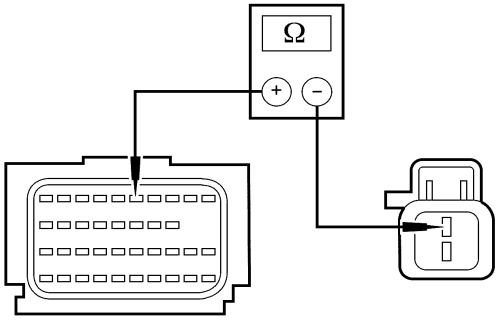
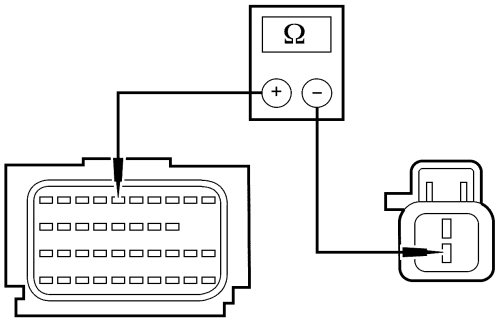
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L10	**CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO BATTERY BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the voltage between passenger seat air bag module C337-1 (or passenger seat side air bag bridge resistor C3109-1), circuit 1259 (WH/YE), harness side and ground; and between passenger seat air bag module C337-2 (or passenger seat side air bag bridge resistor C3109-2), circuit 1260 (BN/YE), harness side and ground.  A0088573 • **Are the voltages less than 0.2 volt?**	**Yes** GO to L16. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1259 (WH/YE) or 1260 (BN/YE). GO to L18.
L11	**CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Disconnect: Passenger Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-5, circuit 1259 (WH/YE), harness side and ground; and between RCM C2041b-6, circuit 1260 (BN/YE), harness side and ground.  A0079098 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to L16. **No** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1259 (WH/YE) or 1260 (BN/YE). GO to L18.
L12	**CHECK FOR AN OPEN ON CIRCUITS 1259 (WH/YE) BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

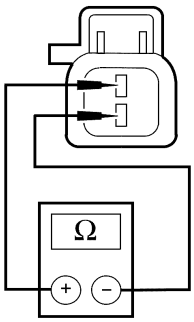
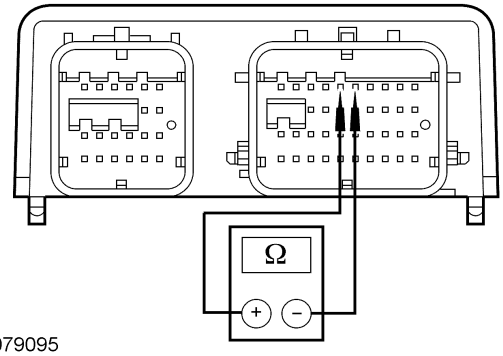
PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L12	**CHECK FOR AN OPEN ON CIRCUITS 1259 (WH/YE) BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Disconnect: Passenger Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-5, circuit 1259 (WH/YE), harness side and passenger seat side air bag module C337-1 (or passenger seat side air bag bridge resistor C3109-1), circuit 1259 (WH/YE), harness side.  N0010353 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **L13**. **No** REPAIR circuit 1259 (WH/YE). GO to **L18**.
L13	**CHECK FOR AN OPEN ON CIRCUIT 1260 (BN/YE) BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Measure the resistance between RCM C2041b-6, circuit 1260 (BN/YE), harness side and passenger seat side air bag module C337-2 (or passenger seat side air bag bridge resistor C3109-2), circuit 1260 (BN/YE), harness side.  N0010352 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **L16**. **No** REPAIR circuit 1260 (BN/YE). GO to **L18**.
L14	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Disconnect: Passenger Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags).	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L14	**CHECK FOR LOW RESISTANCE ON CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) BETWEEN THE RCM AND THE PASSENGER SEAT SIDE AIR BAG MODULE (Continued)**	
	• Measure the resistance between passenger seat side air bag module C337-1 (or passenger seat side air bag bridge resistor C3109-1), circuit 1259 (WH/YE), harness side and C337-2 (or passenger seat side air bag bridge resistor C3109-2), circuit 1260 (BN/YE), harness side.  A0029887 • **Is the resistance greater than 10,000 ohms?**	**Yes** GO to **L16**. **No** GO to **L15**.
L15	**MEASURE THE RESISTANCE BETWEEN RCM CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE)**	
	• Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b pin 5, component side and pin 6, component side.  A0079095 • **Is the resistance greater than 10,000 ohms?**	**Yes** Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar. REPAIR circuit 1259 (WH/YE) and circuit 1260 (BN/YE). GO to **L18**. **No** GO to **L16**.
L16	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L16	**CONFIRM THE RCM FAULT (Continued)**	
	• Connect: Driver and Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool (With Seat Side Air Bags). • Connect: Driver and Passenger Seat Side Air Bag Bridge Resistor (Without Seat Side Air Bags). • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2295 Fault PIDs. • **Was on-demand DTC B2295 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to L18. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to L18.
L17	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: The Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Connect: Restraint System Diagnostic Tool 418-133 to the Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger). • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2295 Fault PIDs. • **Was on-demand DTC B2295 retrieved?**	**Yes** **All vehicles** CHECK for causes of the intermittent fault at or near the affected seat side air bag connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to L18. If an intermittent concern **was not** found and repaired, USE the fault PIDs recorded and GO to the appropriate pinpoint test step. **Vehicles with seat side air bag modules** For driver seat side air bag module with a short to battery fault, GO to L4. For driver seat side air bag module with a short to ground fault, GO to L5. For driver seat side air bag module with an open circuit fault, GO to L6. For driver seat side air bag module with a low resistance fault, GO to L8. For passenger seat side air bag module with a short to battery fault, GO to L10. For passenger seat side air bag module with a short to ground fault, GO to L11. For passenger seat side air bag module with an open circuit fault, GO to L12. For passenger seat side air bag module with a low resistance fault, GO to L14. **Vehicles without seat side air bag modules** GO to L2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to L18.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 — RESTRAINT SYSTEM — SIDE AIR BAG STATUS (Continued)

Test Step		Result / Action to Take
L18	CHECK FOR ADDITIONAL DTCs	
	• Refer to the continuous memory DTCs recorded during Step L1. • **Were any continuous memory DTCs retrieved during Step L1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test M: LFC 42, 43 and 44/DTC B2296 — Restraint System — Impact Sensor Status

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The impact sensor(s) provide data to the restraints control module (RCM) for use in calculating impact severity. This is accomplished using various electrical and electro-mechanical sensor(s) throughout the vehicle. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks all of the impact sensor circuits for faults. If the RCM detects one of the following faults on any of the impact sensor circuits, it will store diagnostic trouble code (DTC) B2296 in memory and flash either lamp fault code (LFC) 42, 43 or 44 depending on the fault (or higher priority code if one exists) on the air bag indicator.

Fault Conditions

The RCM monitors for the following fault conditions:

- Mounting resistance high
- Low resistance (short) between feed and return circuits
- Circuit open
- Circuit short to battery
- Circuit short to ground

Possible Causes

A front impact severity sensor status fault can be caused by:

- wiring, terminals or connectors.
- a faulty front impact severity sensor.
- incorrect front impact severity sensor mounting.
- a faulted RCM.

A side impact sensor status fault can be caused by:

- wiring, terminals or connectors.
- a faulty side impact sensor.
- incorrect side impact sensor mounting.
- a faulty RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS

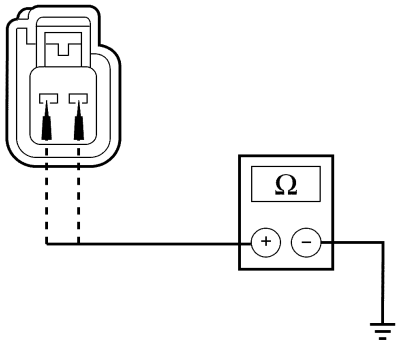
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
M1	**CHECK FOR A HARD OR INTERMITTENT DTC**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For driver side impact sensor with a mounting/communications fault, GO to **M2**. For driver side impact sensor with a internal fault, INSTALL a new driver side impact sensor. GO to **M34**. For passenger side impact sensor with a mounting/communications fault, GO to **M12**. For passenger side impact sensor with a internal fault, INSTALL a new passenger side impact sensor. GO to **M34**. For front severity crash impact sensor with a mounting/communications fault, GO to **M22**. For front severity crash impact sensor with an internal fault, INSTALL a new front severity crash impact sensor. GO to **M34**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **M33**.
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	
M2	**INSPECT THE DRIVER SIDE IMPACT SENSOR MOUNTING, MOUNTING BRACKET AND MOUNTING SURFACE**	**Yes** CLEAN, TIGHTEN bolt or REPAIR the mounting surface as necessary. REINSTALL the driver side impact sensor. GO to **M34**. **No** GO to **M3**.
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Inspect the driver side impact sensor mounting and make sure that the retaining bolt is fully seated and tightened correctly. • Remove the driver side impact sensor. Refer to Side Impact Sensor in this section. • Visually inspect the driver side impact sensor, mounting bracket and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the driver side impact sensor mounting bracket attached to the mounting surface incorrectly or was the driver side impact sensor bolt not fully seated and tightened correctly?**	
M3	**INSTALL THE DRIVER SIDE IMPACT SENSOR AND CARRY OUT AN ON-DEMAND SELF TEST**	**Yes** GO to **M4**. **No** Fault corrected. GO to **M34**.
	• Clean and repair the mounting surface as necessary. • Clean the driver side impact sensor mounting bolt. • Install the driver side impact sensor. Refer to Side Impact Sensor. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	

(Continued)

DIAGNOSIS AND TESTING (Continued)

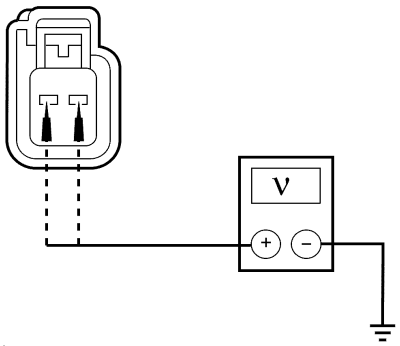
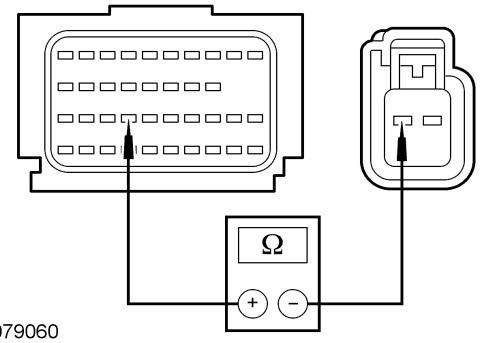
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M4	**CHECK THE DRIVER SIDE IMPACT SENSOR GROUND CIRCUIT 1262 (BN/LG) FOR HIGH RESISTANCE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Side Impact Sensor C3209. • Measure the resistance between driver side impact sensor C3209-1, circuit 1262 (BN/LG), harness side and the driver side impact sensor case ground. • **Is the resistance less than 100 ohms?**	**Yes** GO to **M6**. **No** GO to **M5**.
M5	**CLEAN THE DRIVER SIDE IMPACT SENSOR MOUNTING SURFACE AND CARRY OUT AN ON-DEMAND SELF TEST**	
	• Remove the driver side impact sensor. Refer to Side Impact Sensor. • Clean and repair the mounting surface as necessary. • Clean the driver side impact sensor mounting bolt. • Install the driver side impact sensor. Refer to Side Impact Sensor. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** GO to **M6**. **No** Fault corrected. GO to **M34**.
M6	**CHECK CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE DRIVER SIDE IMPACT SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Side Impact Sensor C3209. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between driver side impact sensor C3209-2, circuit 1261 (WH/LG), harness side and ground; and between driver side impact sensor C3209-1, circuit 1262 (BN/LG), harness side and ground.  A0058373 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to **M7**. **No** REPAIR circuit 1261 (WH/LG) or 1262 (BN/LG). GO to **M34**.
M7	**CHECK CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER SIDE IMPACT SENSOR**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

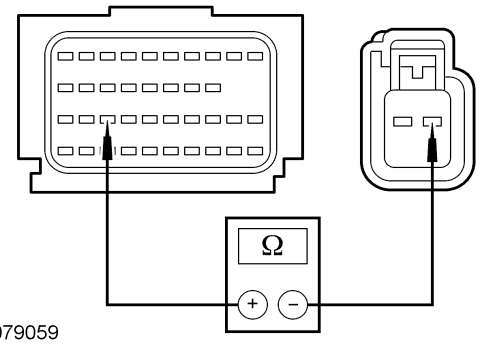
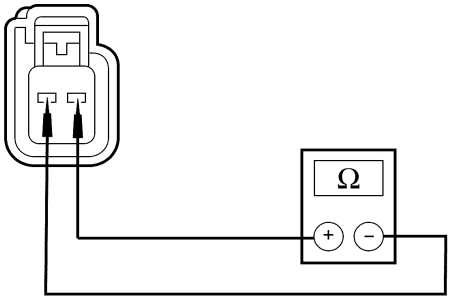
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M7	**CHECK CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE DRIVER SIDE IMPACT SENSOR (Continued)**	
	• Measure the voltage between driver side impact sensor C3209-2, circuit 1261 (WH/LG), harness side and ground; and between driver side impact sensor C3209-1, circuit 1262 (BN/LG), harness side and ground.  A0058374 • **Are the voltages less than 0.2 volt?**	**Yes** GO to **M8**. **No** REPAIR circuit 1261 (WH/LG) or 1262 (BN/LG). GO to **M34**.
M8	**CHECK FOR AN OPEN ON CIRCUIT 1261 (WH/LG) BETWEEN THE RCM AND THE DRIVER SIDE IMPACT SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-27, circuit 1261 (WH/LG), harness side and driver side impact sensor C3209-1, circuit 1261 (WH/LG), harness side.  A0079060 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **M9**. **No** REPAIR circuit 1261 (WH/LG). GO to **M34**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M9	**CHECK FOR AN OPEN ON CIRCUIT 1262 (BN/LG) BETWEEN THE RCM AND THE DRIVER SIDE IMPACT SENSOR**	
	• Measure the resistance between RCM C2041b-28, circuit 1262 (BN/LG), harness side and driver side impact sensor C3209-1, circuit 1262 (BN/LG), harness side.  A0079059 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M10. **No** REPAIR circuit 1262 (BN/LG). GO to M34.
M10	**CHECK CIRCUIT 1261 (WH/LG) FOR A SHORT TO CIRCUIT 1262 (BN/LG) BETWEEN THE RCM AND THE DRIVER SIDE IMPACT SENSOR**	
	• Measure the resistance between driver side impact sensor C3209-2, circuit 1261 (WH/LG) and C3209-1, circuit 1262 (BN/LG), harness side.  A0058377 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to M11. **No** REPAIR circuits 1261 (WH/LG) and 1262 (BN/LG). GO to M34.
M11	**CHECK THE DRIVER SIDE IMPACT SENSOR**	
	• Install a known good driver side impact sensor. Refer to Side Impact Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Were any on-demand fault PIDs against the driver side impact sensor?**	**Yes** GO to M32. **No** Fault corrected. GO to M34.
M12	**INSPECT THE PASSENGER SIDE IMPACT SENSOR MOUNTING, MOUNTING BRACKET AND MOUNTING SURFACE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

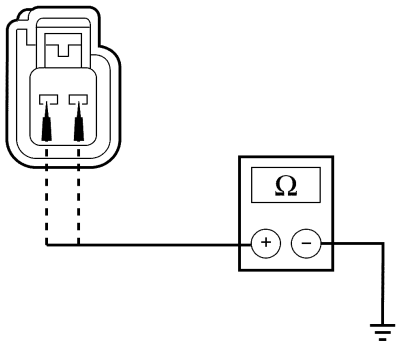
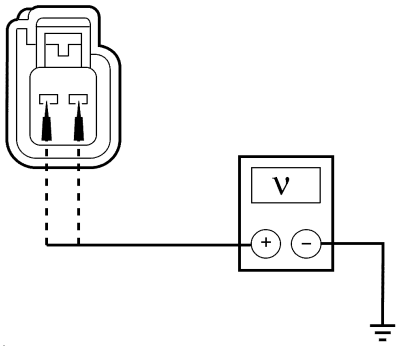
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M12	**INSPECT THE PASSENGER SIDE IMPACT SENSOR MOUNTING, MOUNTING BRACKET AND MOUNTING SURFACE (Continued)**	
	• Inspect the passenger side impact sensor mounting and make sure that the retaining bolt is fully seated and tightened correctly. • Remove the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Visually inspect the passenger side impact sensor, mounting bracket and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the passenger side impact sensor mounting bracket attached to the mounting surface incorrectly or was the passenger side impact sensor bolt not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN bolt or REPAIR the mounting surface as necessary. REINSTALL the passenger side impact sensor. GO to M34. **No** GO to M13.
M13	**INSTALL THE PASSENGER SIDE IMPACT SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Clean and repair the mounting surface as necessary. • Clean the passenger side impact sensor mounting bolt. • Install the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** GO to M14. **No** Fault corrected. GO to M34.
M14	**CHECK THE PASSENGER SIDE IMPACT SENSOR GROUND CIRCUIT 1264 (BN) FOR HIGH RESISTANCE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Side Impact Sensor C3211. • Measure the resistance between passenger side impact sensor C3211-1, circuit 1264 (BN), harness side and the passenger side impact sensor case ground. • **Is the resistance less than 100 ohms?**	**Yes** GO to M16. **No** GO to M15.
M15	**CLEAN THE PASSENGER SIDE IMPACT SENSOR MOUNTING SURFACE AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Remove the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Clean and repair the mounting surface as necessary. • Clean the passenger side impact sensor mounting bolt. • Install the passenger side impact sensor. Refer to Side Impact Sensor in this section. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** GO to M16. **No** Fault corrected. GO to M34.
M16	**CHECK CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Passenger Side Impact Sensor C3211. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

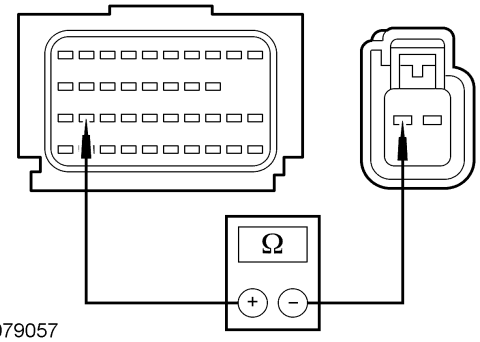
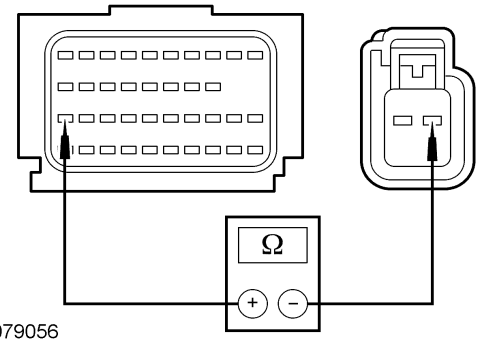
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M16	**CHECK CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR (Continued)**	
	• Measure the resistance between passenger side impact sensor C3211-2, circuit 1263 (WH), harness side and ground; and between passenger side impact sensor C3211-1, circuit 1264 (BN), harness side and ground.  A0058373 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to M17. **No** REPAIR circuit 1263 (WH) or 1264 (BN). GO to M34.
M17	**CHECK CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger side impact sensor C3211-2, circuit 1263 (WH), harness side and ground; and between passenger side impact sensor C3211-1, circuit 1264 (BN), harness side and ground.  A0058374 • **Are the voltages less than 0.2 volt?**	**Yes** GO to M18. **No** REPAIR circuit 1263 (WH) or 1264 (BN). GO to M34.
M18	**CHECK FOR AN OPEN ON CIRCUIT 1263 (WH) BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

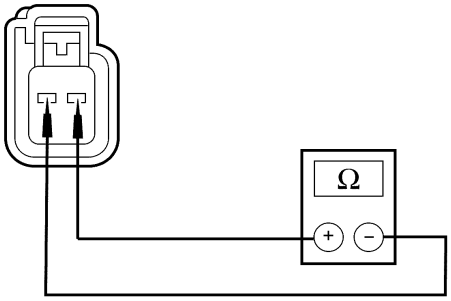
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M18	**CHECK FOR AN OPEN ON CIRCUIT 1263 (WH) BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR (Continued)**	
	• Measure the resistance between RCM C2041b-29, circuit 1263 (WH), harness side and passenger side impact sensor C3211-2, circuit 1263 (WH), harness side.  A0079057 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **M19**. **No** REPAIR circuit 1263 (WH). GO to **M34**.
M19	**CHECK FOR AN OPEN ON CIRCUIT 1264 (BN) BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR**	
	• Measure the resistance between RCM C2041b-30, circuit 1264 (BN), harness side and passenger side impact sensor C3211-1, circuit 1264 (BN), harness side.  A0079056 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **M20**. **No** REPAIR circuit 1264 (BN). GO to **M34**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

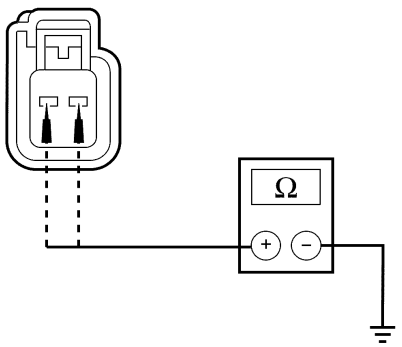
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M20	**CHECK CIRCUIT 1263 (WH) FOR A SHORT TO CIRCUIT 1264 (BN) BETWEEN THE RCM AND THE PASSENGER SIDE IMPACT SENSOR**	
	• Measure the resistance between passenger side impact sensor C3211-2, circuit 1263 (WH) and C3211-1, circuit 1264 (BN), harness side.  A0058377 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to M21. **No** REPAIR circuits 1263 (WH) and 1264 (BN). GO to M34.
M21	**CHECK THE PASSENGER SIDE IMPACT SENSOR**	
	• Install a known good passenger side impact sensor. Refer to Side Impact Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Were any fault PIDs against the passenger side impact sensor?**	**Yes** GO to M32. **No** Fault corrected. GO to M34.
M22	**INSPECT THE FRONT IMPACT SEVERITY SENSOR MOUNTING, MOUNTING BRACKET AND MOUNTING SURFACE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Inspect the front impact severity sensor mounting and make sure that the retaining nut is fully seated and tightened correctly. • Remove the front impact severity sensor. Refer to Front Impact Severity Sensor in this section. • Visually inspect the front impact severity sensor, mounting bracket and mounting surface for damage, corrosion or dirt. • **Was a significant amount of corrosion or dirt found, the front impact severity sensor mounting bracket attached to the mounting surface incorrectly or was the front impact severity sensor nut not fully seated and tightened correctly?**	**Yes** CLEAN, TIGHTEN nut or REPAIR the mounting surface as necessary. REINSTALL the front impact severity sensor. GO to M34. **No** GO to M23.
M23	**INSTALL THE FRONT IMPACT SEVERITY SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Clean and repair the mounting surface as necessary. • Clean the front impact severity sensor retaining nut. • Install the front impact severity sensor. Refer to Front Impact Severity Sensor in this section. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

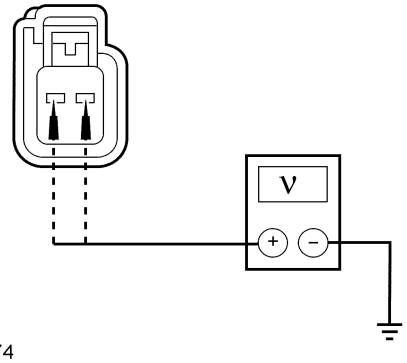
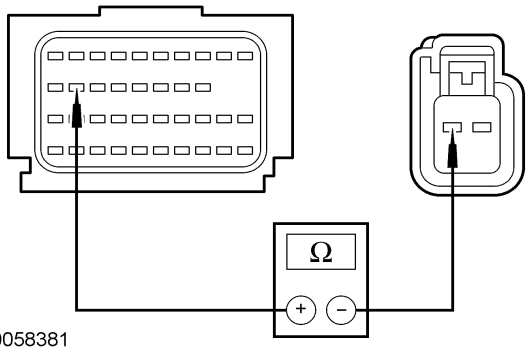
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M23	**INSTALL THE FRONT IMPACT SEVERITY SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST (Continued)**	
	• Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** GO to M24. **No** Fault corrected. GO to M34.
M24	**CHECK THE FRONT IMPACT SEVERITY SENSOR GROUND CIRCUIT 618 (VT/LG) FOR HIGH RESISTANCE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Front Impact Severity Sensor C177. • Measure the resistance between front impact severity sensor C177-1, circuit 618 (VT/LG), harness side and the front impact severity sensor case ground. • **Is the resistance less than 100 ohms?**	**Yes** GO to M26. **No** GO to M25.
M25	**CLEAN THE FRONT IMPACT SEVERITY SENSOR MOUNTING SURFACE AND CARRY OUT THE ON-DEMAND SELF TEST**	
	• Remove the front impact severity sensor. Refer to Front Impact Severity Sensor in this section. • Clean and repair the mounting surface as necessary. • Clean the front impact severity sensor retaining nut. • Install the front impact severity sensor. Refer to Front Impact Severity Sensor in this section. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** GO to M26. **No** Fault corrected. GO to M34.
M26	**CHECK CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO GROUND BETWEEN THE RCM AND THE FRONT IMPACT SEVERITY SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Front Impact Severity Sensor C177. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between front impact severity sensor C177-2, circuit 617 (PK/OG), harness side and ground; and between front impact severity sensor C177-1, circuit 618 (VT/LG), harness side and ground.  A0058373 • **Are the resistances greater than 1,000,000 ohms?**	**Yes** GO to M27. **No** REPAIR circuit 617 (PK/OG) or 618 (VT/LG). GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

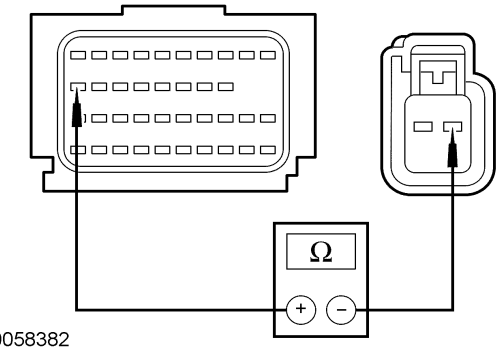
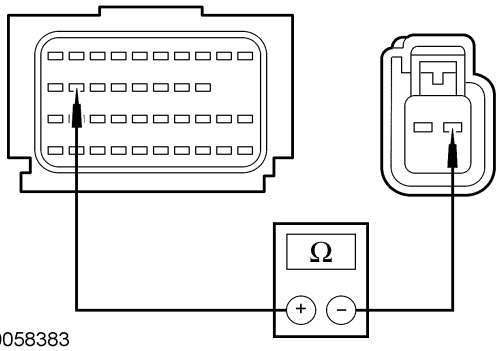
PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M27	**CHECK CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND THE FRONT IMPACT SEVERITY SENSOR**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between front impact severity sensor C177-2, circuit 617 (PK/OG), harness side and ground; and between front impact severity sensor C177-1, circuit 618 (VT/LG), harness side and ground.  A0058374 • **Are the voltages less than 0.2 volt?**	**Yes** GO to M28. **No** REPAIR circuit 617 (PK/OG) or 618 (VT/LG). GO to M34.
M28	**CHECK FOR AN OPEN ON CIRCUIT 617 (PK/OG) BETWEEN THE RCM AND THE FRONT IMPACT SEVERITY SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-19, circuit 617 (PK/OG), harness side and front impact severity sensor C177-2, circuit 617 (PK/OG), harness side.  A0058381 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M29. **No** REPAIR circuit 617 (PK/OG). GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M29	**CHECK FOR AN OPEN ON CIRCUIT 618 (VT/LG) BETWEEN THE RCM AND THE FRONT IMPACT SEVERITY SENSOR**	
	• Measure the resistance between RCM C2041b-20, circuit 618 (VT/LG), harness side and front impact severity sensor C177-1, circuit 618 (VT/LG), harness side.  A0058382 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to M30. **No** REPAIR circuit 618 (VT/LG). GO to M34.
M30	**CHECK CIRCUIT 617 (PK/OG) FOR A SHORT TO CIRCUIT 618 (VT/LG) BETWEEN THE RCM AND THE FRONT IMPACT SEVERITY SENSOR**	
	• Measure the resistance between RCM C2041b-19, circuit 617 (PK/OG), harness side and front impact severity sensor C177-1, circuit 618 (VT/LG), harness side.  A0058383 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to M31. **No** REPAIR circuits 617 (PK/OG) and 618 (VT/LG). GO to M34.
M31	**CHECK THE FRONT IMPACT SEVERITY SENSOR**	
	• Install a known good front impact severity sensor. Refer to Front Impact Severity Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Were any fault PIDs against the front impact severity sensor?**	**Yes** GO to M32. **No** Fault corrected. GO to M34.
M32	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M32	**CONFIRM THE RCM FAULT (Continued)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install the original impact sensor. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to M34. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to M34.
M33	**CHECK FOR AN INTERMITTENT FAULT**	
	• Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2296 Fault PIDs. • **Was on-demand DTC B2296 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. CHECK for causes of the intermittent fault at or near the affected impact sensor connector. REPAIR any intermittent concerns found. If an intermittent concern **was** found and repaired, GO to M34. If an intermittent concern **was not** found and repaired, USE the fault PIDs recorded and GO to the appropriate pinpoint test step. For driver side impact sensor with a mounting/communications fault, GO to M2. For driver side impact sensor with a internal fault, INSTALL a new driver side impact sensor. GO to M34. For passenger side impact sensor with a mounting/communications fault, GO to M12. For passenger side impact sensor with a internal fault, INSTALL a new passenger side impact sensor. GO to M34. For front severity crash impact sensor with a mounting/communications fault, GO to M22. For front severity crash impact sensor with an internal fault, INSTALL a new front severity crash impact sensor. GO to M34. **No** VISUALLY INSPECT the affected impact sensor, mounting brackets and mounting surface for damage, corrosion or dirt. INSPECT the wiring, terminals and connectors for damage, corrosion or dirt. CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to M34.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST M: LFC 42, 43 AND 44/DTC B2296 — RESTRAINT SYSTEM — IMPACT SENSOR STATUS (Continued)

Test Step		Result / Action to Take
M34	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step M1. • **Were any continuous memory DTCs retrieved during Step M1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test N: LFC 51/DTC B2434 — Driver Safety Belt Buckle Switch Circuit Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the SRS, the driver and passenger safety belt buckles are equipped with Hall-effect switches. The safety belt switches indicate to the restraints control module (RCM) whether the safety belts are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks the driver safety belt buckle switch circuits for faults. If the RCM detects a short to ground fault, it will store diagnostic trouble code (DTC) B2434 in memory and flash lamp fault code (LFC) 51 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

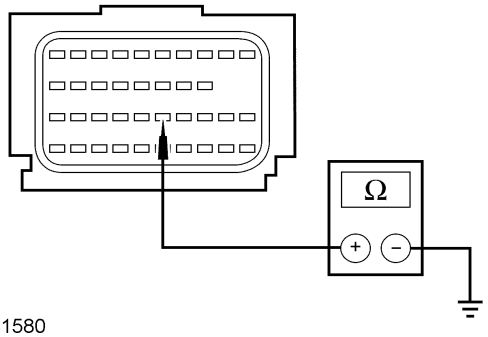
A driver safety belt buckle switch open circuit fault can be caused by:

- wiring, terminals or connectors.
- a faulty driver safety belt buckle switch.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST N: LFC 51/DTC B2434 — DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
N1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2434 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to N2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to N5.
N2	**CHECK FOR A SHORT TO GROUND ON CIRCUIT 85 (BN/LB) BETWEEN THE RCM AND THE DRIVER SAFETY BELT BUCKLE SWITCH**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Driver Safety Belt Buckle Switch C323. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-25, circuit 85 (BN/LB), harness side and ground.  A0041580 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to N3. **No** REPAIR circuit 85 (BN/LB). GO to N6.
N3	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST N: LFC 51/DTC B2434 — DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
N3	**CHECK THE SAFETY BELT BUCKLE SWITCH (Continued)**	
	• Install a known good driver safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2434 retrieved?**	**Yes** GO to N4. **No** Fault corrected. GO to N6.
N4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2434 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to N6. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to N6.
N5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2434 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to N2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to N6.
N6	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step N1. • **Were any continuous memory DTCs retrieved during Step N1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test O: LFC 51/DTC B2435 — Driver Safety Belt Buckle Switch Resistance Out of Range

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the SRS, the driver and passenger safety belt buckles are equipped with Hall-effect switches. The safety belt switches indicate to the restraints control module (RCM) whether the safety belts are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks the driver safety belt buckle switch circuits for faults. If the RCM detects a current out of range fault, it will store diagnostic trouble code (DTC) B2435 in memory and flash lamp fault code (LFC) 51 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A driver safety belt buckle switch current out of range fault can be caused by:

- wiring, terminals or connectors.
- a faulty driver safety belt buckle switch.
- a faulted RCM.

PINPOINT TEST O: LFC 51/DTC B2435 — DRIVER SAFETY BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
O1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	⚠ WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **⚠ WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **⚠ WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2435 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **O2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **O4**.
O2	**CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install a known good driver safety belt buckle switch. Refer to Section 501-20A.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST O: LFC 51/DTC B2435 — DRIVER SAFETY BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE (Continued)

Test Step		Result / Action to Take
O2	**CHECK THE DRIVER SAFETY BELT BUCKLE SWITCH (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2435 retrieved?**	**Yes** GO to O3. **No** Fault corrected. GO to O5.
O3	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2435 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to O5. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to O5.
O4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2435 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to O2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to O5.
O5	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step O1. • **Were any continuous memory DTCs retrieved during Step O1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test P: LFC 52/DTC B2438 — Passenger Safety Belt Buckle Switch Circuit Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the SRS, the driver and passenger safety belt buckles are equipped with Hall-effect switches. The safety belt switches indicate to the restraints control module (RCM) whether the safety belts are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks the passenger safety belt buckle switch circuits for faults. If the RCM detects a short to ground fault, it will store diagnostic trouble code (DTC) B2438 in memory and flash lamp fault code (LFC) 52 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A driver safety belt buckle switch open circuit fault can be caused by:

- wiring, terminals or connectors.
- a faulty passenger safety belt buckle switch.
- a faulted RCM.

PINPOINT TEST P: LFC 52/DTC B2438 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND

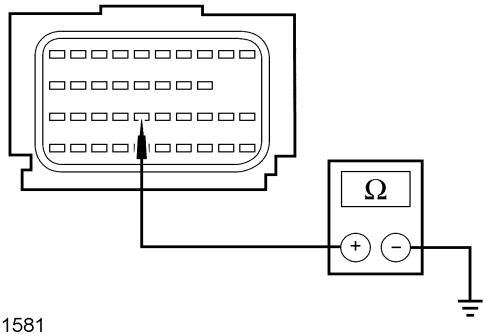
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
P1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2438 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to P2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to P5.
P2	**CHECK FOR A SHORT TO GROUND ON CIRCUIT 1514 (RD/BK) BETWEEN THE RCM AND THE PASSENGER SAFETY BELT BUCKLE SWITCH**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: Safety Belt Buckle Switch C3066. • Disconnect: RCM C2041a and C2041b.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST P: LFC 52/DTC B2438 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
P2	**CHECK FOR A SHORT TO GROUND ON CIRCUIT 1514 (RD/BK) BETWEEN THE RCM AND THE PASSENGER SAFETY BELT BUCKLE SWITCH (Continued)**	
	• Measure the resistance between RCM C2041b-26, circuit 1514 (RD/BK), harness side and ground.  A0041581 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to P3. **No** REPAIR circuit 1514 (RD/BK). GO to P6.
P3	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good passenger safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2438 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to P4. **No** Fault corrected. GO to P6.
P4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2438 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to P6. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to P6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST P: LFC 52/DTC B2438 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
P5	CHECK FOR AN INTERMITTENT FAULT	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2438 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to P2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to P6.
P6	CHECK FOR ADDITIONAL DTCs	
	• Refer to the continuous memory DTCs recorded during Step P1. • **Were any continuous memory DTCs retrieved during Step P1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test Q: LFC 52/DTC B2439 — Passenger Safety Belt Buckle Switch Resistance Out of Range

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the SRS, the driver and passenger safety belt buckles are equipped with Hall-effect switches. The safety belt switches indicate to the restraints control module (RCM) whether the safety belts are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks the passenger safety belt buckle switch circuits for faults. If the RCM detects a current out of range fault, it will store diagnostic trouble code (DTC) B2439 in memory and flash lamp fault code (LFC) 52 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A passenger safety belt buckle switch current out of range fault can be caused by:

- wiring, terminals or connectors.
- a faulty passenger safety belt buckle switch.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Q: LFC 52/DTC B2439 — PASSENGER SAFETY BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
Q1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2439 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to Q2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to Q4.
Q2	**CHECK THE PASSENGER SAFETY BELT BUCKLE SWITCH**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install a known good passenger safety belt buckle. Refer to Section 501-20A. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2439 retrieved?**	**Yes** GO to Q3. **No** Fault corrected. GO to Q5.
Q3	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2439 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to Q5. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to Q5.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Q: LFC 52/DTC B2439 — PASSENGER SAFETY BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE (Continued)

Test Step		Result / Action to Take
Q4	CHECK FOR AN INTERMITTENT FAULT	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2439 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to Q2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to Q5.
Q5	CHECK FOR ADDITIONAL DTCs	
	• Refer to the continuous memory DTCs recorded during Step Q1. • **Were any continuous memory DTCs retrieved during Step Q1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test R: LFC 51/DTC B2691 — Driver Safety Belt Buckle Switch Circuit Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the SRS, the driver and passenger safety belt buckles are equipped with Hall-effect switches. The safety belt switches indicate to the restraints control module (RCM) whether the safety belts are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks the driver safety belt buckle switch circuits for faults. If the RCM detects an open circuit or short to voltage fault, it will store diagnostic trouble code (DTC) B2691 in memory and flash lamp fault code (LFC) 51 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

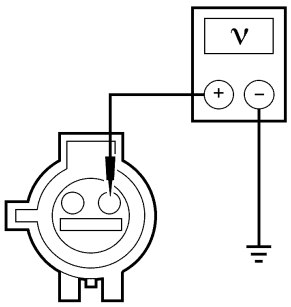
A driver safety belt buckle switch open circuit or short to voltage fault can be caused by:

- wiring, terminals or connectors.
- a faulty driver safety belt buckle switch.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: LFC 51/DTC B2691 — DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT

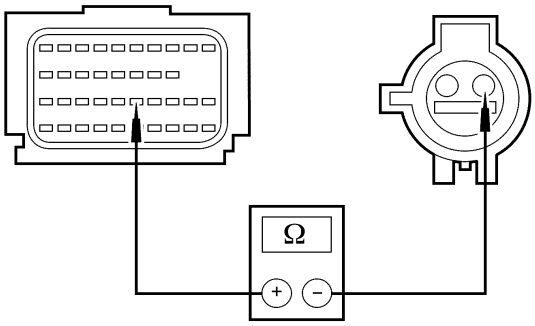
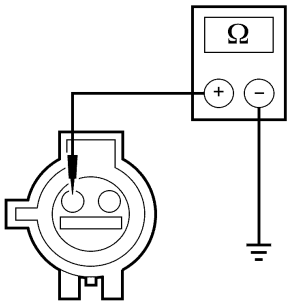
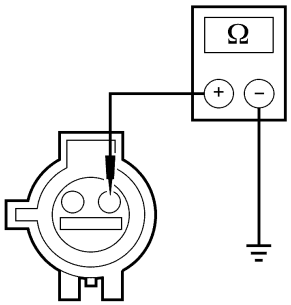
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
R1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2691 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to R2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to R8.
R2	**CHECK FOR A SHORT TO VOLTAGE ON CIRCUIT 85 (BN/LB)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect driver seat side air bag C367. — Connect Restraint System Diagnostic Tool 418-133 to driver seat side air bag C367. • Disconnect: RCM C2041a and C2041b. • Disconnect: Driver Safety Belt Buckle Switch C323. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side and ground.  N0010351 • **Is the voltage less than 0.2 volt?**	**Yes** GO to R3. **No** REPAIR circuit 85 (BN/LB). GO to R9.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: LFC 51/DTC B2691 — DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
R3	**CHECK FOR AN OPEN ON CIRCUIT 85 (BN/LB)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-25, circuit 85 (BN/LB), harness side and driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side.  N0010349 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to R4. **No** REPAIR circuit 85 (BN/LB). GO to R9.
R4	**CHECK FOR AN OPEN GROUND CIRCUIT**	
	• Measure the resistance between driver safety belt buckle switch C323-1, circuit 1203 (BK/LB), harness side and ground.  N0010409 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to R5. **No** REPAIR circuit 1203 (BK/LB). GO to R9.
R5	**CHECK CIRCUIT 85 (BN/LB) FOR A SHORT TO GROUND**	
	• Measure the resistance between driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side and ground.  N0010350 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to R6. **No** REPAIR circuit 85 (BN/LB). GO to R9.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST R: LFC 51/DTC B2691 — DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
R6	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connectors are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good driver safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2691 retrieved?**	**Yes** GO to R7. **No** Fault corrected. GO to R9.
R7	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2691 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to R9. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to R9.
R8	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2691 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to R2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to R9.
R9	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step R1. • **Were any continuous memory DTCs retrieved during Step R1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test S: LFC 52/DTC B2692 — Passenger Safety Belt Buckle Switch Circuit Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the SRS, the driver and passenger safety belt buckles are equipped with Hall-effect switches. The safety belt switches indicate to the restraints control module (RCM) whether the safety belts are buckled or unbuckled. Refer to Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) in this section.

The RCM checks the passenger safety belt buckle switch circuits for faults. If the RCM detects an open circuit or short to voltage fault, it will store diagnostic trouble code (DTC) B2692 in memory and flash lamp fault code (LFC) 52 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A passenger safety belt buckle switch open circuit or short to voltage fault can be caused by:

- wiring, terminals or connectors.
- a faulty passenger safety belt buckle switch.
- a faulted RCM.

PINPOINT TEST S: LFC 52/DTC B2692 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT

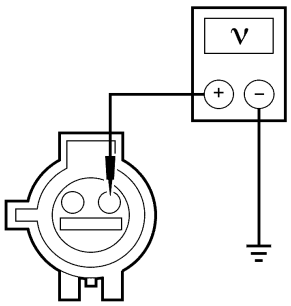
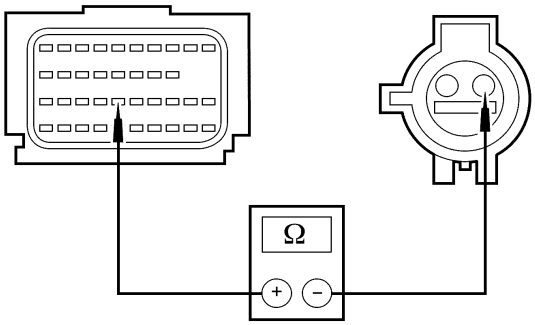
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
S1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2692 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **S2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **S8**.
S2	**CHECK FOR A SHORT TO VOLTAGE ON CIRCUIT 1514 (RD/BK)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Disconnect: RCM C2041a and C2041b. • Disconnect: Passenger Safety Belt Buckle Switch C337.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

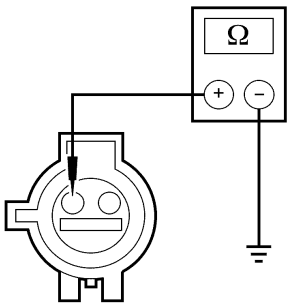
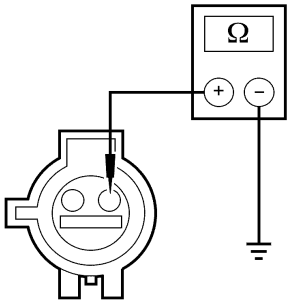
PINPOINT TEST S: LFC 52/DTC B2692 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
S2	**CHECK FOR A SHORT TO VOLTAGE ON CIRCUIT 1514 (RD/BK) (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between passenger safety belt buckle switch C337-2, circuit 1514 (RD/BK), harness side and ground.  N0010351 • **Is the voltage less than 0.2 volt?**	**Yes** GO to **S3**. **No** REPAIR circuit 1514 (RD/BK). GO to **S9**.
S3	**CHECK FOR AN OPEN ON CIRCUIT 1514 (RD/BK)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between RCM C2041b-26, circuit 1514 (RD/BK), harness side and passenger safety belt buckle switch C3066-2, circuit 1514 (RD/BK), harness side.  N0010348 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **S4**. **No** REPAIR circuit 1514 (RD/BK). GO to **S9**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST S: LFC 52/DTC B2692 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
S4	**CHECK FOR AN OPEN GROUND CIRCUIT 1203 (BK/LB)**	
	• Measure the resistance between passenger safety belt buckle switch C3066-1, circuit 1203 (BK/LB), harness side and ground.  N0010409 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **S5**. **No** REPAIR circuit 1203 (BK/LB). GO to **S9**.
S5	**CHECK FOR A SHORT TO GROUND ON CIRCUIT 1514 (RD/BK)**	
	• Measure the resistance between passenger safety belt buckle switch C3066-2, circuit 1514 (RD/BK), harness side and ground.  N0010350 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to **S6**. **No** REPAIR circuit 1203 (BK/LB). GO to **S9**.
S6	**CHECK THE SAFETY BELT BUCKLE SWITCH**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connectors are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good passenger safety belt buckle. Refer to Section 501-20A. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2692 retrieved?**	**Yes** GO to **S7**. **No** Fault corrected. GO to **S9**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST S: LFC 52/DTC B2692 — PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
S7	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original safety belt buckle. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2692 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to S9. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to S9.
S8	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC B2692 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to S2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to S9.
S9	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step S1. • **Were any continuous memory DTCs retrieved during Step S1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test T: LFC 16/DTC B2909 — Belt Tension Sensor Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

NOTE: LFC 16 is shared between DTC B2290 and DTC B2909.

Normal Operation

The belt tension sensor is part of the occupant classification sensor (OCS) system. The OCS system interprets a variable voltage signal provided by the safety belt tension sensor to identify the possible presence of a child safety seat in the front passenger seat. The voltage output of the belt tension sensor is proportional to the amount of tension applied to the sensor by the belt, no tension-low voltage (approximately 0.95 volt), high tension-high voltage, (approximately 3.8 volts).

The OCS system checks the belt tension sensor circuits for faults. If the OCS detects one of the following faults on any of the belt tension sensor circuits, it will report the failure to the restraints control module (RCM). The RCM will store diagnostic trouble code (DTC) B2909 in memory and flash either lamp fault code (LFC) 16 (or higher priority code if one exists) on the air bag indicator.

The OCS system components (seat cushion foam pad, bladder with pressure sensor and electronic control unit) are calibrated to each other and are serviced as an assembly. The OCS system components are not to be installed separately with the exception of the belt tension sensor. If a new OCS system, OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor and electronic control unit) must be installed as an assembly.

Possible Causes

A belt tension sensor circuit fault can be caused by one of the following:

- wiring, terminals or connectors.
- a faulted belt tension sensor.
- a faulted OCS ECU.

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT

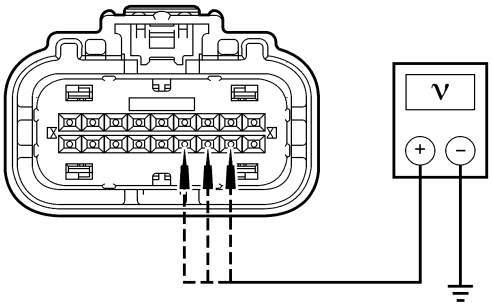
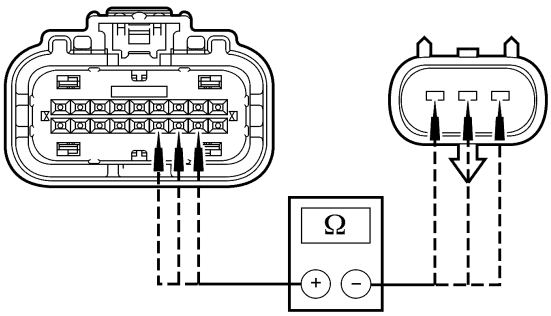
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
T1	**CHECK FOR CONTINUOUS OR ON-DEMAND SELF TEST DTCs**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2909 Fault PIDs. • **Was on-demand DTC B2909 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For belt tension sensor with a circuit fault, GO to **T2**. For belt tension sensor with a short to ground fault, GO to **T4**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **T9**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

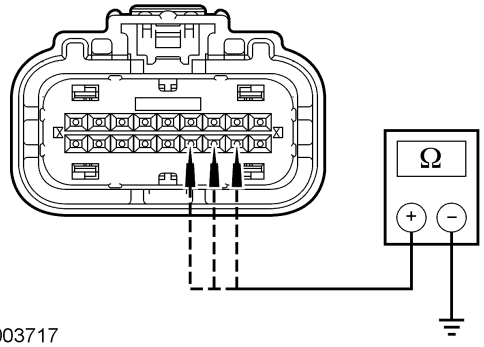
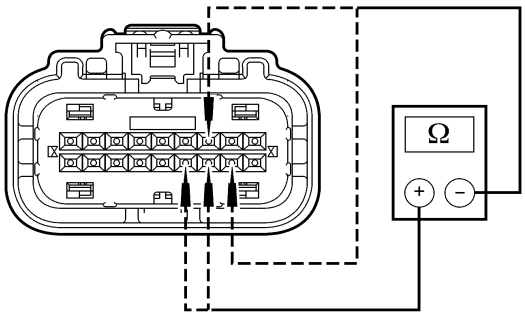
PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

Test Step		Result / Action to Take
T2	**CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Disconnect: Belt Tension Sensor C3238. • Disconnect: OCS ECU C3043. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between OCS ECU C3043-11, circuit 2088 (TN/RD), harness side and ground; between OCS ECU C3043-13, circuit 2090 (DB/OG), harness side and ground; and between OCS ECU C3043-12, circuit 2089 (OG/BK), harness side and ground.  N0003715 • **Are the voltages less than 0.2 volt?**	**Yes** GO to T3. **No** REPAIR circuit 2088 (TN/RD), circuit 2089 (OG/BK) or circuit 2090 (DB/OG). GO to T10.
T3	**CHECK THE BELT TENSION SENSOR CIRCUITS FOR AN OPEN**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between OCS C3043-11, circuit 2088 (TN/RD), harness side and belt tension sensor C3238-1, circuit 2088 (TN/RD), harness side; between OCS C3043-13, circuit 2090 (DB/OG), harness side and belt tension sensor C3238-2, circuit 2090 (DB/OG), harness side; and between OCS C3043-12, circuit 2089 (OG/BK), harness side and belt tension sensor C3238-3, circuit 2089 (OG/BK), harness side.  N0011641 • **Are the resistances less than 0.5 ohm?**	**Yes** GO to T5. **No** REPAIR circuit 2088 (TN/RD), circuit 2089 (OG/BK) or circuit 2090 (DB/OG). GO to T10.

(Continued)

DIAGNOSIS AND TESTING (Continued)

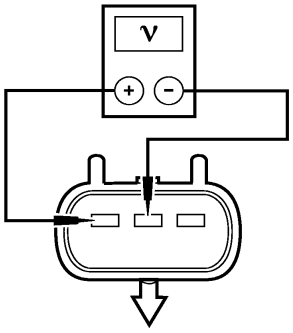
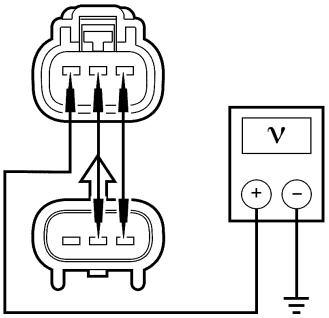
PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

Test Step		Result / Action to Take
T4	**CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO GROUND**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect passenger seat side air bag C337. — Connect Restraint System Diagnostic Tool 418-133 to passenger seat side air bag C337. • Disconnect: OCS ECU C3043. • Measure the resistance between OCS ECU C3043-11, circuit 2088 (TN/RD), harness side and ground; between OCS ECU C3043-12, circuit 2089 (OG/BK), harness side and ground; and between OCS ECU C3043-13, circuit 2090 (DB/OG), harness side and ground.  N0003717 • **Are the resistances greater than 10,0000 ohms?**	**Yes** GO to T5. **No** REPAIR circuit 2088 (TN/RD), circuit 2089 (OG/BK) or circuit 2090 (DB/OG). GO to T10.
T5	**CHECK CIRCUITS 2088 (TN/RD), 2089 (OG/BK) AND 2090 (DB/OG) FOR A SHORT TOGETHER**	
	• Measure the resistance between OCS ECU: — C3043-11, circuit 2088 (TN/RD), harness side and C3043-12, circuit 2089 (OG/BK), harness side. — C3043-11, circuit 2088 (TN/RD), harness side and C3043-13, circuit 2090 (DB/OG), harness side. — C3043-12, circuit 2089 (OG/BK), harness side and C3043-13, circuit 2090 (DB/OG), harness side.  N0003719 • **Are the resistances greater than 10,0000 ohms?**	**Yes** GO to T6. **No** REPAIR circuit 2088 (TN/RD), circuit 2089 (OG/BK) or circuit 2090 (DB/OG). GO to T10.
T6	**CHECK THE OCS ECU OUTPUT**	
	• Connect: OCS ECU C3043. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

Test Step		Result / Action to Take
T6	**CHECK THE OCS ECU OUTPUT (Continued)**	
	• Measure the voltage between belt tension sensor C3238-1, circuit 2088 (TN/RD), harness side and C3238-2, circuit 2090 (DB/OG), harness side.  A0083314 • **Is the voltage approximately 5 volts?**	**Yes** GO to T7. **No** INSTALL a new OCS service kit. REFER to Occupant Classification Sensor in this section. GO to T10.
T7	**CHECK THE BELT TENSION SENSOR VOLTAGE OUTPUT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect a fused jumper lead between belt tension sensor C3238-1, circuit 2088 (TN/RD), harness side and pin 1, circuit 2088 (TN/RD), component side. • Connect a fused jumper lead between belt tension sensor C3238-2, circuit 2090 (DB/OG), harness side and pin 2, circuit 2090 (DB/OG), component side. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position. • Measure the voltage between belt tension sensor C3238-3, circuit 2089 (OG/BK), component side and ground as you vary the tension of the belt tension sensor.  A0080136 • **Does the voltage vary from approximately 0.95 volt with no tension applied to the sensor, to approximately 3.8 volts with full tension applied to the sensor?**	**Yes** GO to T8. **No** INSTALL a new belt tension sensor. REFER to Front Safety Belt Retractor in Section 501-20A. GO to T10.
T8	**CONFIRM THE BELT TENSION SENSOR FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST T: LFC 16/DTC B2909 — BELT TENSION SENSOR FAULT (Continued)

Test Step		Result / Action to Take
T8	**CONFIRM THE BELT TENSION SENSOR FAULT (Continued)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Connect: Belt Tension Sensor C3238. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2909 Fault PIDs. • **Was on-demand DTC B2909 retrieved?**	**Yes** INSTALL a new OCS service kit. REFER to Occupant Classification Sensor in this section. GO to **T10**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **T10**.
T9	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • Enter the following diagnostic mode on the scan tool: View and Record DTC B2909 Fault PIDs. • **Was on-demand DTC B2909 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. Using the fault PIDs recorded, GO to the appropriate pinpoint test step. For belt tension sensor with a circuit fault, GO to **T2**. For belt tension sensor with a short to ground fault, GO to **T4**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **T10**.
T10	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step T1. • **Were any continuous memory DTCs retrieved during Step T1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test U: LFC 15/DTC C1414 — Incorrect Module Design Level

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

DIAGNOSIS AND TESTING (Continued)

Normal Operation

The restraints control module (RCM) monitors the communication condition and circuits of the occupant classification sensor (OCS) for an embedded vehicle ID. If the RCM detects an unexpected condition or code from the OCS system, it will store diagnostic trouble code (DTC) C1414 in memory and flash lamp fault code (LFC) 15 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

An incorrect vehicle identification code can be caused by:

- incorrect RCM for vehicle.
- incorrect OCS system for vehicle.

PINPOINT TEST U: LFC 15/DTC C1414 — INCORRECT MODULE DESIGN LEVEL

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
U1	**CHECK FOR A HARD OR INTERMITTENT DTC**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to U2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to U5.
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1414 retrieved?**	
U2	**CHECK THE OCS PART NUMBER**	**Yes** GO to U3. **No** INSTALL a new OCS with the correct part number. REFER to Occupant Classification Sensor in this section. GO to U6.
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Check the part number of the OCS against the part number listed in the master parts catalog. • **Did the part number on the OCS match the part number listed in the master parts catalog?**	
U3	**CHECK THE RCM PART NUMBER**	**Yes** GO to U4. **No** INSTALL a new RCM with the correct part number. REFER to Restraints Control Module (RCM) in this section. GO to U6.
	• Check the part number on the RCM against the part number listed in the master parts catalog. • **Did the part number on the RCM match the part number listed in the master parts catalog?**	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST U: LFC 15/DTC C1414 — INCORRECT MODULE DESIGN LEVEL (Continued)

Test Step		Result / Action to Take
U4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1414 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **U6**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **U6**.
U5	**CHECK FOR INTERMITTENT FAULTS**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1414 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **U2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **U6**.
U6	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step U1. • **Were any continuous memory DTCs retrieved during Step U1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test V: LFC 49/DTC C1947 — Seat Track Position Switch Circuit Short to Ground

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The seat track position sensor informs the restraints control module (RCM) of the driver seat position.

The RCM monitors the driver seat track position sensor circuits. If the RCM detects a short to ground, it will store diagnostic trouble code (DTC) C1947 in memory and flash lamp fault code (LFC) 49 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

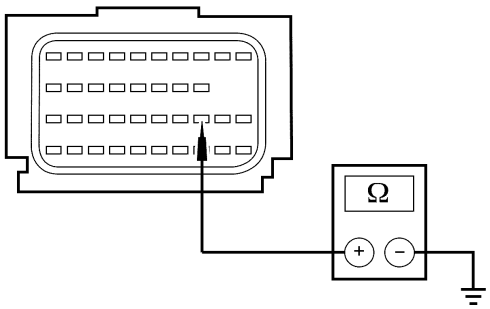
A driver seat track position sensor short to ground fault can be caused by:

- wiring, terminals or connectors.
- a faulty driver seat track position sensor.
- a faulted RCM.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST V: LFC 49/DTC C1947 — SEAT TRACK POSITION SWITCH CIRCUIT SHORT TO GROUND

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
V1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1947 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to V2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to V5.
V2	**CHECK FOR A SHORT TO GROUND ON CIRCUITS 1520 (LG) AND 1203 (BK/LG) BETWEEN THE RCM AND THE DRIVER SEAT**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect driver seat side air bag C367. — Connect Restraint System Diagnostic Tool 418-133 to driver seat side air bag C367. • Disconnect: Driver Seat Track Position Sensor C356. • Disconnect: RCM C2041a and C2041b. • Measure the resistance between RCM C2041b-23, circuit 1520 (LG), harness side and ground.  A0074754 • **Is the resistance greater than 1,000,000 ohms?**	**Yes** GO to V3. **No** REPAIR circuit 1520 (LG). GO to V6.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST V: LFC 49/DTC C1947 — SEAT TRACK POSITION SWITCH CIRCUIT SHORT TO GROUND (Continued)

Test Step		Result / Action to Take
V3	**CHECK THE SEAT TRACK POSITION SENSOR**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Install a known good seat track position sensor. Refer to Seat Position Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1947 retrieved?**	**Yes** GO to V4. **No** Fault corrected. GO to V6.
V4	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original seat track position sensor. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1947 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to V6. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to V6.
V5	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1947 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to V2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to V6.
V6	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step V1. • **Were any continuous memory DTCs retrieved during Step V1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test W: LFC 49/DTC C1948 — Seat Track Position Switch Circuit Resistance Out of Range

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

NOTE: Due to the seat track position sensor being a Hall-effect type sensor, this pinpoint test will be diagnosing a current out of range fault instead of the current DTC definition for a resistance out of range fault.

Normal Operation

The seat track position sensor informs the restraints control module (RCM) of the driver seat position.

The RCM monitors the driver seat track position sensor circuits. If the RCM detects a current out of range condition, it will store diagnostic trouble code (DTC) C1948 in memory and flash lamp fault code (LFC) 49 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A seat track position sensor current out of range fault can be caused by:

- a faulty seat track position sensor.
- RCM is faulted.

PINPOINT TEST W: LFC 49/DTC C1948 — SEAT TRACK POSITION SWITCH CIRCUIT RESISTANCE OUT OF RANGE

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
W1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	⚠ WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **⚠ WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **⚠ WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1948 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to W2. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to W4.
W2	**CHECK THE SEAT TRACK POSITION SENSOR**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Install a known good seat track position sensor. Refer to Seat Position Sensor in this section.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST W: LFC 49/DTC C1948 — SEAT TRACK POSITION SWITCH CIRCUIT RESISTANCE OUT OF RANGE (Continued)

Test Step		Result / Action to Take
W2	**CHECK THE SEAT TRACK POSITION SENSOR (Continued)**	
	• Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1948 retrieved?**	**Yes** GO to W3. **No** Fault corrected. GO to W5.
W3	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original seat track position sensor. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1948 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to W5. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to W5.
W4	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1948 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to W2. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to W5.
W5	**CHECK FOR ADDITIONAL DTCs**	
	• Refer to the continuous memory DTCs recorded during Step W1. • **Were any continuous memory DTCs retrieved during Step W1?**	**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test X: LFC 49/DTC C1981 — Seat Track Position Switch Circuit Fault

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The seat track position sensor informs the restraints control module (RCM) of the driver's seat position.

DIAGNOSIS AND TESTING (Continued)

The RCM monitors the driver seat track position sensor circuits. If the RCM detects an open circuit or short to voltage, it will store diagnostic trouble code (DTC) C1981 in memory and flash lamp fault code (LFC) 49 (or higher priority code if one exists) on the air bag indicator.

Possible Causes

A seat track position sensor open circuit or short to voltage fault can be caused by:

- wiring, terminals or connectors.
- a faulted seat track position switch.
- a faulted RCM.

PINPOINT TEST X: LFC 49/DTC C1981 — SEAT TRACK POSITION SWITCH CIRCUIT FAULT

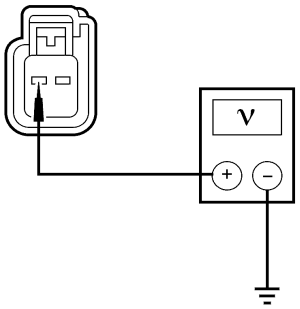
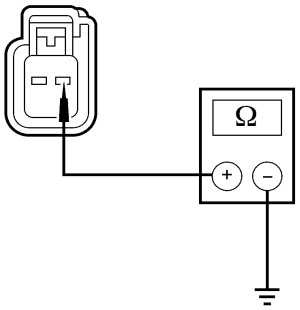
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
X1	**CHECK FOR A HARD OR INTERMITTENT DTC**	
	⚠ WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **⚠ WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **⚠ WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1981 retrieved?**	**Yes** This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **X2**. **No** This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. GO to **X7**.
X2	**CHECK FOR A SHORT TO VOLTAGE ON CIRCUIT 1520 (LG)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • For vehicles equipped with seat side air bags, carry out the following: — Disconnect driver seat side air bag C367. — Connect Restraint System Diagnostic Tool 418-133 to driver seat side air bag C367. • Disconnect: Driver Seat Track Position Sensor C356. • Disconnect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

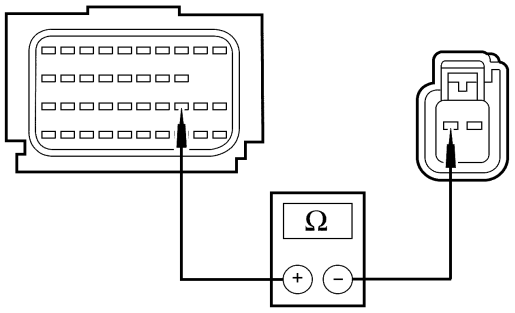
PINPOINT TEST X: LFC 49/DTC C1981 — SEAT TRACK POSITION SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
X2	**CHECK FOR A SHORT TO VOLTAGE ON CIRCUIT 1520 (LG) (Continued)**	
	• Measure the voltage between driver seat track position sensor C356-2, circuit 1520 (LG), harness side and ground.  A0088603 • **Is the voltage less than 0.2 volt?**	**Yes** GO to **X3**. **No** REPAIR circuit 1520 (LG). GO to **X8**.
X3	**CHECK FOR AN OPEN ON CIRCUIT 1203 (BK/LB)**	
	• Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Measure the resistance between driver seat track position sensor C356-1, circuit 1203 (BK/LB), harness side and ground.  A0088601 • **Is the resistance less than 5 ohms?**	**Yes** GO to **X4**. **No** REPAIR circuit 1203 (BK/LB). GO to **X8**.
X4	**CHECK FOR AN OPEN ON CIRCUIT 1520 (LG)**	
	• Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST X: LFC 49/DTC C1981 — SEAT TRACK POSITION SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
X4	**CHECK FOR AN OPEN ON CIRCUIT 1520 (LG) (Continued)**	
	• Measure the resistance between RCM C2041b-23, circuit 1520 (LG), harness side and driver seat track position sensor C356-2, circuit 1520 (LG), harness side.  A0048716 • **Is the resistance less than 0.5 ohm?**	**Yes** GO to **X5**. **No** REPAIR circuit 1520 (LG). GO to **X8**.
X5	**CHECK THE SEAT TRACK POSITION SENSOR**	
	• Install a known good seat track position sensor. Refer to Seat Position Sensor in this section. • Connect: RCM C2041a and C2041b. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1981 retrieved?**	**Yes** GO to **X6**. **No** Fault corrected. GO to **X8**.
X6	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure all restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Reinstall the original seat track position sensor. • Repower the system. **Do not** prove out the system at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1981 retrieved?**	**Yes** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. GO to **X8**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **X8**.
X7	**CHECK FOR AN INTERMITTENT FAULT**	
	• Key in OFF position. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Was on-demand DTC C1981 retrieved?**	**Yes** This is a hard fault. The fault condition is now present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. GO to **X2**. **No** CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. ACTIVATE other systems in the same wire harness. REPAIR any intermittent concerns found. GO to **X8**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST X: LFC 49/DTC C1981 — SEAT TRACK POSITION SWITCH CIRCUIT FAULT (Continued)

Test Step		Result / Action to Take
X8	CHECK FOR ADDITIONAL DTCs	
• Refer to the continuous memory DTCs recorded during Step X1. • **Were any continuous memory DTCs retrieved during Step X1?**		**Yes** Do not clear any DTCs until all DTCs have been resolved. GO to the Restraints Control Module (RCM) Diagnostic Trouble Code (DTC) Table in this section for pinpoint test direction. **No** RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

Pinpoint Test Y: No Communication With The Restraints Control Module (RCM)

Refer to Wiring Diagrams Cell 46, Supplemental Restraint System for schematic and connector information.

Normal Operation

The scan tool communicates with the restraints control module (RCM) monitors through the data link connector (DLC) C251 pin 7, 70 (LB/WH).

Possible Causes

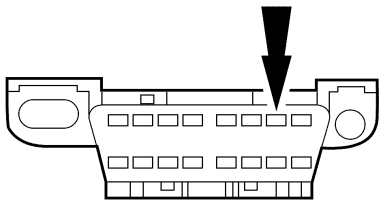
A no communication with the RCM fault can be caused by:

- fuse.
- wiring, terminals or connectors.
- a faulty DLC.
- RCM is faulted.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Y: NO COMMUNICATION WITH THE RESTRAINTS CONTROL MODULE (RCM)

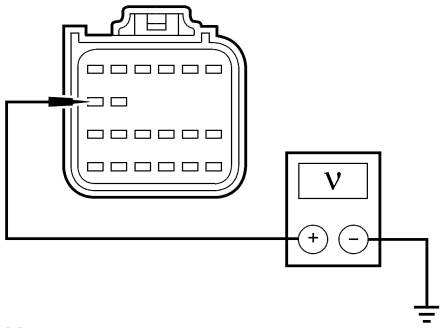
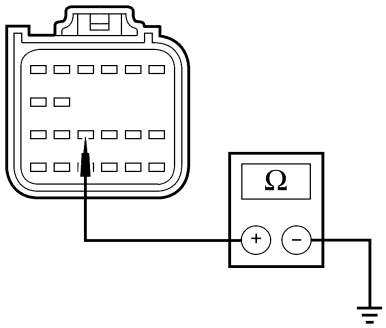
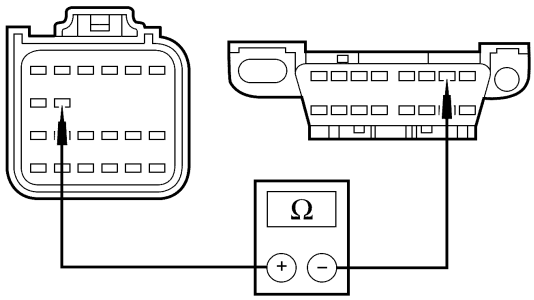
NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough Inspection and Verification before proceeding with the pinpoint test.

Test Step		Result / Action to Take
Y1	**CHECK RCM C2041a PIN 11 FOR DAMAGE**	
	WARNING: Restraint system diagnostic tools are for service only. Tools must be removed prior to operating the vehicle over the road. Failure to remove restraint system diagnostic tools could result in injury and possible violation of vehicle safety standards. **WARNING: Never probe the connectors on the air bag module. Doing so can result in air bag deployment, which can result in personal injury.** **WARNING: The safety belt pretensioner is a pyrotechnic device. Always wear safety glasses when repairing an air bag equipped vehicle and when handling a safety belt buckle pretensioner or safety belt retractor pretensioner. Never probe a pretensioner electrical connector. Doing so could result in pretensioner or air bag deployment and could result in personal injury.** **NOTE:** If a seat equipped with a supplemental restraint system (SRS) component is being serviced, the (SRS) must be depowered. **NOTE:** After diagnosing or repairing an SRS, **the restraint system diagnostic tools must be removed before operating the vehicle over the road.** **NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer. • Key in OFF position. • Depower the system. Refer to Supplemental Restraint System (SRS) Depowering and Repowering in this section. • Disconnect: RCM C2041a and C2041b. • Inspect RCM C2041a, harness side and RCM C2041a, component side, pin 11 for damage. • **Are RCM C2041a and RCM C2041a pin 11 OK?**	**Yes** GO to **Y2**. **No** REPAIR RCM C2041a or RCM C2041a pin 11 as necessary. RETEST the communication to the RCM. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.
Y2	**CHECK DLC C251 PIN 7 FOR DAMAGE**	
	• Inspect DLC C251 and DLC C251 pin 7 for damage.  A0030459 • **Are DLC C251 and DLC C251 pin 7 OK?**	**Yes** GO to **Y3**. **No** REPAIR DLC C251 or DLC C251 pin 7 as necessary. RETEST the communication to the RCM. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.
Y3	**CHECK THE IGNITION CIRCUIT 937 (RD/WH) FOR AN OPEN**	
	• Deactivate the system. Refer to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Y: NO COMMUNICATION WITH THE RESTRAINTS CONTROL MODULE (RCM) (Continued)

Test Step		Result / Action to Take
Y3	**CHECK THE IGNITION CIRCUIT 937 (RD/WH) FOR AN OPEN (Continued)**	
	• Measure the voltage between RCM C2041a-12, circuit 937 (RD/WH), harness side and ground.  A0039638 • **Is the voltage between 9 and 16 volts?**	**Yes** GO to Y4. **No** VERIFY smart junction box (SJB) fuse 17 (10A) is OK. If OK, REPAIR circuit 937 (RD/WH). RETEST the communication to the RCM. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.
Y4	**CHECK THE GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN**	
	• Key in OFF position. • Measure the resistance between RCM C2041a-16, circuit 1203 (BK/LB), harness side and a sheet metal ground near the RCM.  A0039639 • **Is the resistance less than 5 ohms?**	**Yes** GO to Y5. **No** REPAIR circuit 1203 (BK/LB). RETEST the communication to the RCM. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.
Y5	**CHECK CIRCUIT 70 (LB/WH) FOR AN OPEN**	
	• Measure the resistance between RCM C2041a-11, circuit 70 (LB/WH), harness side and DLC C251-7, circuit 70 (LB/WH), harness side.  A0041599 • **Is the resistance less than 5 ohms?**	**Yes** GO to Y6. **No** REPAIR circuit 70 (LB/WH). RETEST the communication to the RCM. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST Y: NO COMMUNICATION WITH THE RESTRAINTS CONTROL MODULE (RCM) (Continued)

Test Step		Result / Action to Take
Y6	**CONFIRM THE RCM FAULT**	
	NOTE: Make sure the safety belt pretensioner restraint system diagnostic tools, sensor electrical connectors and the RCM electrical connector are connected before carrying out the on-demand self test. If not, erroneous DTCs will be recorded. • Connect: RCM C2041a and C2041b. • Enter the following diagnostic mode on the scan tool: On-Demand Self Test/Retrieve and Record Continuous Memory DTCs. • **Did the scan tool communicate with the RCM?**	**Yes** Fault corrected. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs. **No** INSTALL a new RCM. REFER to Restraints Control Module (RCM) in this section. RETEST the communication to the RCM. RECONNECT the system. If previously directed to deactivate the system, REACTIVATE the system. REFER to Supplemental Restraint System (SRS) Deactivation and Reactivation in this section. REPOWER the system. REFER to Supplemental Restraint System (SRS) Depowering and Repowering in this section. PROVE OUT the system. CLEAR all DTCs.