

2008 Ford Mustang

2008 RESTRAINTS Supplemental Restraint System - Mustang

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Supplemental Restraint System - Mustang

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	Nm	lb-in
Driver air bag module bolts	7	62
Front impact severity sensor nut	10	89
Passenger air bag module bolts	11	97
Restraints Control Module (RCM) nuts	12	106
Seat position sensor bolt	6	53
Seat side air bag module and bracket-to-seat backrest bolts	10	89
Seat side air bag module bracket-to-seat side air bag module nuts	6	53
Side impact sensor bolts	11	97

DESCRIPTION AND OPERATION

AIR BAG AND SAFETY BELT PRETENSIONER SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The air bag Supplemental Restraint System (SRS) is designed to provide increased collision protection for front seat occupants, in addition to that provided by the 3-point safety belt system. Safety belt use is necessary to obtain the best occupant protection and to receive the full advantage of the SRS.

The serviceable air bag and safety belt pretensioner SRS components are shown in the following illustrations.

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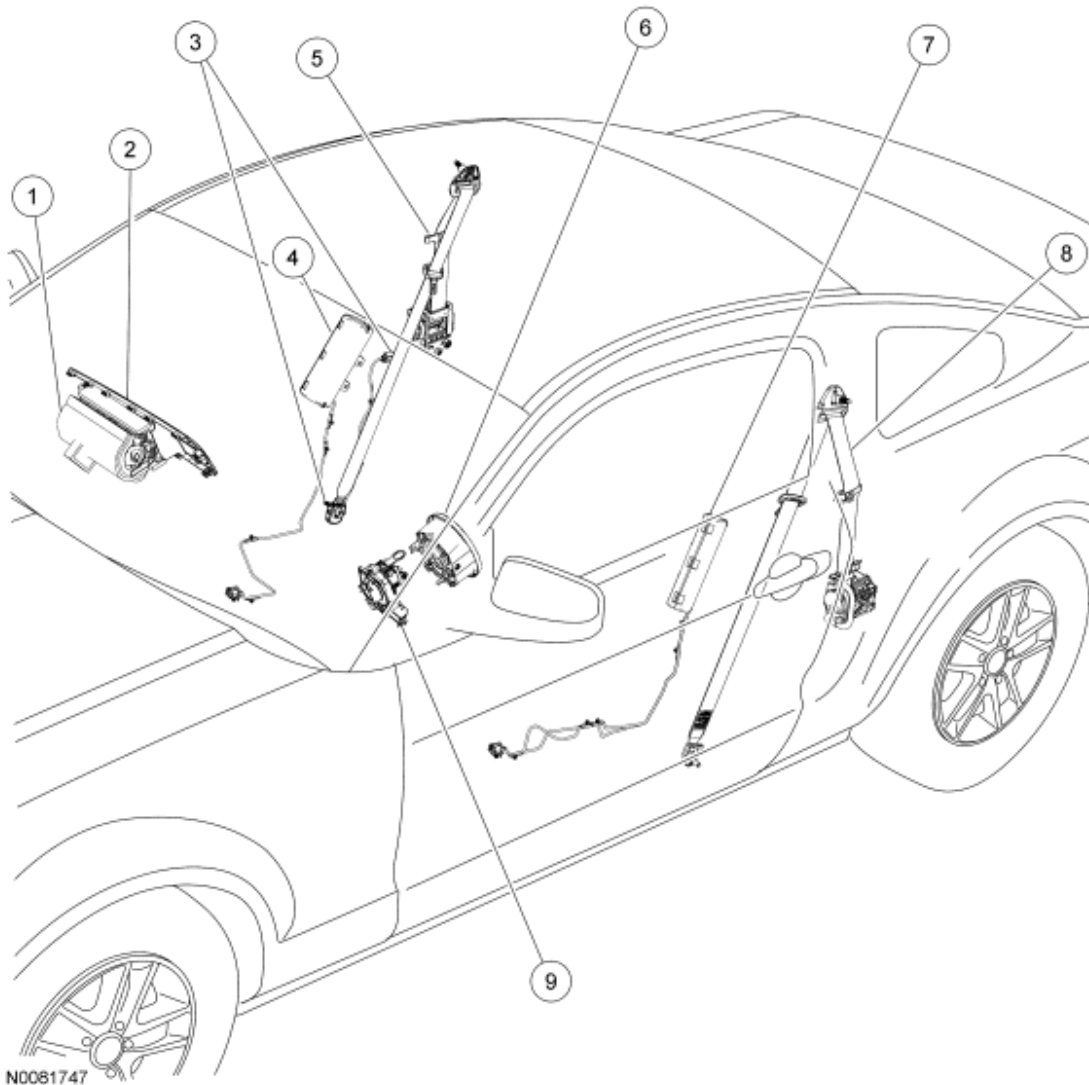
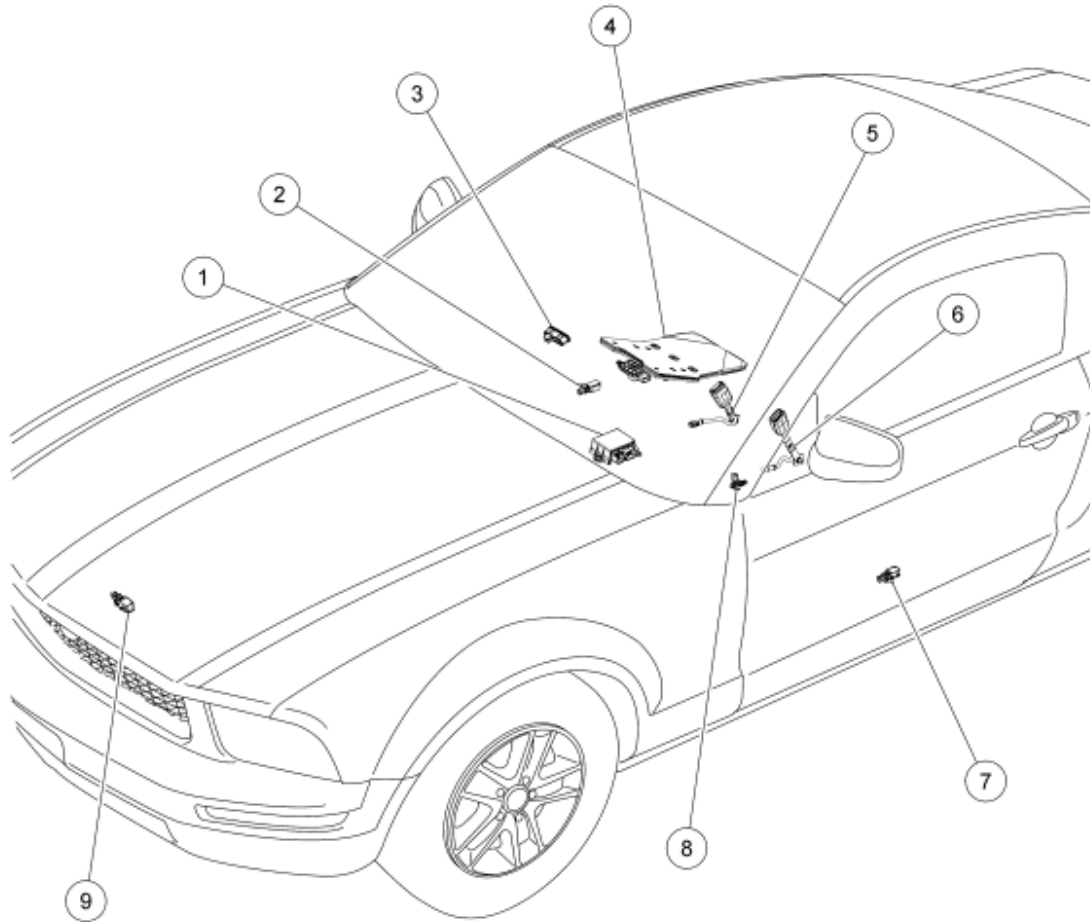


Fig. 1: Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) Components (1 Of 2)
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	044A74	Passenger air bag module assembly
2	04338	Passenger air bag cover
3	-	Belt Tension Sensor (BTS) (part of 611B08)
4	611D10	Passenger seat side air bag module
5	611B08	Passenger safety belt retractor and pretensioner (includes BTS)
6	043B13	Driver air bag module
7	611D11	Driver seat side air bag module
8	611B09	Driver safety belt retractor and pretensioner
9	14A664	Clockspring

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N0070835

Fig. 2: Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS) Components (2 Of 2)
Courtesy of FORD MOTOR CO.

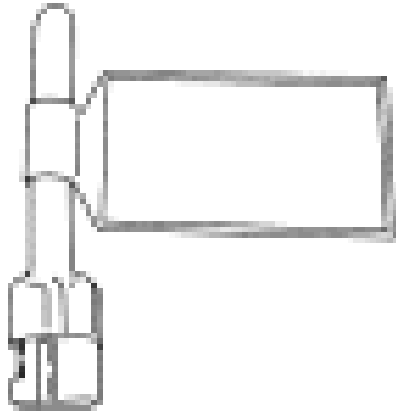
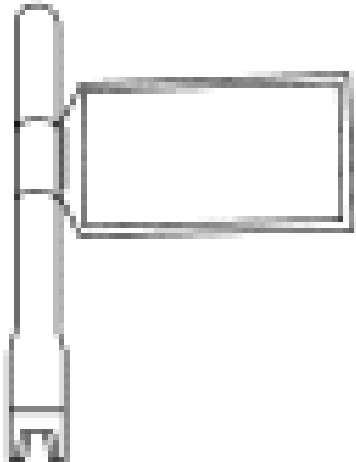
Item	Part Number	Description
1	14B321	Restraints Control Module (RCM)
2	14B345	Passenger side impact sensor
3	-	Passenger Air Bag Deactivation (PAD) indicator
4	603B02	Occupant Classification Sensor (OCS) system
5	61202	Passenger safety belt buckle (includes safety belt switch)
6	61203	Driver safety belt buckle (includes safety belt switch)
7	14B345	Driver side impact sensor
8	14B416	Seat position sensor
9	14B345	Front impact severity sensor (Driver/Center front crash

	sensor)
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DIAGNOSTIC TESTS

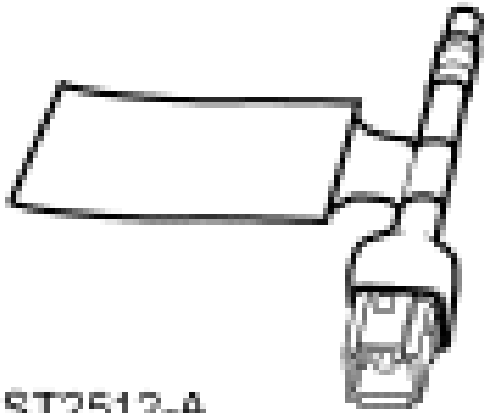
AIR BAG AND SAFETY BELT PRETENSIONER SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Special Tools

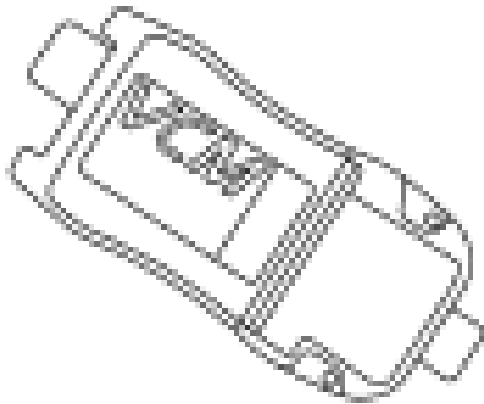
Illustration	Tool Name	Tool Number
 ST2507-A	Diagnostic Tool, Restraint System (2 Required)	418-133
 ST2502-A	Diagnostic Tool, Restraint System (3 Required)	418-F395
	Diagnostic Tool, Restraint System (1 Required)	418-F403

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ST2512-A



ST2834-A



ST1137-A

Flex Probe Kit

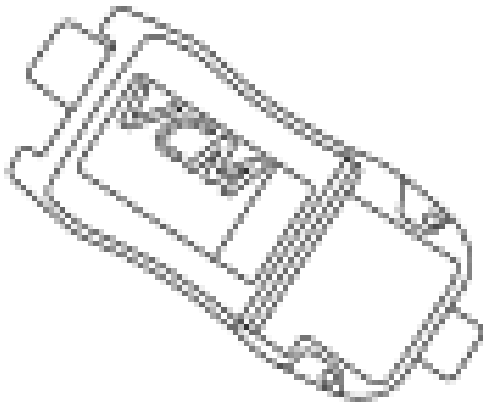
105-R025C or equivalent

FLUKE 73III Automotive
Meter

105-R0057 or equivalent

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ST2834-A

Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS)

software with appropriate hardware, or equivalent scan tool

Principles of Operation

During a frontal or side crash, the restraints control module (RCM) may deploy the safety belt retractor pretensioners, side air bag(s) and/or none, one or both stages of the driver/passenger dual-stage air bag based on crash severity and conditions. The fact that the pretensioners or air bags did not deploy for both front seat occupants in a collision does not indicate a fault with the supplemental restraints system (SRS).

In a frontal collision, the front impact severity sensor detects sudden vehicle deceleration and sends an electrical signal to the RCM. The RCM uses the information from the front impact severity sensor, safety belt buckle switches and the occupant classification system module (OCSM) to determine deployment. If deployment is required, the RCM sends voltage and current to the air bag module(s) and safety belt retractor pretensioner(s).

In a side collision, the side impact sensor(s) detects sudden vehicle lateral deceleration and sends an electrical signal to the RCM. The RCM uses the information from the side impact sensor, safety belt buckle switches and the OCSM to determine deployment. If deployment is required, the RCM sends voltage and current to the side air bag module(s) and safety belt retractor pretensioner(s).

The RCM performs a complete system "self-test" during each startup. If a SRS fault exists, the air bag warning indicator will illuminate and remain illuminated for the rest of the key cycle. In addition to the self-test at start up, the RCM continuously monitors all SRS components and circuitry for correct operation. The RCM communicates current and historical DTCs through the data link connector (DLC) using a scan tool. The RCM also communicates to the OCSM on a dedicated high-speed controller area network (HS-CAN) communication system.

Air Bag Warning Indicator

The air bag warning indicator:

- is located in the instrument cluster (IC) module.
- and circuitry prove out is a function of the restraints control module (RCM). The RCM will prove out the

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air bag warning indicator by lighting the air bag warning indicator for 6 seconds and then turn off.

- will flash and/or illuminate based on the supplemental restraint system (SRS) fault.
- will illuminate if the RCM is disconnected.

Air Bag Module Second Stage Deployment Check

Because the driver and passenger front air bags each have 2 deployment stages, it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is **mandatory** that the front air bag module be remotely deployed using the appropriate air bag disposal procedure.

- For information on driver air bag module and/or passenger air bag module remote deployment, refer to **Pyrotechnic Device Disposal**.

Clockspring

The clockspring:

- is mounted on the steering column, behind the steering wheel.
- allows for continuous electrical connections between the driver air bag module and the restraints control module (RCM) when the steering wheel is turned.
- allows for continuous electrical connections between the steering mounted controls and various other components.

Driver Air Bag Module

The driver air bag module:

- is installed new as an assembly.
- is a dual-stage air bag, deploying at 1 of 2 different rates depending upon impact severity.
- is mounted in the center of the steering wheel.
- will deploy upon receiving a flow of current from the restraints control module (RCM).

Impact Sensors

The impact sensors provide data to the restraints control module (RCM) for use in calculating impact severity. This is accomplished using various electrical sensors located throughout the vehicle. A front impact severity sensor is located in the front-center of the vehicle, behind the grille. In addition, there are side impact sensors located near the base of each B-pillar.

Loops/Squibs

All deployable devices contain an initiating device called a squib. The squib is part of the deployment loop. Air bag/safety canopies modules can contain more than one squib, some vehicles may have up to 4 squibs in one air bag module. Squibs are often referred to as loops during the diagnostic process.

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Occupant Classification Sensor (OCS) System

The occupant classification sensor (OCS) system is found only on the front passenger seat. The front passenger seat OCS system is comprised of a silicone gel-filled bladder mounted in the seat cushion, a pressure sensor that is mounted to the seat frame and an occupant classification system module (OCSM) which is also mounted to the seat frame. Pressure is applied to the OCS system bladder when the weight of any occupant or object in the front passenger seat is sensed. The pressure is then transferred through a tube, is sensed by the OCS system pressure sensor, then electronically communicated to the OCSM system. Based on preprogrammed set points (Empty, Below Threshold, Indeterminate and/or Above Threshold), the OCSM will inform the restraints control module (RCM) of the necessary information via a dedicated high-speed controller area network (HS-CAN). The RCM uses this information in determining if the passenger air bag module is to be deployed in the event of a deployable collision. The RCM may also use this information to illuminate/not illuminate the passenger air bag deactivation (PAD) indicator.

When an OCS system fault is present, the OCSM communicates the fault information to the RCM. Upon receiving the fault information from the OCSM, the RCM will illuminate the air bag warning indicator or the air bag warning chime will be activated (if an air bag warning indicator fault is present). The supplemental restraint system (SRS) then defaults the passenger air bag module to ON (activated) regardless of the size of the occupant in the front outboard passenger seat.

The OCS system is also used for operation of the passenger Belt-Minder®. For information on the passenger Belt-Minder® feature, refer to **SAFETY BELT SYSTEM** article. To deactivate or reactivate the passenger Belt-Minder® feature, refer to **INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES** article or the Owner's Literature.

The OCSM components (seat cushion foam pad, bladder with pressure sensor and OCSM) are calibrated to each other and are serviced as an assembly. **OCS system components are not to be installed separately .**

The OCSM also interprets a variable voltage signal provided by the safety belt tension sensor to identify the presence of a properly fastened child safety seat in the front outboard passenger seat. The OCSM then communicates with the RCM, automatically deactivating the passenger air bag module. Refer to **Safety Belt Tension Sensor**.

Passenger Air Bag Deactivation (PAD) Indicator

NOTE: The passenger air bag deactivation (PAD) indicator is part of the hazard/traction control switch assembly and cannot be serviced separately.

The passenger air bag deactivation (PAD) indicator is a visual indicator used to inform the front seat occupants of the passenger air bag deactivation state. The PAD indicator is located in a position visible to each front seat occupant.

The restraints control module (RCM) controls the state of the PAD indicator through a direct hardwire connection, based on information provided by the occupant classification system module (OCSM). The PAD indicator is lit to indicate the passenger air bag module is deactivated (OFF). An exception to this is when the front passenger seat is determined to be empty, and therefore indication of a deactivated passenger air bag module is not necessary. In all other cases, the PAD indicator is unlit when the passenger air bag module is

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enabled.

When the ignition switch is in the RUN position, the PAD indicator prove-out period is initiated by the RCM. The RCM briefly activates the PAD indicator to verify operation.

When an OCS system fault is present, the supplemental restraint system (SRS) defaults the passenger air bag module to enabled regardless of the size of the occupant in the front outboard passenger seat. The PAD indicator will be unlit.

The following table indicates the passenger air bag status and the PAD indicator status based the size of the front outboard passenger occupant.

PASSENGER AIR BAG AND PASSENGER AIR BAG DEACTIVATION (PAD) INDICATOR STATUS

Occupant Size	Passenger Safety Belt Buckle Status	Passenger Air Bag Status	Passenger Air Bag Deactivation (PAD) Indicator Status
None	Unbuckled	Disabled	Unlit
None	Buckled	Disabled	Lit
Small	Buckled/ Unbuckled	Disabled	Lit
Large	Buckled/ Unbuckled	Enabled	Unlit

Passenger Air Bag Module

The passenger air bag module:

- is a dual-stage air bag, deploying at 1 of 2 different rates depending upon impact severity and safety belt usage.
- will deploy upon receiving a flow of current from the restraints control module (RCM).
- is installed as an assembly.
- is mounted in the right side of the instrument panel.

Restraints Control Module (RCM)

NOTE: When installing a new restraints control module (RCM), always make sure the correct RCM is being installed. If an incorrect RCM is installed, erroneous DTCs will result.

The RCM is mounted on the center tunnel under the instrument panel. The RCM:

- deploys the air bags in the event of a deployable impact.
- activates the safety belt retractor pretensioners to remove slack from the safety belt webbing.
- monitors the supplemental restraint system (SRS) for faults.
- illuminates the air bag warning indicator if a fault is detected.

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- illuminates the PAD indicator when conditions warrant illumination.
- flashes the air bag warning indicator to indicate the lamp fault code (LFC) detected.
- communicates through the data link connector (DLC) the current or historical DTCs.
- will active the chime, located in the instrument cluster (IC) module, if an air bag warning indicator fault is present and another SRS fault exists.
- records deployable and non-deployable impact data.

The RCM monitors the SRS for possible faults. If a fault is detected while the ignition switch is in the RUN position, the RCM will illuminate the air bag warning indicator located in the IC module.

When the ignition is cycled (turned off and then on), the air bag warning indicator will remain lit for 6 seconds and then go out. If an SRS fault exists, the air bag warning indicator will then flash the 2-digit LFC associated with that fault. The air bag warning indicator will flash the LFC 5 times, then remain illuminated for the rest of the key cycle. The RCM will communicate current and historical DTCs through the DLC using a scan tool. If the air bag warning indicator does not function, and the RCM detects a fault condition, the RCM will signal activate an audible chime. The chime is a series of 5 sets of 5 tone bursts. If the chime is heard, the SRS and the air bag warning indicator require repair.

LFCs are prioritized. If 2 or more faults occur at the same time, the fault having the highest priority will be displayed first. After that fault has been corrected, the next highest priority fault will be displayed.

The RCM includes a backup power supply. This feature provides sufficient power to deploy the front air bags, seat side air bags and the safety belt retractor pretensioners in the event that the ignition circuit is damaged in a collision before the air bags are deployed. The backup power supply will deplete its stored energy reserve in approximately one minute after the power and/or ground is removed from the RCM.

Restraint System Diagnostic Tool Warning

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

Safety Belt Buckle Switch

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled, to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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The safety belt buckle switches are also used for the driver safety belt warning system and the driver and passenger Belt-Minder®. Refer to **SAFETY BELT SYSTEM** article.

Safety Belt Pretensioners

As part of the supplemental restraint system (SRS) the safety belt retractors are equipped with pretensioners. The pretensioners remove excess slack from the safety belt webbing. The pretensioners are activated by the restraints control module (RCM) when the module detects an impact event force exceeding a programmed limit. Refer to **SAFETY BELT SYSTEM** article.

Safety Belt Tension Sensor

The safety belt tension sensor:

- is part of the front passenger safety belt and retractor assembly.
- is located at the safety belt anchor.
- is used in conjunction with the occupant classification sensor (OCS) system.
- is a 3-wire Hall-effect sensor that is part of the front passenger safety belt retractor.

The safety belt tension sensor is a variable output sensor used by the OCS system to identify the presence of a child safety seat on the front passenger seat. The safety belt tension sensor senses the tension on the safety belt assembly then provides an output to the occupant classification system module (OCSM), indicating that the safety belt assembly is cinched. After sensing the weight applied to the seat by the occupant and using the safety belt tension sensor input, the OCSM determines how the occupant should be classified and communicates this information to the restraints control module (RCM). If the occupant is classified to be a child, the RCM will then automatically deactivate the passenger air bag module.

Seat Side Air Bag Module

The seat side air bag module:

- will deploy upon receiving a flow of current from the restraints control module (RCM), initiated by the side impact sensor and internal RCM circuitry.
- is installed as an assembly.
- is mounted in the driver/passenger seat back.

Seat Track Position Sensor

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM). The RCM uses this information in determining the deployment rate of the dual-stage driver air bag module.

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the forward or rearward seat positions, to ground. The RCM will sense the difference in this current draw, 6 mA

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(forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

Secondary Air Bag Warning (Chime)

The secondary air bag warning chime is an audible chime generated by the instrument cluster (IC) module and controlled by the restraints control module (RCM). If the RCM has detected a fault with the air bag warning indicator, a DTC will be stored in memory of the RCM. When a supplemental restraint system (SRS) fault has been detected and an air bag warning indicator fault is present, the RCM will sound the secondary air bag warning chime in a pattern of 5 sets of 5 beeps.

Diagnostic Instructions

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

1. Run the Self Test to determine what on-demand and continuous memory DTCs are being sensed by the restraints control module (RCM).
2. Retrieve all SRS DTCs and fault PIDs stored in the RCM memory.
3. If on-demand DTCs are different than continuous memory DTCs, always repair the on-demand DTCs first.

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.

Diagnostic Test Options

Scan tool options:

- Retrieve/Clear Continuous Memory DTCs
- Self Test/On-Demand

Refer to the manufacturer's literature for the scan tool being used for correct scan tool test options.

Self Test/On-Demand

The Self Test option is used to verify that no electrical concerns exist with the 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 scan tool with a brief description of the DTC. The self-test should always be carried out after any repair to verify that the repair was successful.

To run the on-demand Self Test, follow these steps:

1. Connect the scan tool to the data link connector (DLC).

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2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the scan tool being used.
4. Select Self Test.
5. Select RCM.
6. The module will run the self-test and display on-demand (reflecting hard system concerns) and continuous memory (historic) DTCs on the scan tool.

Self Test/Continuous Memory and Clear DTCs

During vehicle operation, the restraints control module (RCM) will detect and store both intermittent and hard failure DTCs in non-volatile 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 and module. DTCs can be retrieved with a scan tool using the Self Test option. All DTCs stored in the RCM will be displayed on the scan tool along with a brief description of the DTC. If no DTCs are present, the scan 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 by the RCM since the concern was last detected, all continuous memory DTCs will automatically be removed from memory.

To retrieve or clear DTCs, follow these steps:

1. Connect the scan tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the scan tool being used.
4. Select Self Test.
5. Select RCM.

NOTE: Before proceeding with the clearing operation, make note of the DTCs displayed. Once cleared, DTCs cannot be retrieved.

6. All DTCs will be displayed on the screen.
7. Clear the DTCs. After clearing the DTCs, cycle the key OFF, then ON.
 - Continuous memory DTCs that have been cleared will **not** reoccur as "continuous memory" in the same key cycle. Only new DTCs which were **not** present before clearing can occur as "continuous memory" after clearing.

DataLogger PID/Data

The DataLogger PID/Data option allows the scan tool operator to read the state of PIDs to aid in diagnosing the system. PIDs are real-time measurements of parameters, such as voltages and resistances, that are calculated by the restraints control module (RCM) and sent to the scan tool for display. Many of the PIDs supported by the

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modules are calculated periodically and are, therefore, not true real-time readings.

To retrieve PIDs, follow these steps:

1. Connect the scan tool to the data link connector (DLC).
2. Turn the ignition switch to the ON position.
3. Follow the manufacturer's instructions for the scan tool being used.
4. Select DataLogger.
5. Select RCM.

Active Commands

This command allows the technician to verify operation of the air bag warning 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 (LFC)

When the restraints control module (RCM) detects a system fault, it will cause the air bag warning 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 a LFC.

Each LFC is flashed 5 times after which the air bag indicator 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 DTCs.

Diagnosing Customer Concerns With On-Demand DTCs

If the air bag warning indicator is reported ON by the customer when the vehicle comes in for service, connect the scan tool and follow the **DIAGNOSTIC TESTS** to identify the concern.

Once the DTC is known, read the Normal Operation of the pinpoint test for the DTC involved.

Using the scan tool with the use of PIDs and active command(s) may be of assistance in diagnosing the concern.

- Follow the depowering procedure.
- Determine the location of components involved in creating the DTC.
- Carry out a thorough visual inspection of:
 - components.
 - connectors.
 - splices and wiring harnesses.
 - insulation on conductors.

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Diagnosing Customer Concerns With Continuous Memory DTCs

If an air bag warning indicator ON is reported by the customer but is not present when the vehicle comes in for service, follow the **DIAGNOSTIC TESTS** to identify the intermittent DTC.

Once the DTC is known, read the Normal Operation part of the pinpoint test for the DTC involved.

- Follow the depowering procedure.
- Determine the location of components involved in creating the DTC.
- Carry out a thorough visual inspection of:
 - components.
 - connectors.
 - splices and wiring harnesses.
 - insulation on conductors.

Bit-Mapped DTCs

Many of the continuous memory and on-demand DTCs that can be present in the restraints control module (RCM) provide general fault information and require accessing the bit-mapped fault PIDs to identify the specific concern. DTCs that use fault PIDs are conceptually different from conventional DTCs.

Conventional DTCs identify a specific concern for a given component and point to a particular diagnostic path. In the diagnostic path, PIDs are sometimes used to determine the root cause.

DTCs that use fault PIDs do not identify the specific concern. The DTC identifies the component(s) or type of components in which the concern exists. The next level, fault PIDs, identifies the specific device and fault condition. Fault PIDs are available for both on-demand (active) and continuous memory (historic) DTCs. Those associated PIDs are an extension of the information provided by the DTC and are identified by the same DTC number. Using both DTC and the fault PID is necessary to define the specific fault present (in the same manner as normal DTCs).

A scan tool must be used to view DTCs and their fault PIDs. Once a scan tool has retrieved a DTC, use the scan tool to view the fault PIDs. Viewing the fault PIDs must be carried out to identify the specific concern that is present. When the viewing of fault PIDs has been carried out, the scan tool can display the PIDs associated with that DTC, including the status or state that exists (on-demand DTC) or existed (continuous memory DTC). Refer to the manufacturer's instructions for the scan tool being used on how to view fault PIDs.

Prove Out Procedure

Turn the ignition switch from the OFF to the ON position and visually monitor the air bag warning indicator with all supplemental restraint system (SRS) components connected or restraint system diagnostic tools installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an SRS fault is present, the air bag warning indicator will:

- fail to light.
- remain lit continuously.

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- 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 restraints control module (RCM) to complete the testing of the SRS. If the air bag warning indicator is inoperative and an SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator will need to be repaired before diagnosis can continue.

Air Bag Reconnect Checklist

The checklist below should be completed following diagnosis or repair of any air bag system concern:

- All in-seat harness connectors connected?
- Clockspring connectors connected?
- Occupant classification sensor (OCS) system connected?
- Passenger air bag deactivation (PAD) indicator connected?
- All air bag modules connected?
- All safety belt retractor pretensioner connectors connected?
- All sensors (front and side impact, safety belt buckle switch, driver seat position and passenger safety belt tension) connected?
- Restraints control module (RCM) connected?
- RCM fuse installed?
- Battery connected?

Air Bag Module Second Stage Deployment Check

Because the driver and passenger front air bags each have 2 deployment stages, it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is **mandatory** that the front air bag module be remotely deployed using the appropriate air bag disposal procedure to make sure the second stage has been deployed.

- For information on driver or passenger air bag module remote deployment, refer to **Pyrotechnic Device Disposal**.

Glossary

Air Bag/Pretensioner Restraint System Diagnostic Tools

Air bag/pretensioner restraint system diagnostic tools are used to simulate the equivalent resistance of an air bag module or safety belt pretensioner during certain diagnostic procedures.

Disconnect the Component

Disconnect the component means to disconnect the component vehicle harness connector, not to remove the

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component. Do not reconnect a disconnected component unless instructed to do so.

Deactivate the Supplemental Restraint System (SRS)

Deactivate the supplemental restraint system (SRS) means to carry out a deactivation procedure. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.

Depower the SRS

Depower the SRS means to disconnect the battery and remove the restraints control module (RCM) fuse. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

Deployment Loop

The deployment loop is made up of the RCM, deployable device, air bag(s), safety belt pretensioners (safety canopies, deployable steering columns, load limiting retractor, adaptive tether, adaptive vent, if equipped) and associated circuits.

Install a New Component

Install a new component means to remove the existing component and install a new authorized part obtained from Ford Customer Service Division.

Prove Out the SRS

Prove out the SRS means to turn the ignition switch from the OFF to the ON position and visually monitor the air bag warning indicator with all SRS components connected. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an SRS fault is present, the air bag warning indicator will either fail to light, flash or remain lit continuously. The air bag warning indicator may not illuminate 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 warning indicator is inoperative and an SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator will need to be repaired before diagnosis can continue.

Reactivate the SRS

Reactivate the SRS means to carry out the reactivation procedure. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.

Reconnect the SRS

Reconnect the SRS means to reconnect all system components. Refer to **Air Bag Reconnect Checklist**.

Repower the SRS

Repower the SRS means, turn the ignition ON, install the RCM fuse and connect the battery ground cable. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

Secondary Air Bag Warning

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The secondary air bag warning is an audible fault format that consists of 5 sets of 5 tone bursts, with each set of 5 tone bursts separated by a 5-second quiet period. One tone burst cycle will consist of one-second on and one-second off. This series of 5 activations is repeated every 30 minutes.

Squib

A squib (igniter) is a device designed to convert electrical energy to the heat energy necessary to deploy a pyrotechnic restraints system device.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

VISUAL INSPECTION CHART

Mechanical	Electrical
• Damaged restraints control module (RCM) or loose mounting • Damaged occupant classification sensor (OCS) system component • Damaged front impact severity sensor(s) or loose mounting • Damaged side impact sensor(s) or loose mounting • Damaged or disconnected passenger air bag deactivation (PAD) indicator	• Open smart junction box (SJB) fuse 17 (10A) • Damaged wiring harness • Loose, damaged or corroded connectors • Circuitry open/shorted • Damaged shorting bars

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

NOTE: **Make sure to use the latest scan tool software release.**

4. If the cause is not visually evident, connect the scan tool to the data link connector (DLC).

NOTE: **The vehicle communication module (VCM) LED prove out confirms power and ground from the DLC are provided to the VCM.**

5. If the scan tool does not communicate with the VCM:

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- check the VCM connection to the vehicle.
 - check the scan tool connection to the VCM.
 - refer to **MODULE COMMUNICATIONS NETWORK** article, No Power To The Scan Tool, to diagnose no communication with the scan tool.
6. If the scan tool does not communicate with the vehicle:
- verify the ignition key is in the ON position.
 - verify the scan tool operation with a known good vehicle.
 - refer to **MODULE COMMUNICATIONS NETWORK** article to diagnose no response from the PCM.
7. Carry out the network test.
- If the scan tool responds with no communication for one or more modules, refer to **MODULE COMMUNICATIONS NETWORK** article.
 - If the network test passes, retrieve and record continuous memory DTCs.
8. Clear the continuous DTCs and carry out the self-test diagnostics for the restraints control module (RCM).
9. If the DTCs retrieved are related to the concern, go to the Supplemental Restraint System (SRS) DTC Chart. For all other DTCs, refer to **MULTIFUNCTION ELECTRONIC MODULES** article.
10. If no DTCs related to the concern are retrieved, go to **Symptom Chart**.

Supplemental Restraint System (SRS) DTC Chart

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

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) DTC CHART

DTC ^a	LFC ^b	Description	Action To Take
-	Continuous	The Air Bag Warning Indicator is Illuminated Continuously	Go to <u>Pinpoint Test A.</u>
B1231	13	Event Threshold Exceeded	INSTALL a new RCM and impact sensors.
B1317	Continuous	Battery Voltage High	Go to <u>Pinpoint Test Y.</u>
B1318	Continuous	Battery Voltage Low	Go to <u>Pinpoint Test Y.</u>
B1342	12	ECU Is Faulted	INSTALL a new RCM. REFER to <u>Restraints Control Module (RCM).</u>
B1869	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Lamp Air Bag Warning Indicator Circuit Open	Go to <u>Pinpoint Test B.</u>
B1870	NONE	Lamp Air Bag Warning	Go to <u>Pinpoint Test C.</u>

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	Continuous lamp Secondary air bag warning sounds if another fault is present	Indicator Circuit Short To Battery	
B1884	18	PAD Warning Lamp Circuit Failure	Go to <u>Pinpoint Test D.</u>
B1890	18	PAD Warning Lamp Circuit Short to Battery	Go to <u>Pinpoint Test E.</u>
B1891	53	Air Bag Tone Warning Indicator Short to Battery	Go to <u>Pinpoint Test F.</u>
B1892	53	Air Bag Tone Warning Indicator Circuit Failure	Go to <u>Pinpoint Test G.</u>
B1921	14	Air Bag Diagnostic Monitor Ground Circuit Open	Go to <u>Pinpoint Test H.</u>
B2290	16	Occupant Classification System Fault	Go to <u>Pinpoint Test I.</u>
B2292	33	Restraint System - Seatbelt Pretensioner Fault (Driver Pretensioner Circuit Failure)	Go to <u>Pinpoint Test J.</u>
B2292	34	Restraint System - Seatbelt Pretensioner Fault (Passenger Pretensioner Circuit Failure)	Go to <u>Pinpoint Test J.</u>
B2293	19	Restraint System - Airbag Fault (Driver Front Air Bag Circuit Failure)	Go to <u>Pinpoint Test K.</u>
B2293	21	Restraint System - Airbag Fault (Passenger Front Air Bag Circuit Failure)	Go to <u>Pinpoint Test K.</u>
B2295	22	Restraint System - Side Airbag Fault (Driver Seat Side Air Bag Circuit Failure)	Go to <u>Pinpoint Test L.</u>
B2295	23	Restraint System - Side Airbag Fault (Passenger Seat Side Air Bag Circuit Failure)	Go to <u>Pinpoint Test L.</u>
B2296	42	Restraint System - Impact Sensor Fault (Front Impact Severity Sensor Circuit Failure)	Go to <u>Pinpoint Test M.</u>
B2296	43	Restraint System - Impact Sensor Fault (Driver Side	Go to <u>Pinpoint Test M.</u>

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		Impact Sensor Circuit Failure)	
B2296	44	Restraint System - Impact Sensor Fault (Passenger Side Impact Sensor Circuit Failure)	Go to <u>Pinpoint Test M.</u>
B2434	51	Drivers Seat Belt Buckle Switch Circuit Short to Ground	Go to <u>Pinpoint Test N.</u>
B2435	51	Driver Seat Belt Buckle Switch Resistance out of Range	Go to <u>Pinpoint Test O.</u>
B2438	52	Passengers Seat Belt Buckle Switch Circuit Short to Ground	Go to <u>Pinpoint Test P.</u>
B2439	52	Passengers Seat Belt Buckle Switch Resistance out of Range	Go to <u>Pinpoint Test Q.</u>
B2477	NONE Continuous lamp Secondary air bag warning sounds if another fault is present	Module Configuration Failure	INSTALL a new RCM. REFER to <u>Restraints Control Module (RCM).</u>
B2691	51	Seat Belt Buckle Switch Circuit Fault, Front Driver's side	Go to <u>Pinpoint Test R.</u>
B2692	52	Front Passenger's Seat Belt Buckle Switch Circuit Fault	Go to <u>Pinpoint Test S.</u>
B2909	16	Belt Tension Sensor Fault	Go to <u>Pinpoint Test T.</u>
C1414	15	Incorrect Module Design Level	Go to <u>Pinpoint Test U.</u>
C1947	49	Front Driver's Seat Track Position Switch Circuit Short to Ground	Go to <u>Pinpoint Test V.</u>
C1948	49	Front Driver's Seat Track Position Switch Circuit Resistance Out of Range	Go to <u>Pinpoint Test W.</u>
C1981	49	Front Driver's Seat Track Position Switch Circuit Fault	Go to <u>Pinpoint Test X.</u>
-	-	No Communication with the Restraints Control Module (RCM)	REFER to <u>MODULE COMMUNICATIONS NETWORK</u> article to diagnose the no communication concern.

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^a Retrieved using scan tool.

^b Flashed on air bag warning indicator.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
The air bag warning indicator is illuminated continuously	- Fuse - Ignition circuits - Ground circuits - Restraints control module (RCM) - Connector shorting bar - RCM camming beam - RCM disconnected - Other circuitry - Instrument cluster (IC) module	Go to <u>Pinpoint Test A</u>.
Air bag warning indicator flashing	- Supplemental restraint system (SRS) fault - RCM connector not fully seated	- REFER to Supplemental Restraint System (SRS) DTC Chart. - ENGAGE the RCM connector.
Audible tone - DTCs retrieved	SRS system fault and air bag warning indicator fault	REFER to Supplemental Restraint System (SRS) DTC Chart.
No communication with the RCM	- Fuse - Diagnostic tool - Data link connector (DLC) - RCM internal concern - Circuitry	REFER to <u>MODULE COMMUNICATIONS NETWORK</u> article to diagnose the no communication concern.

Pinpoint Tests

Pinpoint Test A: The Air Bag Warning Indicator is Illuminated Continuously

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

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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 warning 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 warning 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)**. 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 DTCs to the scan tool through the data link connector (DLC). If the scan tool displays NO COMMUNICATION when retrieving continuous DTCs, refer to **MODULE COMMUNICATIONS NETWORK** article to diagnose the no communication concern.

This pinpoint test is intended to diagnose the following:

- Fuse
- Wiring, terminals or connectors
- Damaged ignition circuit
- RCM disconnected from the vehicle harness
- Loss of RCM signal ground
- RCM
- Instrument cluster (IC) module

PINPOINT TEST A: THE AIR BAG WARNING INDICATOR IS ILLUMINATED CONTINUOUSLY

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

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- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

A1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Were any continuous or on-demand DTCs retrieved?**
YES : If continuous memory DTCs were retrieved, go to A2. If on-demand DTCs were retrieved, go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.
NO : Go to A2.

A2 CHECK THE RCM CONNECTION

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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 A5.

A3 CHECK CIRCUIT 608 (BK/YE) FOR AN OPEN

- Disconnect: IC Module C220
- Disconnect: RCM C2041a

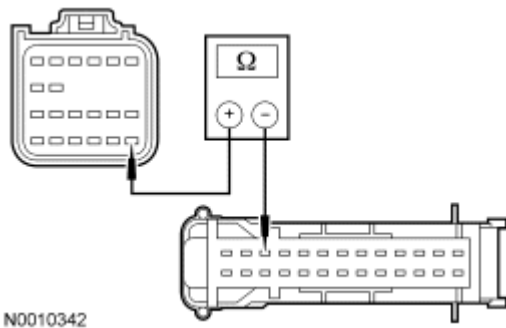


Fig. 3: Checking Circuit 608 (BK/LG) For Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between IC module C220-24, circuit 608 (BK/YE), harness side and RCM C2041a-19, circuit 608 (BK/YE), harness side.
- **Is the resistance less than 0.5 ohm?**
YES : Go to A4.
NO : REPAIR circuit 608 (BK/YE). Go to A5.

A4 CHECK THE AIR BAG WARNING INDICATOR OPERATION (DRIVE LAMP OFF)

- Deactivate the SRS. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Connect: IC Module C220
- Key in ON position.
- Connect a fused jumper between the RCM C2041a-19, circuit 608 (BK/YE), harness side and ground.
- **Is the air bag warning indicator off?**
YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to A5.
NO : INSTALL a new IC module. REFER to **INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES** article. Go to A5.

A5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
 - If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Key in ON position.

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test B: DTC B1869 - Lamp Air Bag Warning Indicator Circuit Open

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

During normal operation, the air bag warning 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 restraints control module (RCM) turns the air bag warning indicator off by supplying a ground on the air bag warning indicator circuit.

If the RCM detects an open or short to ground on the air bag warning indicator circuit, it will store DTC B1869 in memory.

- DTC B1869 Lamp Air Bag Warning Indicator Circuit Open - If the RCM detects an open circuit or short to ground on the air bag warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM
- Instrument cluster (IC) module

PINPOINT TEST B: DTC B1869 - LAMP AIR BAG WARNING INDICATOR CIRCUIT OPEN

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking

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measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

B1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B1869 retrieved?**

YES : If the air bag warning indicator **does** illuminate, go to B2.

If the air bag warning indicator **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 AIR BAG WARNING INDICATOR OPERATION (DRIVE LAMP OFF)

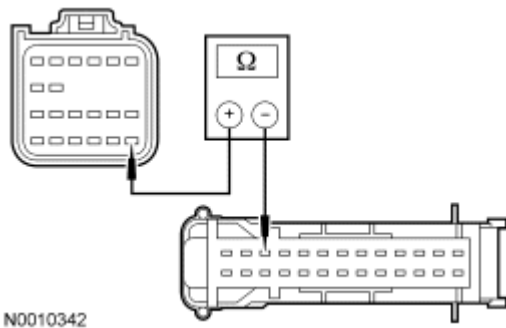
- Key in OFF position.
- Deactivate the SRS. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Disconnect: RCM C2041a and C2041b
- Key in ON position.
- Connect a fused jumper lead between RCM C2041a-19, circuit 608 (BK/YE), harness side and ground.
- **Is the air bag warning indicator OFF?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to B7.

NO : Go to B3.

B3 CHECK CIRCUIT 608 (BK/YE) FOR AN OPEN

- Key in OFF position.
- Disconnect: IC Module C220
- Disconnect: RCM C2041a and C2041b



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Fig. 4: Checking Circuit 608 (BK/LG) For Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between IC module C220-24, circuit 608 (BK/YE), harness side and RCM C2041a-19, circuit 608 (BK/YE), harness side.
- **Is the resistance less than 0.5 ohm?**
YES : INSTALL a new IC module. REFER to **INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES** article. Go to B7.
NO : REPAIR circuit 608 (BK/YE). Go to B7.

B4 CHECK THE AIR BAG WARNING INDICATOR OPERATION (DRIVE LAMP ON)

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- **Is the air bag warning indicator ON?**
YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to B7.
NO : Go to B5.

B5 CHECK CIRCUIT 608 (BK/YE) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Connect: RCM C2041a and C2041b
- Disconnect: IC Module C220

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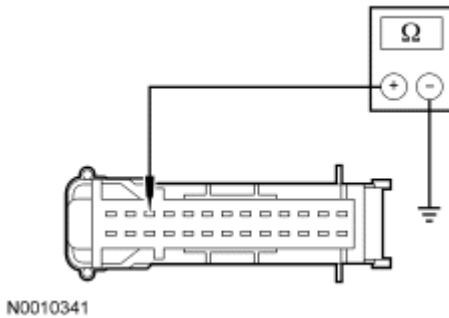


Fig. 5: Checking Circuit 608 (BK/LG) For Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between IC module C220-24, 608 (BK/YE), harness side and ground.
- **Is the resistance greater than 10,000 ohms?**

YES : INSTALL a new IC module. REFER to INSTRUMENT CLUSTER AND PANEL ILLUMINATION article. Go to B7.

NO : REPAIR circuit 608 (BK/YE). Go to B7.

B6 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B1869 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.

If the air bag warning indicator **does** illuminate, go to B2.

If the air bag warning indicator **does not** illuminate, go to B4.

NO : CHECK for causes of intermittent open or short to ground on circuit 608 (BK/YE). ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition key frequently. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to B7.

B7 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.

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- If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**
YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.
NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

During normal operation, the air bag warning 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 restraints control module (RCM) illuminates the air bag warning indicator by removing the ground on the air bag warning indicator circuit.

If the RCM detects a short to battery on the air bag warning indicator circuit, it will store DTC B1870 in memory. If any other DTCs are detected with this DTC active, the secondary air bag warning tone will be activated.

- DTC B1870 Air Bag Warning Indicator Circuit Short to Battery - If the RCM detects a short to battery on the air bag warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM
- Instrument cluster (IC) module

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the

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accidental deployment of these modules, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

C1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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/YE) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Disconnect: IC Module C220
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Key in ON position.

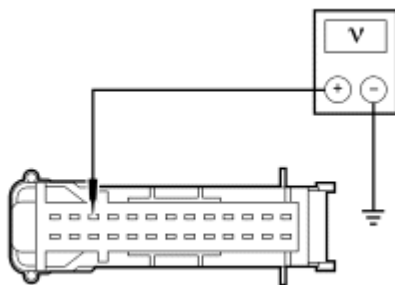


Fig. 6: Checking Circuit 608 (BK/LG) For Short To Battery
Courtesy of FORD MOTOR CO.

- Measure the voltage between IC module C220-24, circuit 608 (BK/YE), harness side and ground.
- **Is any voltage present?**
YES : REPAIR circuit 608 (BK/YE). Go to C5.
NO : Go to C3.

C3 CHECK THE RCM

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

NOTE: DTC B1869 should be retrieved when carrying out the on-demand self test due to an open on circuit 608 (BK/YE), DTC B1870 should not be retrieved at this time.

- **Was RCM on-demand DTC B1870 retrieved?**
YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to C5.
NO : REPAIR or INSTALL a new IC module. REFER to **INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES** article. Go to C5.

C4 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B1870 retrieved?**
YES : Go to C2.
NO : CHECK for causes of intermittent short to battery on circuit 608 (BK/YE). 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to C5.

C5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).

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- If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

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

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 by supplying a ground on the PAD indicator circuit to verify operation. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

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

- DTC B1884 PAD Warning Lamp Circuit Failure - If the RCM detects an open circuit or short to ground on the PAD indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- PAD indicator
- RCM

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

D1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Was RCM on-demand DTC B1884 retrieved?

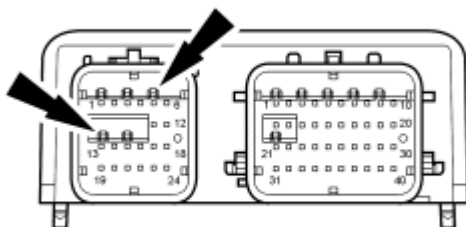
YES : If the PAD indicator **does not** illuminate, go to D2.

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 SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: RCM C2041a and C2041b

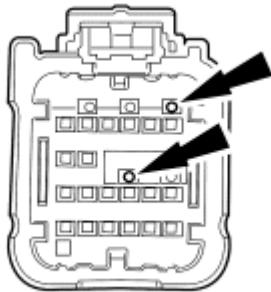


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Fig. 7: Inspecting RCM C2041A Component Side For Damaged Camming Beams

Courtesy of FORD MOTOR CO.

- Inspect the RCM C2041a component side for damaged camming beams.



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Fig. 8: Inspecting RCM C2041A Harness Side For Worn, Damaged Or Dislodged Shorting Bars

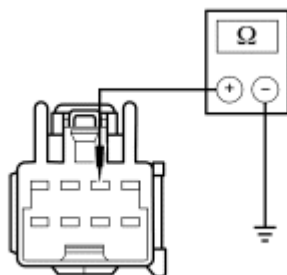
Courtesy of FORD MOTOR CO.

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.
- **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: PAD Indicator C2039



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Fig. 9: Checking Circuit 1632 (TN/LB) For Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and

ground.

- **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

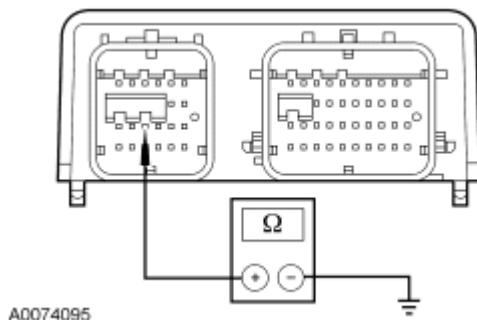


Fig. 10: Measuring Resistance Between RCM C2041A-15, Circuit 1632 (TN/LB), Component Side & Ground

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-15, circuit 1632 (TN/LB), component side and ground.
- **Is the resistance greater than 10,000 ohms?**
YES : REPAIR circuit 1632 (TN/LB). Go to D10.
NO : Go to D8.

D5 CHECK THE PAD INDICATOR

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Disconnect: PAD Indicator C2039

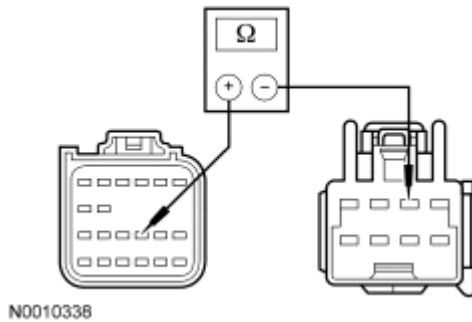


Fig. 11: Checking Circuit 1632 (TN/LB) For Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and RCM C2041a-15, circuit 1632 (TN/LB), harness side.
- **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 SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.

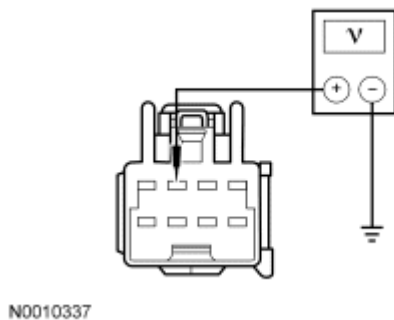


Fig. 12: Checking Circuit 1850 (YE) For Open
Courtesy of FORD MOTOR CO.

- Measure the voltage between PAD indicator C2039-3, circuit 1850 (YE), harness side and ground.
- **Is voltage greater than 10 volts?**
YES : INSTALL a new PAD indicator. REFER to Passenger Air Bag Deactivation (PAD) Indicator. 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

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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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Connect: PAD Indicator C2039 (if previously disconnected)
- Connect: RCM C2041a and C2041b (if previously disconnected)
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B1884 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to D10.

D9 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to D10.

D10 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

When the ignition is in the ON position, the passenger air bag deactivation (PAD) indicator prove-out period is initiated by the restraints control module (RCM). The RCM briefly activates the PAD indicator by supplying a ground on the indicator circuit to verify operation. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

If the RCM detects a short to battery on the PAD warning lamp circuit, it will store DTC B1890 in memory and flash lamp fault code (LFC) 18 on the air bag warning indicator.

- DTC B1890 PAD Warning Lamp Circuit Short to Battery - If the RCM detects a short to battery on the PAD indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- PAD indicator
- RCM

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking

measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

E1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

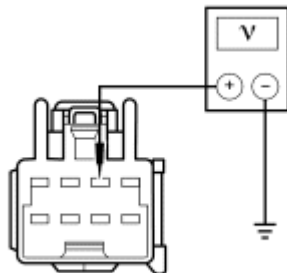
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B1890 retrieved?**

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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: PAD Indicator C2039
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.



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Fig. 13: Checking Circuit 1632 (TN/LB) For Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between PAD indicator C2039-2, circuit 1632 (TN/LB), harness side and ground.

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- **Is any voltage present?**

YES : REPAIR circuit 1632 (TN/LB). Go to E5.

NO : Go to E3.

E3 CHECK THE RCM

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

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 RCM on-demand DTC B1890 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to E5.

NO : INSTALL a new PAD Indicator. REFER to **Passenger Air Bag Deactivation (PAD) Indicator**. Go to E5.

E4 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to E5.

E5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

- Key in ON position.

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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Pinpoint Test F: LFC 53/DTC B1891 - Air Bag Tone Warning Indicator Circuit Short to Battery

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

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

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

- DTC B1891 Air Bag Tone Warning Indicator Circuit Short to Battery - If the RCM detects a short to battery on the air bag tone warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Instrument cluster (IC) module
- RCM

PINPOINT TEST F: LFC 53/DTC B1891 - AIR BAG TONE WARNING INDICATOR CIRCUIT SHORT TO BATTERY

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

NOTE: SRS components should only be disconnected or reconnected when instructed

to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

F1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

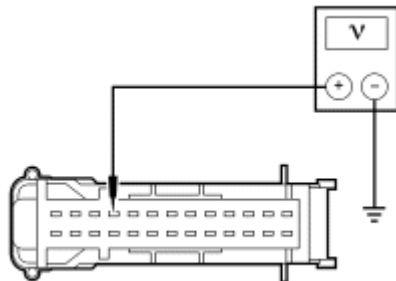
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Was RCM on-demand DTC B1891 retrieved?

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 SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: RCM C2041a and C2041b
- Disconnect: IC Module C220
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.



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Fig. 14: Measuring Voltage Between Instrument Cluster Module C220-23, Circuit 1083 (LB/BK) & Ground

Courtesy of FORD MOTOR CO.

- Measure the voltage between IC module C220-23, circuit 1083 (LB/BK), harness side and ground.
- Is any voltage present?

YES : REPAIR circuit 1083 (LB/BK). Go to F5.

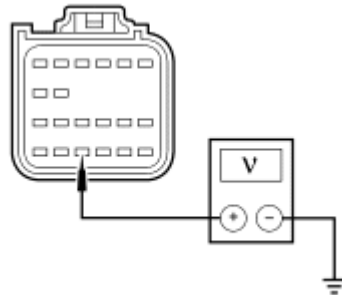
NO : Go to F3.

F3 CHECK THE AIR BAG TONE WARNING INDICATOR CIRCUIT

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- Key in OFF position.
- Deactivate the SRS. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Connect: IC Module C220
- Key in ON position.



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Fig. 15: Measuring Voltage Between RCM C2041A-22, Circuit 1083 (LB/BK), Harness Side & Ground

Courtesy of FORD MOTOR CO.

- Measure the voltage between RCM C2041a-22, circuit 1083 (LB/BK), harness side and ground.
- **Is voltage greater than 10 volts?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to F5.

NO : INSTALL a new IC module. REFER to **INSTRUMENT CLUSTER (IC), MESSAGE CENTER, AND WARNING CHIMES** article. Go to F5.

F4 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to F5.

F5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).

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- If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**
YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.
NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

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

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

- DTC B1892 Air Bag Tone Warning Indicator Circuit Failure - If the RCM detects an open circuit or short to ground on the air bag tone warning indicator circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- IC module
- RCM

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air

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curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

G1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

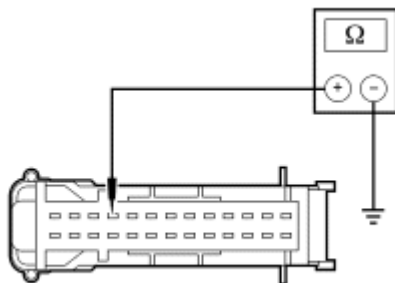
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B1892 retrieved?**

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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Disconnect: RCM C2041a and C2041b
- Disconnect: IC Module C220



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Fig. 16: Measuring Resistance Between Instrument Cluster Module C220-23, Circuit 1083 (LB/BK) & Ground

Courtesy of FORD MOTOR CO.

- Measure the resistance between IC module C220-23, circuit 1083 (LB/BK), harness side and ground.
- **Is the resistance greater than 10,000 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

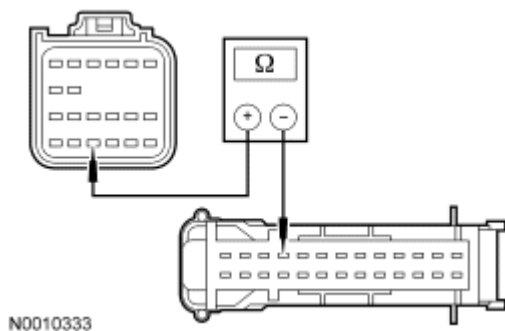


Fig. 17: Measuring Resistance Between RCM C2041A-22 & C220-23, Circuit 1083 (LB/BK)

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-22, circuit 1083 (LB/BK), harness side, and IC module C220-23, circuit 1083 (LB/BK), harness side.
- **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 SRS. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Connect: IC Module C220
- Key in ON position.

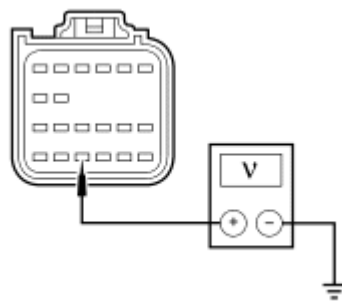


Fig. 18: Measuring Voltage Between RCM C2041A-22, Circuit 1083 (LB/BK), Harness Side & Ground

Courtesy of FORD MOTOR CO.

- Measure the voltage between RCM C2041a-22, circuit 1083 (LB/BK), harness side and ground.
- **Is voltage greater than 10 volts?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to G6.

NO : INSTALL a new IC module. REFER to **INSTRUMENT CLUSTER AND PANEL ILLUMINATION** article. Go to G6.

G5 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to G6.

G6 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
 - If previously directed to deactivate the SRS, reactivate the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Deactivation and Reactivation**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic

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and connector information.

WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTE: A resistance difference as low as 10 ohms may set this DTC.

Normal Operation

The restraints control module (RCM) continuously 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 DTC B1921 in memory and flash lamp fault code (LFC) 14 on the air bag warning indicator.

- DTC B1921 Air Bag Diagnostic Monitor Ground Circuit Open - If the RCM detects a resistance difference between the case ground and pin 16 of C2041a, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM mounting
- RCM

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

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NOTE: Supplemental restraint system (SRS) components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

H1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- 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).**
- 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).**
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**

- Disconnect: RCM C2041a and C2041b

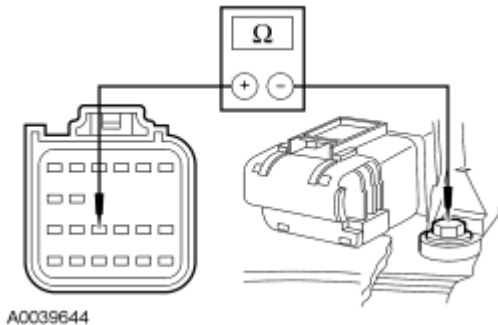


Fig. 19: Measuring Resistance Between RCM C2041A-16, Circuit 1203 (BK/LB), Harness Side & RCM Case Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-16, circuit 1203 (BK/LB), harness side and the RCM case ground.
- **Is the resistance less than 5 ohms?**
YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to H6.
NO : REPAIR circuit 1203 (BK/LB). Go to H6.

H5 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to H6.

H6 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

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- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test I: LFC 16/DTC B2290 - Occupant Classification System Fault

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

NOTE: **Lamp fault code (LFC) 16 is shared between DTC B2290 and DTC B2909.**

Normal Operation

The occupant classification sensor (OCS) system 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)**.

The restraints control module (RCM) continuously monitors messages from the occupant classification system module (OCSM). If the RCM receives a fault message reported by the OCSM, it will store DTC B2290 in memory and flash LFC 16 on the air bag warning indicator.

The OCS system components (seat cushion foam pad, bladder with pressure sensor, OCSM 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 OCS system component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor, OCSM and seat wiring harness) must be installed as an assembly.

Fault PIDs^a	Description	Fault Trigger Condition
2290_24_OD and 2290_24_CM	OCS Sensing Element Fault, Front Pass. side	When the occupant classification system module (OCSM) senses a failure on one of the bladder pressure sensor circuits, a fault will be indicated.
2290_25_OD and 2290_25_CM	OCS Calibration Fault, Front Pass. side	When the OCSM senses a difference in stored data, a fault will be indicated.
2290_26_OD and 2290_26_CM	OCS Communications Fault, Front Pass. side	When the OCSM is unable to communicate with the restraints control module (RCM), a fault will be indicated.
2290_27_OD and 2290_27_CM	Generic OCS Module Fault, Front Pass. side	When the OCSM senses a fault with the bladder pressure sensor and/or circuits, a fault will be indicated.

^a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2290. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2290.

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This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- OCS system component
- RCM

PINPOINT TEST I: LFC 16/DTC B2290 - OCCUPANT CLASSIFICATION SYSTEM FAULT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: To identify between a production OCS system and a OCS system service kit, inspect the OCSM electrical connector.

A production OCS system allows the disconnection of the OCSM electrical connector.

A service OCS system service kit has the electrical connector glued to the OCSM, it cannot and should not be disconnected or altered.

NOTE: Mounting and orientation of the OCSM is critical for correct system operation. Failure to correctly position and securely fasten the OCSM in place can set a DTC in the RCM.

If the vehicle has been in a collision in which the passenger seat may have been

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damaged, inspect the OCSM mounting area for deformation. If damaged, a new OCS system 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.

I1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2290 Fault PIDs
 - Refer to PID list in Normal Operation to view B2290 fault PIDs.
- **Do any on-demand DTC B2290 fault PIDs indicate a fault?**

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 2290_26_OD (OCS Communications Fault, Front Pass. side), go to I2.

For 2290_24_OD (OCS Sensing Element Fault, Front Pass. side), go to I11.

For 2290_27_OD (Generic OCS Module Fault, Front Pass. side), go to I19.

For 2290_25_OD (OCS Calibration Fault, Front Pass. side), go to I29.

Vehicles with a OCS system service kit

For 2290_27_OD (Generic OCS Module Fault, Front Pass. side), go to I19.

For 2290_26_OD (OCS Communications Fault, Front Pass. side), go to I20.

For 2290_25_OD (OCS Calibration Fault, Front Pass. side), go to I29.

For 2290_24_OD (OCS Sensing Element Fault, Front Pass. side), INSTALL a new OCS service kit. REFER to **Occupant Classification Sensor**. 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.

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- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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.

I3 CHECK IGNITION CIRCUIT 937 (RD/WH) FOR VOLTAGE

- Disconnect: Passenger Seat Side Air Bag C337
- Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337
- Disconnect: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

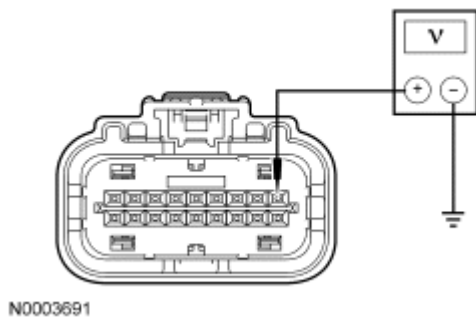


Fig. 20: Measuring Voltage Between OCSM C3043-1, Circuit 937 (RD/WH), Harness Side & Ground

Courtesy of FORD MOTOR CO.

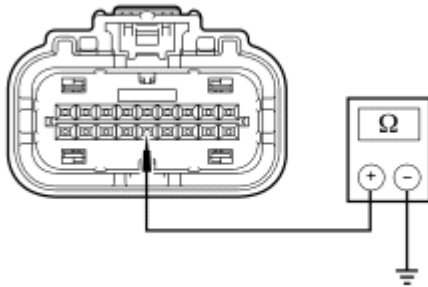
- Measure the voltage between OCSM C3043-1, circuit 937 (RD/WH), harness side and ground.
- **Is voltage greater than 10 volts?**
YES : Go to I4.
NO : REPAIR circuit 937 (RD/WH). Go to I31.

I4 CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

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Fig. 21: Measuring Resistance Between OCSM C3043-14, Circuit 676 (PK/OG), Harness Side & Ground

Courtesy of FORD MOTOR CO.

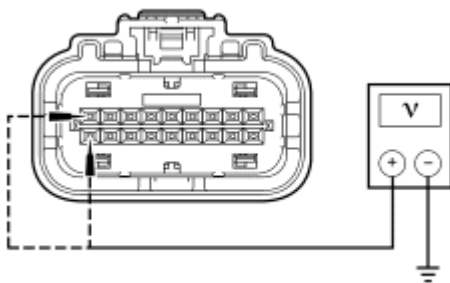
- Measure the resistance between OCSM C3043-14, circuit 676 (PK/OG), harness side and ground.
- **Is the resistance less than 5 ohms?**

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

- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.



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Fig. 22: Checking Circuits 1918 (BN/WH) & 1919 (PK/OG) For A Short To Voltage

Courtesy of FORD MOTOR CO.

- Measure the voltage between OCSM:
 - C3043-18, circuit 1918 (BN/WH), harness side and ground.
 - C3043-9, circuit 1919 (PK/OG), harness side and ground.
- **Is voltage present on either circuit?**

YES : REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). Go to I31.

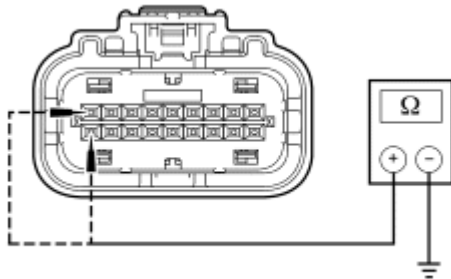
NO : Go to I6.

I6 CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND

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- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.



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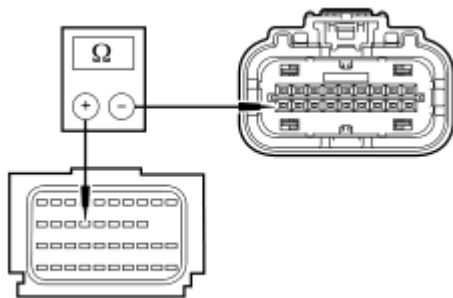
Fig. 23: Checking Circuits 1918 (BN/WH) & 1919 (PK/OG) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM:
 - C3043-18, circuit 1918 (BN/WH), harness side and ground.
 - C3043-9, circuit 1919 (PK/OG), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**

YES : Go to I7.

NO : REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). Go to I31.

I7 CHECK CIRCUIT 1918 (BN/WH) FOR AN OPEN BETWEEN THE OCS AND RCM



N0010346

Fig. 24: Checking Circuit 1918 (BN/WH) For An Open Between OCS & RCM
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-17, circuit 1918 (BN/WH), harness side and OCSM C3043-18, circuit 1918 (BN/WH), harness side.
- **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 RCM

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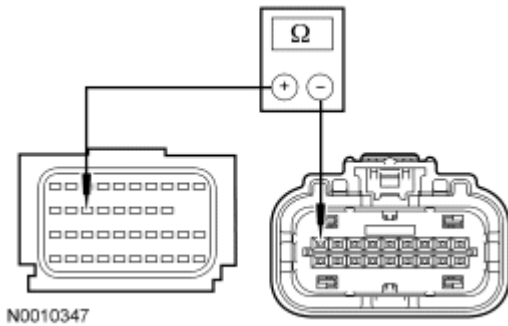


Fig. 25: Checking Circuit 1919 (PK/OG) For An Open Between OCS & RCM
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-18, circuit 1919 (PK/OG), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.
- **Is the resistance less than 0.5 ohm?**
YES : Go to I9.
NO : REPAIR circuit 1919 (PK/OG). Go to I31.

I9 CHECK FOR A SHORT BETWEEN CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG)

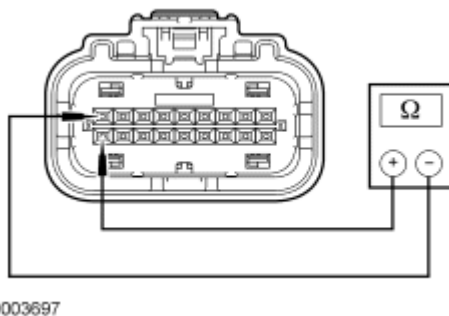


Fig. 26: Checking For A Short Between Circuits 1918 (BN/WH) & 1919 (PK/OG)
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM C3043-18, circuit 1918 (BN/WH), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.
- **Is the resistance greater than 10,000 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.

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- Install a known good RCM. Refer to **Restraints Control Module (RCM)**.
- Connect: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2290 Fault PIDs
 - Refer to PID list in Normal Operation to view B2290 fault PIDs.
- **Do any on-demand DTC B2290 fault PIDs indicate a fault?**

YES : INSTALL a new OCS system service kit. REFER to **Occupant Classification Sensor**. Go to I31.

NO : Fault corrected. Go to I31.

I11 CHECK THE SEAT WIRING AND CONNECTORS

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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

- 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: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Measure the voltage between OCS pressure sensor:
 - C3159-1, circuit 1568 (RD/WH), harness side and ground.
 - C3159-2, circuit 1570 (TN/BK), harness side and ground.
 - C3159-3, circuit 1569 (GY/LB), harness side and ground.
- **Is voltage present on any circuit?**

YES : REPAIR circuit 1568 (RD/WH), 1569 (GY/LB) or 1570 (TN/BK). Go to I31.

NO : Go to I13.

I13 CHECK CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK) FOR A SHORT TO

GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Measure the resistance between OCS pressure sensor:
 - C3159-1, circuit 1568 (RD/WH), harness side and ground.
 - C3159-2, circuit 1570 (TN/BK), harness side and ground.
 - C3159-3, circuit 1569 (GY/LB), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**

YES : Go to I14.

NO : REPAIR circuit 1568 (RD/WH), 1569 (GY/LB) or 1570 (TN/BK). Go to I31.

I14 CHECK CIRCUIT 1568 (RD/WH) FOR AN OPEN BETWEEN THE OCS MODULE AND PRESSURE SENSOR

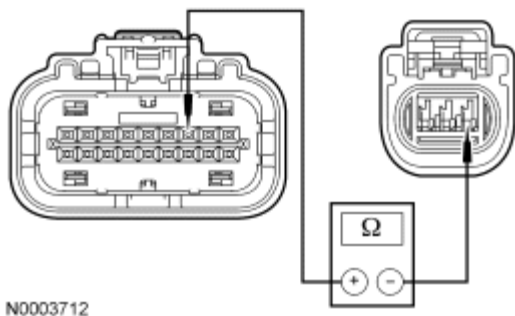


Fig. 27: Checking Circuit 1568 (RD/WH) For An Open Between OCS Module & Pressure Sensor

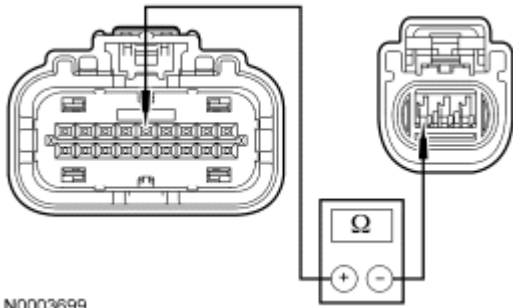
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM C3043-3, circuit 1568 (RD/WH), harness side and OCS pressure sensor C3159-1, circuit 1568 (RD/WH), harness side.
- **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 MODULE AND PRESSURE SENSOR



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Fig. 28: Checking Circuit 1569 (GY/LB) For An Open Between OCS Module & Pressure Sensor

Courtesy of FORD MOTOR CO.

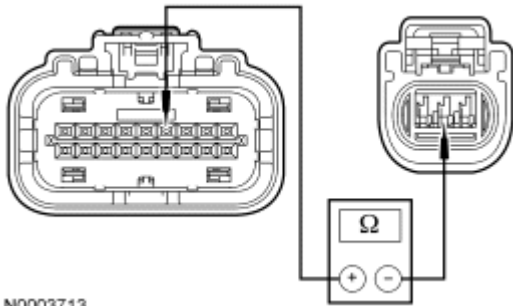
- Measure the resistance between OCSM C3043-5, circuit 1569 (GY/DB), harness side and OCS pressure sensor C3159-3, circuit 1569 (GY/DB), harness side.

- **Is the resistance less than 0.5 ohm?**

YES : Go to I16.

NO : REPAIR circuit 1569 (GY/LB). Go to I31.

I16 CHECK CIRCUIT 1570 (TN/BK) FOR AN OPEN BETWEEN THE OCS MODULE AND PRESSURE SENSOR



N0003713

Fig. 29: Checking Circuit 1570 (TN/BK) For An Open Between OCS Module & Pressure Sensor

Courtesy of FORD MOTOR CO.

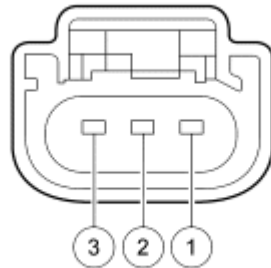
- Measure the resistance between OCSM C3043-4, circuit 1570 (TN/BK), harness side and OCS pressure sensor C3159-2, circuit 1570 (TN/BK), harness side.

- **Is the resistance less than 0.5 ohm?**

YES : Go to I17.

NO : REPAIR circuit 1570 (TN/BK). Go to I31.

I17 CHECK FOR A SHORT BETWEEN OCS PRESSURE SENSOR CIRCUITS 1568 (RD/WH), 1569 (GY/LB) AND 1570 (TN/BK)



N0080718

Fig. 30: Checking For A Short Between OCS Pressure Sensor Circuits 1568 (RD/WH), 1569 (GY/LB) & 1570 (TN/BK)
Courtesy of FORD MOTOR CO.

- Measure the resistance between the OCS pressure sensor circuits, harness side using the following chart:

OCS Pressure Sensor	OCS Pressure Sensor
C3159-1, circuit 1568 (RD/WH)	C3159-2, circuit 1570 (TN/BK)
C3159-1, circuit 1568 (RD/WH)	C3159-3, circuit 1569 (GY/LB)
C3159-2, circuit 1570 (TN/BK)	C3159-3, circuit 1569 (GY/LB)

- Are the resistances greater than 10,000 ohms?

YES : Go to I18.

NO : REPAIR the affected circuits, 1568 (RD/WH), 1569 (GY/LB) and/or 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**.

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- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.

NOTE: To prevent system failure, it is necessary to carry out the occupant classification sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset.

NOTE: To prevent system failure, the following precautions must be taken before carrying out the occupant classification sensor (OCS) system reset:

- Make sure the voltage to the OCSM is above 8.0 volts and less than 18.0 volts.
 - Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°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, 6°C to 36°C (42°F to 97°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 carrying out the OCS system reset process.
- Carry out the OCS system reset.
 - If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
 - OCS system connector and wiring for damage
 - Pressure sensor hose for kinks and/or damage

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- Seat-related wiring harness and body wiring harness terminals and connectors for damage
- Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to **Occupant Classification Sensor**.
- 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 diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2290 Fault PIDs
 - Refer to PID list in Normal Operation to view B2290 fault PIDs.
- **Do any on-demand DTC B2290 fault PIDs indicate a fault?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to I31.

NO : Fault corrected. Go to I31.

I19 CHECK FOR AN OCS MOUNTING FAULT

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

NOTE: **The OCSM must be correctly positioned and securely fastened in place. Failure to do so can set a DTC in the RCM.**

- Inspect the OCSM for correct mounting location and direction or for OCSM fastener tightness or for damage to the OCSM and seat cushion pan.
- **Is the OCSM correctly located, are the fasteners tight and is there no damage to components?**

YES : INSTALL a new OCS system service kit. REFER to **Occupant Classification Sensor**. Go to I31.

NO : REPAIR as necessary.

REFER to **Occupant Classification Sensor** for correct mounting location/direction of the OCSM and the correct fasteners for mounting of the OCSM.

If the seat cushion pan is damaged, refer to the appropriate procedure in **SEATING** article for repair. Go to I31.

I20 CHECK THE SEAT WIRING AND CONNECTORS

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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 VOLTAGE

- Disconnect: Passenger Seat Side Air Bag C337
- Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337
- Disconnect: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

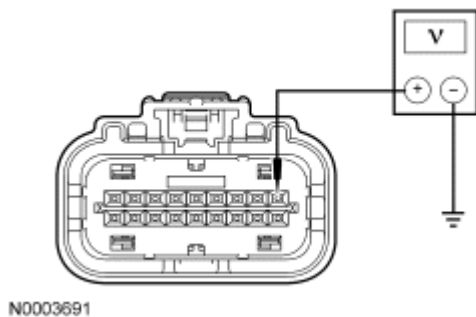


Fig. 31: Measuring Voltage Between OCSM C3043-1, Circuit 937 (RD/WH), Harness Side & Ground

Courtesy of FORD MOTOR CO.

- Measure the voltage between OCSM C3043-1, circuit 937 (RD/WH), harness side and ground.
- **Is voltage greater than 10 volts?**

YES : Go to I22.

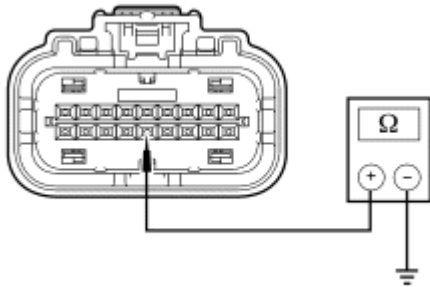
NO : REPAIR circuit 937 (RD/WH). Go to I31.

I22 CHECK GROUND CIRCUIT 1203 (BK/LB) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

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N0003692

Fig. 32: Measuring Resistance Between OCSM C3043-14, Circuit 676 (PK/OG), Harness Side & Ground

Courtesy of FORD MOTOR CO.

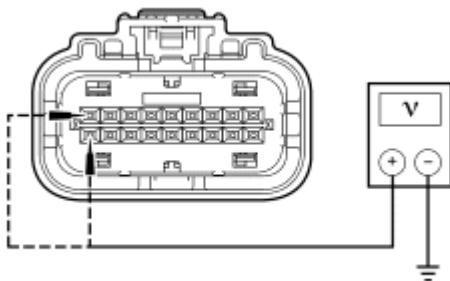
- Measure the resistance between OCSM C3043-14, circuit 676 (PK/OG), harness side and ground.
- **Is the resistance less than 5 ohms?**

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 RCM

- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.



N0003693

Fig. 33: Checking Circuits 1918 (BN/WH) & 1919 (PK/OG) For A Short To Voltage Between Passenger Seat & RCM

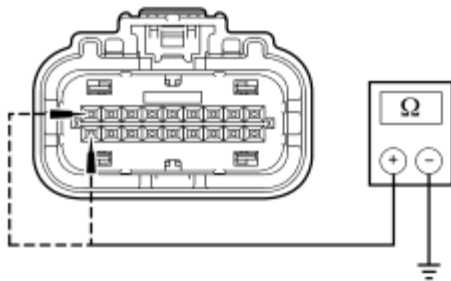
Courtesy of FORD MOTOR CO.

- Measure the voltage between OCSM:
 - C3043-18, circuit 1918 (BN/WH), harness side and ground.
 - C3043-9, circuit 1919 (PK/OG), harness side and ground.
 - **Is voltage present on either circuit?**
- YES :** REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). Go to I31.

NO : Go to I24.

I24 CHECK CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG) FOR A SHORT TO GROUND BETWEEN THE PASSENGER SEAT AND RCM

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.



N0003694

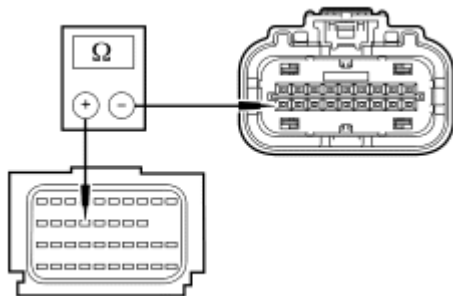
Fig. 34: Checking Circuits 1918 (BN/WH) & 1919 (PK/OG) For A Short To Ground Between Passenger Seat & RCM
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM:
 - C3043-18, circuit 1918 (BN/WH), harness side and ground.
 - C3043-9, circuit 1919 (PK/OG), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**

YES : Go to I25.

NO : REPAIR circuit 1918 (BN/WH) or 1919 (PK/OG). Go to I31.

I25 CHECK CIRCUIT 1918 (BN/WH) FOR AN OPEN BETWEEN THE PASSENGER SEAT AND RCM



N0010346

Fig. 35: Checking Circuit 1918 (BN/WH) For An Open Between Passenger Seat & RCM
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-17, circuit 1918 (BN/WH), harness side and OCSM C3043-18, circuit 1918 (BN/WH), harness side.

- **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 RCM

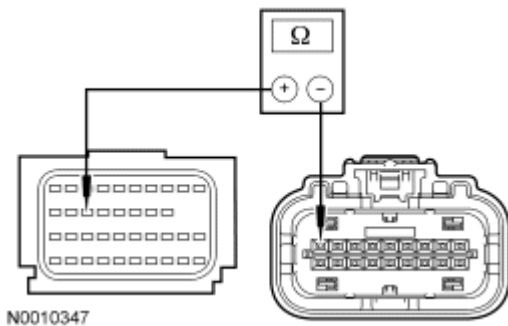


Fig. 36: Checking Circuit 1919 (PK/OG) For An Open Between Passenger Seat & RCM
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-18, circuit 1919 (PK/OG), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.

- **Is the resistance less than 0.5 ohm?**

YES : Go to I27.

NO : REPAIR circuit 1919 (PK/OG). Go to I31.

I27 CHECK FOR A SHORT BETWEEN CIRCUITS 1918 (BN/WH) AND 1919 (PK/OG)

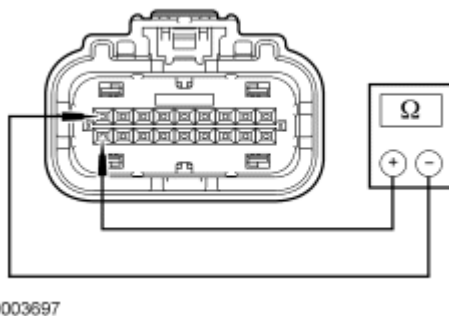


Fig. 37: Checking For A Short Between Circuits 1918 (BN/WH) & 1919 (PK/OG)
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM C3043-18, circuit 1918 (BN/WH), harness side and OCSM C3043-9, circuit 1919 (PK/OG), harness side.

- **Is the resistance greater than 10,000 ohms?**

YES : Go to I28.

NO : REPAIR circuits 1918 (BN/WH) and 1919 (PK/OG). Go to I31.

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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)**.
- Connect: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2290 Fault PIDs
 - Refer to PID list in Normal Operation to view B2290 fault PIDs.
- **Do any on-demand DTC B2290 fault PIDs indicate a fault?**

YES : INSTALL a new OCS system service kit. REFER to **Occupant Classification Sensor**. 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 ON position.
- Enter the following diagnostic mode on the diagnostic tool: OCS System Reset

WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.

NOTE: To prevent system failure, it is necessary to carry out the occupant classification sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset command.

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NOTE: To prevent system failure, the following precautions must be taken before carrying out the occupant classification sensor (OCS) system reset:

- Make sure the voltage to the OCSM is above 8.0 volts and less than 18.0 volts.
 - Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°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, 6°C to 36°C (42°F to 97°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 carrying out the OCS system reset process.
- Carry out the OCS system reset.
 - If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following and repair any concerns found.
 - OCS system connector and wiring for damage
 - Pressure sensor hose for kinks and/or damage
 - Seat-related wiring harness and body wiring harness terminals and connectors for damage
 - Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit. For additional information, refer to **Occupant Classification Sensor**.
 - 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 diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2290 Fault PIDs
 - Refer to PID list in Normal Operation to view B2290 fault PIDs.
- **Do any on-demand DTC B2290 fault PIDs indicate a fault?**

YES : INSTALL a new OCS system service kit. REFER to **Occupant Classification Sensor**. Go to I31.

NO : Fault corrected. Go to I31.

I30 CHECK FOR AN INTERMITTENT FAULT

- Key in OFF position.

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- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Seat Side Air Bag C337
- Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2290 Fault PIDs
 - Refer to PID list in Normal Operation to view B2290 fault PIDs.
- **Do any on-demand DTC B2290 fault PIDs indicate a fault?**

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.

Vehicles with a production OCS system

For 2290_26_OD (OCS Communications Fault, Front Pass. side), go to I2.

For 2290_24_OD (OCS Sensing Element Fault, Front Pass. side), go to I11.

For 2290_27_OD (Generic OCS Module Fault, Front Pass. side), go to I19.

For 2290_25_OD (OCS Calibration Fault, Front Pass. side), go to I29.

Vehicles with a OCS system service kit

For 2290_27_OD (Generic OCS Module Fault, Front Pass. side), go to I19.

For 2290_26_OD (OCS Communications Fault, Front Pass. side), go to I20.

For 2290_25_OD (OCS Calibration Fault, Front Pass. side), go to I29.

For 2290_24_OD (OCS Sensing Element Fault, Front Pass. side), **INSTALL** a new OCS system service kit. **REFER** to **Occupant Classification Sensor**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** **REPAIR** any intermittent wiring, terminal or connector concerns found. Go to I31.

I31 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

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WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test J: LFC 33 and 34/DTC B2292 - Restraint System - Seatbelt Pretensioner Fault

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

The safety belt retractor pretensioners are activated by the restraints control module (RCM) to remove excessive slack from the safety belt webbing when an impact exceeding preprogrammed limits is detected.

The RCM continuously checks all of the safety belt retractor pretensioners and circuits. If the RCM detects one of the following faults with any of the safety belt retractor pretensioners or circuits, it will store DTC B2292 in memory and flash, depending on the fault indicator, or lamp fault code (LFC) 33 or 34 depending on the fault on the air bag warning indicator.

Fault PIDs ^a	Description	Fault Trigger Condition
2292_24_OD and 2292_24_CM	Pretensioner Circuit Short to Ground, Front Passenger Side	When the restraints control module (RCM) senses a short to ground on either of the passenger pretensioner circuits, a fault will be indicated.
2292_25_OD and 2292_25_CM	Pretensioner Circuit Short to Battery, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger pretensioner circuits, a fault will be indicated.
2292_26_OD and 2292_26_CM	Pretensioner Circuit Open, Front Passenger Side	When the RCM measures greater resistance than 5 ohms between the passenger pretensioner circuits, a fault will be indicated.
2292_27_OD and 2292_27_CM	Pretensioner Circuit Resistance Low, Front Passenger Side	When the RCM measures resistance less than 0.9 ohm between the passenger pretensioner circuits, a fault will be indicated.

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2292_28_OD and 2292_28_CM	Pretensioner Circuit Short to Ground, Front Driver Side	When the RCM senses a short to ground on either of the driver pretensioner circuits, a fault will be indicated.
2292_29_OD and 2292_29_CM	Pretensioner Circuit Short to Battery, Front Driver Side	When the RCM senses a short to voltage on either of the driver pretensioner circuits, a fault will be indicated.
2292_30_OD and 2292_30_CM	Pretensioner Circuit Open, Front Driver Side	When the RCM measures resistance greater than 5 ohms between the driver pretensioner circuits, a fault will be indicated.
2292_31_OD and 2292_31_CM	Pretensioner Circuit Resistance Low, Front Driver Side	When the RCM measures resistance less than 0.9 ohm between the driver pretensioner circuits, a fault will be indicated.

^a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2292. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous memory DTC B2292.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Safety belt pretensioner
- RCM

PINPOINT TEST J: LFC 33 AND 34/DTC B2292 - RESTRAINT SYSTEM - SEATBELT PRETENSIONER FAULT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the

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connector.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

J1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2292 Fault PIDs
 - Refer to PID list in Normal Operation to view B2292 fault PIDs.

- **Do any on-demand DTC B2292 fault PIDs indicate a fault?**

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.

J2 CHECK THE PRETENSIONERS

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: The Affected Safety Belt Retractor Pretensioner C3338 (Driver) or C3336 (Passenger)
- Connect: Restraint System Diagnostic Tool 418-F395 to the Affected Safety Belt Retractor Pretensioner C3338 (Driver) or C3336 (Passenger)
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2292 Fault PIDs
 - Refer to PID list in Normal Operation to view B2292 fault PIDs.

- **Do any on-demand DTC B2292 fault PIDs indicate a fault?**

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 2292_31_OD (Pretensioner Circuit Resistance Low, Front Driver Side), go to J3.

For 2292_30_OD (Pretensioner Circuit Open, Front Driver Side), go to J5.

For 2292_29_OD (Pretensioner Circuit Short to Battery, Front Driver Side), go to J7.

For 2292_28_OD (Pretensioner Circuit Short to Ground, Front Driver Side), go to J9.

For 2292_27_OD (Pretensioner Circuit Resistance Low, Front Passenger Side), go to J4.

For 2292_26_OD (Pretensioner Circuit Open, Front Passenger Side), go to J6.

For 2292_25_OD (Pretensioner Circuit Short to Battery, Front Passenger Side), go to J8.

For 2292_24_OD (Pretensioner Circuit Short to Ground, Front Passenger Side), go to J10.

NO : INSTALL a new driver or passenger safety belt retractor pretensioner. REFER to **SAFETY BELT SYSTEM** article. Go to J13.

J3 CHECK FOR A SHORT BETWEEN THE DRIVER SAFETY BELT RETRACTOR PRETENSIONER CIRCUITS

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b

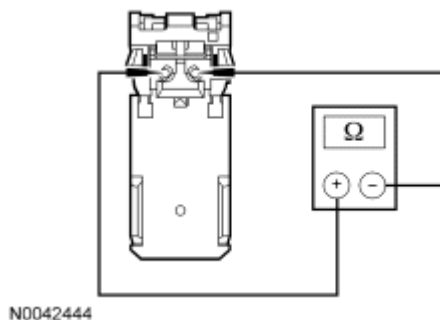


Fig. 38: Checking For A Short Between Driver Safety Belt Retractor Pretensioner Circuits
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver safety belt retractor pretensioner C3338, circuit 1079 (LG/RD), harness side and C3338, circuit 1080 (LG/BK), harness side.

- **Is the resistance greater than 10,000 ohms?**

YES : Go to J11.

NO : REPAIR circuits 1079 (LG/RD) and 1080 (LG/BK). Go to J13.

J4 CHECK FOR A SHORT BETWEEN THE PASSENGER SAFETY BELT RETRACTOR

PRETENSIONER CIRCUITS

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b

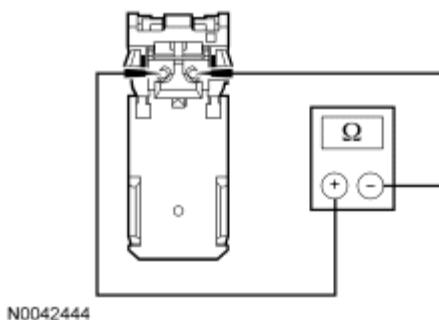


Fig. 39: Checking For A Short Between Passenger Safety Belt Retractor Pretensioner Circuits

Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger safety belt retractor pretensioner C3336, circuit 1081 (YE/RD), harness side and C3336, circuit 1082 (LB/BK), harness side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to J11.
NO : REPAIR circuits 1081 (YE/RD) and 1082 (LB/BK). Go to J13.

J5 CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b

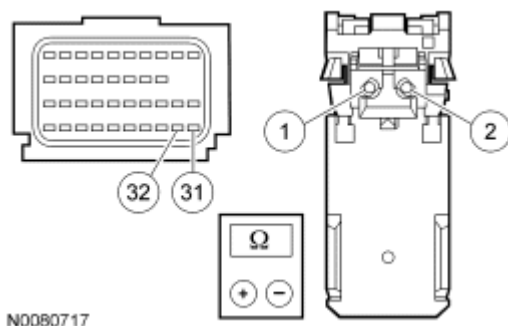


Fig. 40: Checking Circuits 1079 (LG/RD) & 1080 (LG/BK) For An Open

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Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b, harness side and driver safety belt retractor pretensioner C3338, harness side using the following chart:

RCM	Circuit	Driver Safety Belt Retractor Pretensioner
C2041b-31	1079 (LG/RD)	C3338-2
C2041b-32	1080 (LG/BK)	C3338-1

- Are the resistances less than 0.5 ohm?

YES : Go to J11.

NO : REPAIR circuit 1079 (LG/RD) or 1080 (LG/BK). Go to J13.

J6 CHECK CIRCUITS 1081 (YE/RD) AND 1082 (LB/BK) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b

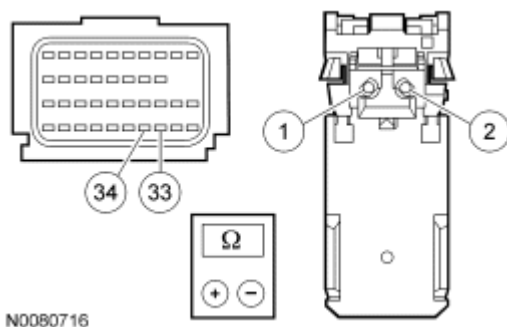


Fig. 41: Checking Circuits 1081 (YE/RD) & 1082 (LB/BK) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b, harness side and passenger safety belt retractor pretensioner C3336, harness side using the following chart:

RCM	Circuit	Passenger Safety Belt Retractor Pretensioner

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C2041b-33	1081 (YE/RD)	C3336-2
C2041b-34	1082 (LB/BK)	C3336-1

- **Are the resistances less than 0.5 ohm?**

YES : Go to J11.

NO : REPAIR circuit 1081 (YE/RD) or 1082 (LB/BK). Go to J13.

J7 CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

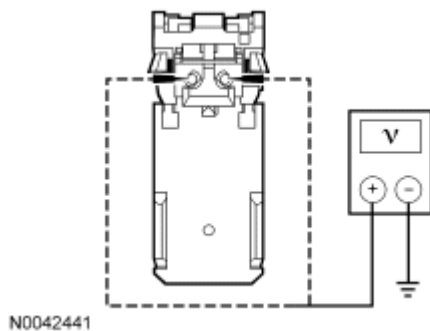


Fig. 42: Checking Circuits 1079 (LG/RD) & 1080 (LG/BK) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver safety belt retractor pretensioner:
 - C3338-2, circuit 1079 (LG/RD), harness side and ground.
 - C3338-1, circuit 1080 (LG/BK), harness side and ground.
- **Is voltage present on either circuit?**

YES : REPAIR circuit 1079 (LG/RD) or circuit 1080 (LG/BK). Go to J13.

NO : Go to J11.

J8 CHECK CIRCUITS 1081 (YE/RD) AND 1082 (LB/BK) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool

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- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

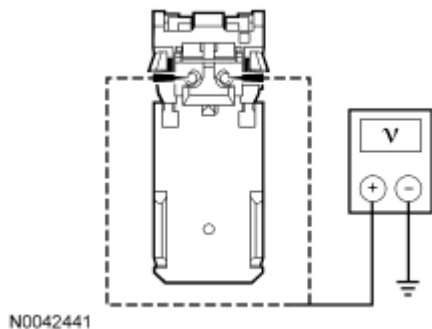


Fig. 43: Checking Circuits 1081 (YE/RD) & 1082 (LB/BK) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger safety belt retractor pretensioner:
 - C3336-1, circuit 1082 (LB/BK), harness side and ground.
 - C3336-2, circuit 1081 (YE/RD), harness side and ground.
- **Is voltage present on either circuit?**
YES : REPAIR circuit 1081 (YE/RD) or 1082 (LB/BK). Go to J13.
NO : Go to J11.

J9 CHECK CIRCUITS 1079 (LG/RD) AND 1080 (LG/BK) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b

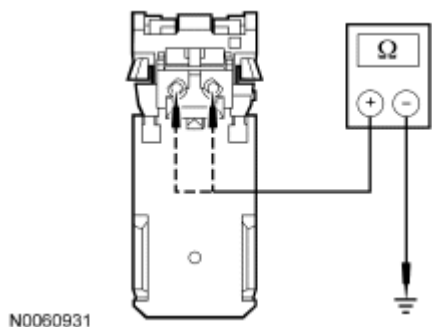


Fig. 44: Checking Circuits 1079 (LG/RD) & 1080 (LG/BK) For A Short To Ground
Courtesy of FORD MOTOR CO.

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- Measure the resistance between driver safety belt retractor pretensioner:
 - C3338-2, circuit 1079 (LG/RD), harness side and ground.
 - C3338-1, circuit 1080 (LG/BK), harness side and ground.

- **Are the resistances greater than 10,000 ohms?**

YES : Go to J11.

NO : REPAIR circuit 1079 (LG/RD) or 1080 (LG/BK). Go to J13.

J10 CHECK CIRCUITS 1081 (YE/RD) AND 1082 (LB/BK) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: Passenger Safety Belt Retractor Pretensioner Restraint Diagnostic System Tool
- Disconnect: RCM C2041a and C2041b

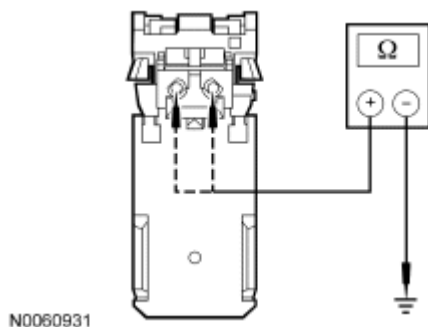


Fig. 45: Checking Circuits 1081 (YE/RD) & 1082 (LB/BK) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger safety belt retractor pretensioner:
 - C3336-2, circuit 1081 (YE/RD), harness side and ground.
 - C3336-1, circuit 1082 (LB/BK), harness side and ground.

- **Are the resistances greater than 10,000 ohms?**

YES : Go to J11.

NO : REPAIR circuit 1081 (YE/RD) or 1082 (LB/BK). Go to J13.

J11 CONFIRM THE RCM FAULT

NOTE: Make sure the safety belt retractor 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 Retractor Pretensioner Restraint System Diagnostic Tools

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- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2292 Fault PIDs
 - Refer to PID list in Normal Operation to view B2292 fault PIDs.
- **Does the original on-demand DTC B2292 fault PID indicate a fault?**
YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to J13.

J12 CHECK FOR AN INTERMITTENT FAULT

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: The Affected Safety Belt Retractor Pretensioner C3338 (Driver) C3336 (Passenger)
- Connect: Restraint System Diagnostic Tool 418-F395 to the Affected Safety Belt Retractor Pretensioner C3338 (Driver) C3336 (Passenger)
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2292 Fault PIDs
 - Refer to PID list in Normal Operation to view B2292 fault PIDs.
- **Do any on-demand DTC B2292 fault PIDs indicate a fault?**
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 retractor 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 2292_31_OD (Pretensioner Circuit Resistance Low, Front Driver Side), go to J3.

For 2292_30_OD (Pretensioner Circuit Open, Front Driver Side), go to J5.

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For 2292_29_OD (Pretensioner Circuit Short to Battery, Front Driver Side), go to J7.

For 2292_28_OD (Pretensioner Circuit Short to Ground, Front Driver Side), go to J9.

For 2292_27_OD (Pretensioner Circuit Resistance Low, Front Passenger Side), go to J4.

For 2292_26_OD (Pretensioner Circuit Open, Front Passenger Side), go to J6.

For 2292_25_OD (Pretensioner Circuit Short to Battery, Front Passenger Side), go to J8.

For 2292_24_OD (Pretensioner Circuit Short to Ground, Front Passenger Side), 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to J13.

J13 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test K: LFC 19 and 21/DTC B2293 - Restraint System - Airbag Fault

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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).

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

Fault PIDs^a	Description	Fault Trigger Condition
2293_16_OD and 2293_16_CM	Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Passenger Side	When the restraints control module (RCM) measures resistance less than 0.9 ohm between the passenger air bag loop circuits, a fault will be indicated.
2293_17_OD and 2293_17_CM	Air Bag Circuit Open - Loop No. 2, Front Passenger Side	When the RCM measures resistance greater than 5 ohms between the passenger air bag loop circuits, a fault will be indicated.
2293_18_OD and 2293_18_CM	Air Bag Circuit Short to Battery - Loop No. 2, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger air bag loop circuits, a fault will be indicated.
2293_19_OD and 2293_19_CM	Air Bag Circuit Short to Ground - Loop No. 2, Front Passenger Side	When the RCM senses a short to ground on either of the passenger air bag loop circuits, a fault will be indicated.
2293_20_OD and 2293_20_CM	Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Driver Side	When the RCM measures resistance less than 0.9 ohm between the driver air bag loop circuits, a fault will be indicated.
2293_21_OD and 2293_21_CM	Air Bag Circuit Open - Loop No. 2, Front Driver Side	When the RCM measures resistance greater than 5 ohms between the driver air bag loop circuits, a fault will be indicated.
2293_22_OD and 2293_22_CM	Air Bag Circuit Short to Battery - Loop No. 2, Front Driver Side	When the RCM senses a short to voltage on either of the driver air bag loop circuits, a fault will be indicated.
2293_23_OD and 2293_23_CM	Air Bag Circuit Short to Ground - Loop No. 2, Front Driver Side	When the RCM senses a short to ground on either of the driver air bag loop circuits, a fault will be indicated.
	Air Bag Inflator Circuit Resistance	When the RCM measures resistance less than 0.9 ohm

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2293_24_OD and 2293_24_CM	Low - Loop No. 1, Front Passenger Side	between the passenger air bag loop circuits, a fault will be indicated.
2293_25_OD and 2293_25_CM	Air Bag Circuit Open - Loop No. 1, Front Passenger Side	When the RCM measures resistance greater than 5 ohms between the passenger air bag loop circuits, a fault will be indicated.
2293_26_OD and 2293_26_CM	Air Bag Circuit Short to Battery - Loop No. 1, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger air bag loop circuits, a fault will be indicated.
2293_27_OD and 2293_27_CM	Air Bag Circuit Short to Ground - Loop No. 1, Front Passenger Side	When the RCM senses a short to ground on either of the passenger air bag loop circuits, a fault will be indicated.
2293_28_OD and 2293_28_CM	Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Driver Side	When the RCM measures resistance less than 0.9 ohm between the driver air bag loop circuits, a fault will be indicated.
2293_29_OD and 2293_29_CM	Air Bag Circuit Open - Loop No. 1, Front Driver Side	When the RCM measures resistance greater than 5 ohms between the driver air bag loop circuits, a fault will be indicated.
2293_30_OD and 2293_30_CM	Air Bag Circuit Short to Battery - Loop No. 1, Front Driver Side	When the RCM senses a short to voltage on either of the driver air bag loop circuits, a fault will be indicated.
2293_31_OD and 2293_31_CM	Air Bag Circuit Short to Ground - Loop No. 1, Front Driver Side	When the RCM senses a short to ground on either of the driver air bag loop circuits, a fault will be indicated.

^a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2293. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2293.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Clockspring
- Driver/passenger air bag module

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- RCM

PINPOINT TEST K: LFC 19 AND 21/DTC B2293 - RESTRAINT SYSTEM - AIRBAG FAULT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

K1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2293 Fault PIDs
 - Refer to PID list in Normal Operation to view B2293 fault PIDs.
- **Do any on-demand DTC B2293 fault PIDs indicate a fault?**

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.

K2 CHECK THE DRIVER AND THE PASSENGER AIR BAG MODULES

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and

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Repowering.

- If the fault PID was reported for the driver air bag module:
 - remove the driver air bag module. Refer to **Driver Air Bag Module**.
 - connect Restraint System Diagnostic Tool 418-F395 (2 required) to the driver air bag module loop 1 and loop 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2293 Fault PIDs
 - Refer to PID list in Normal Operation to view B2293 fault PIDs.
- **Do any on-demand DTC B2293 fault PIDs indicate a fault?**
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 2293_31_OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Driver Side), go to K3.

For 2293_30_OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Driver Side), go to K5.

For 2293_29_OD (Air Bag Circuit Open - Loop No. 1, Front Driver Side), go to K7.

For 2293_28_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Driver Side), go to K11.

For 2293_27_OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Passenger Side), go to K14.

For 2293_26_OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Passenger Side), go to K15.

For 2293_25_OD (Air Bag Circuit Open - Loop No. 1, Front Passenger Side), go to K16.

For 2293_24_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Passenger Side), go to K18.

For 2293_23_OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Driver Side), go to K20.

For 2293_22_OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Driver Side), go to K22.

For 2293_21_OD (Air Bag Circuit Open - Loop No. 2, Front Driver Side), go to K24.

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For 2293_20_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Driver Side), go to K28.

For 2293_19_OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Passenger Side), go to K31.

For 2293_18_OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Passenger Side), go to K32.

For 2293_17_OD (Air Bag Circuit Open - Loop No. 2, Front Passenger Side), go to K33.

For 2293_16_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Passenger Side), 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**. 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**. Go to K39.

K3 CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO GROUND BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: RCM C2041a and C2041b
- Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool

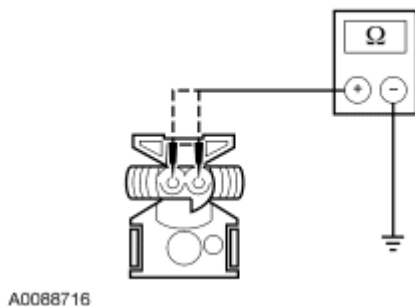


Fig. 46: Checking Circuits 614 (GY/OG) & 615 (GY/WH) For A Short To Ground Between RCM & Driver Air Bag Module Loop 1
Courtesy of FORD MOTOR CO.

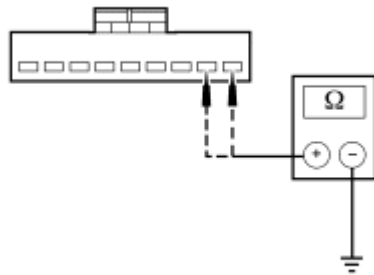
- Measure the resistance between driver air bag module:
 - loop 1 electrical connector, circuit 614 (GY/OG), harness side and ground.
 - loop 1 electrical connector, circuit 615 (GY/WH), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**

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 CLOCKSPring

- Disconnect: Clockspring C2274



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Fig. 47: Checking Circuits 614 (GY/OG) & 615 (GY/WH) For A Short To Ground Between RCM & Clockspring

Courtesy of FORD MOTOR CO.

- Measure the resistance between clockspring:
 - C2274-1, circuit 614 (GY/OG), harness side and ground.
 - C2274-2, circuit 615 (GY/WH), harness side and ground.

- **Are the resistances greater than 10,000 ohms?**

YES : INSTALL a new clockspring. REFER to **Clockspring**. 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.

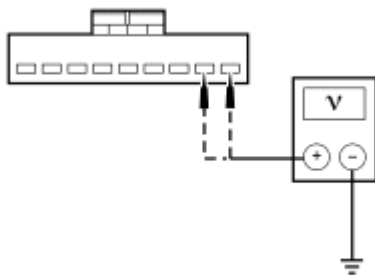
K5 CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Measure the voltage between driver air bag module:
 - loop 1 electrical connector, circuit 614 (GY/OG), harness side and ground.

- loop 1 electrical connector, circuit 615 (GY/WH), harness side and ground.
- **Is voltage present on either circuit?**
YES : Go to K6.
NO : Go to K37.

K6 CHECK CIRCUITS 614 (GY/OG) AND 615 (GY/WH) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND CLOCKSPrING

- Key in OFF position.
- Disconnect: Clockspring C2274
- Key in ON position.



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Fig. 48: Checking Circuits 614 (GY/OG) & 615 (GY/WH) For A Short To Voltage Between RCM & Clockspring

Courtesy of FORD MOTOR CO.

- Measure the voltage between clockspring:
 - C2274-1, circuit 614 (GY/OG), harness side and ground.
 - C2274-2, circuit 615 (GY/WH), harness side and ground.
- **Is voltage present on either circuit?**
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 614 (GY/OG) or 615 (GY/WH). Go to K39.

NO : INSTALL a new clockspring. REFER to **Clockspring**. Go to K39.

K7 CHECK FOR AN OPEN ON CIRCUIT 614 (GY/OG) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b

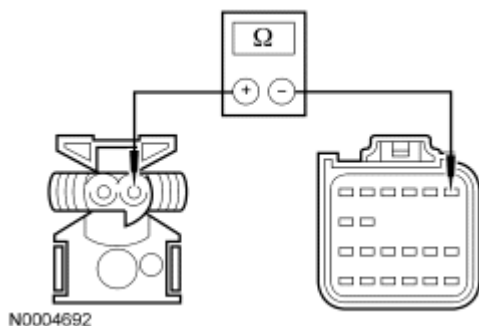


Fig. 49: Checking For An Open On Circuit 614 (GY/OG) Between RCM & Driver Air Bag Module Loop 1
 Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-1, circuit 614 (GY/OG), harness side and driver air bag module loop 1 electrical connector, circuit 614 (GY/OG), harness side.
- **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 CLOCKSPrING

- Disconnect: Clockspring C2274

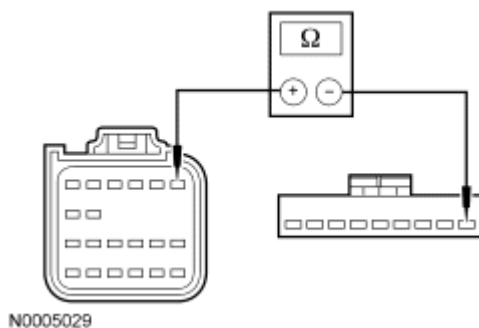


Fig. 50: Checking For An Open On Circuit 614 (GY/OG) Between RCM & Clockspring
 Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-1, circuit 614 (GY/OG), harness side and clockspring C2274-1, circuit 614 (GY/OG), harness side.
- **Is the resistance less than 0.5 ohm?**
 YES : INSTALL a new clockspring. REFER to **Clockspring**. Go to K39.
 NO : REPAIR circuit 614 (GY/OG). Go to K39.

K9 CHECK FOR AN OPEN ON CIRCUIT 615 (GY/WH) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 1

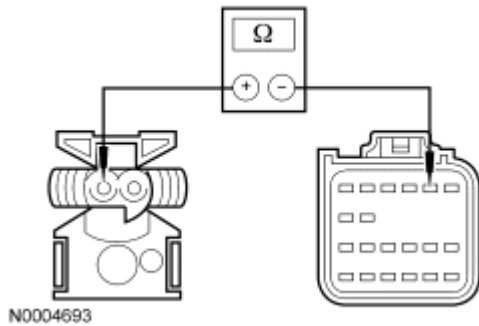


Fig. 51: Checking For An Open On Circuit 615 (GY/WH) Between RCM & Driver Air Bag Module Loop 1
 Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-2, circuit 615 (GY/WH), harness side and driver air bag module loop 1 electrical connector, circuit 615 (GY/WH), harness side.
- **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 CLOCKSPRING

- Disconnect: Clockspring C2274

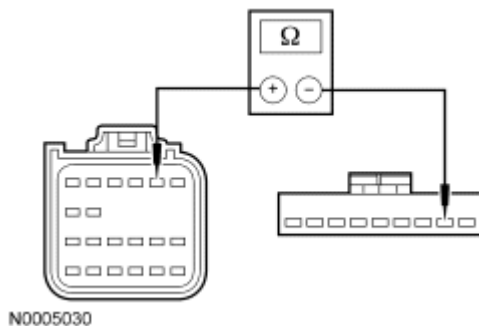


Fig. 52: Checking For An Open On Circuit 615 (GY/WH) Between RCM & Clockspring
 Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-2, circuit 615 (GY/WH), harness side and clockspring C2274-2, circuit 615 (GY/WH), harness side.
- **Is the resistance less than 0.5 ohm?**
 YES : INSTALL a new clockspring. REFER to **Clockspring**. Go to K39.
 NO : REPAIR circuit 615 (GY/WH). Go to K39.

K11 CHECK FOR A SHORT BETWEEN DRIVER AIR BAG LOOP 1 CIRCUITS 614 (GY/OG) AND 615 (GY/WH)

- Key in OFF position.

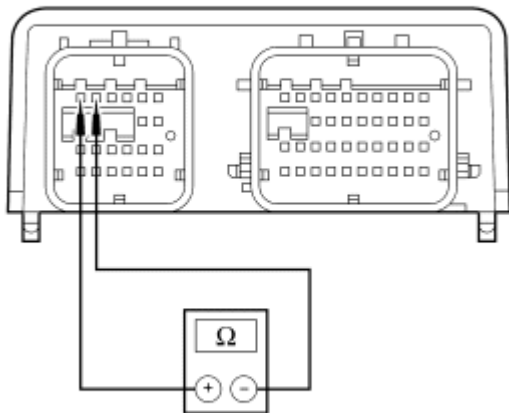
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- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Air Bag Module Loop 1 Restraint System Diagnostic Tool
- Measure the resistance between driver air bag module loop 1 electrical connector, circuit 614 (GY/OG), harness side and circuit 615 (GY/WH), harness side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to K37.
NO : Go to K12.

K12 CHECK THE RCM FOR LOW RESISTANCE

- Disconnect: RCM C2041a and C2041b



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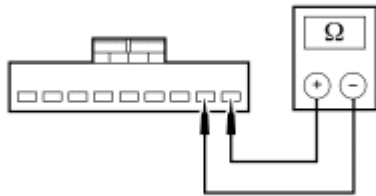
Fig. 53: Measuring Resistance Between RCM Circuit 614 (GY/OG) And Circuit 615 (GY/WH)

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a pin 1, component side and pin 2, component side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to K13.
NO : Go to K37.

K13 CHECK FOR A SHORT BETWEEN CIRCUITS 614 (GY/OG) AND 615 (GY/WH)

- Connect: RCM C2041a and C2041b
- Disconnect: Clockspring C2274



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Fig. 54: Checking For A Short Between Circuits 614 (GY/OG) & 615 (GY/WH)
Courtesy of FORD MOTOR CO.

- Measure the resistance between clockspring C2274-1, circuit 614 (GY/OG), harness side and C2274-2, circuit 615 (GY/WH), harness side.
- **Is the resistance greater than 10,000 ohms?**
YES : INSTALL a new clockspring. REFER to **Clockspring**. Go to K39.
NO : REPAIR circuits 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 PASSENGER AIR BAG MODULE LOOP 1

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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.
 - C2041a-4, circuit 616 (PK/BK), harness side and ground.
- **Are the resistances greater than 10,000 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 PASSENGER AIR BAG MODULE LOOP 1

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b

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- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

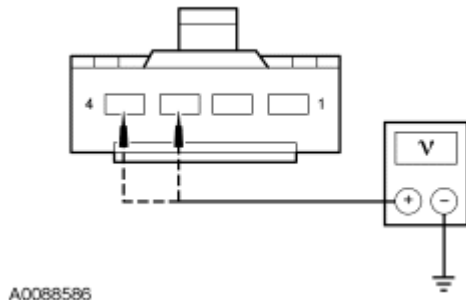


Fig. 55: Checking Circuits 607 (LB/OG) & 616 (PK/BK) For A Short To Voltage Between RCM & Passenger Air Bag Module Loop 1
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger air bag module:
 - C256-3, circuit 607 (LB/OG), harness side and ground.
 - C256-4, circuit 616 (PK/BK), harness side and ground.
- **Is voltage present on either circuit?**
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 607 (LB/OG) or 616 (PK/BK). Go to K39.

NO : Go to K37.

K16 CHECK FOR AN OPEN ON CIRCUIT 607 (LB/OG) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b

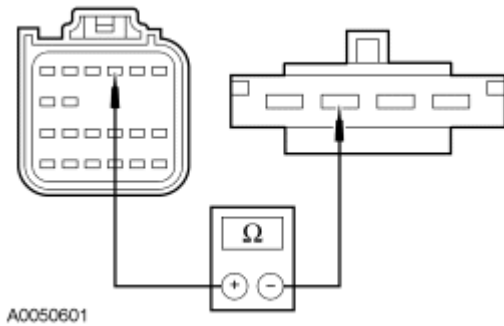


Fig. 56: Checking For An Open On Circuit 607 (LB/OG) Between RCM & Passenger Air Bag Module Loop 1

Courtesy of FORD MOTOR CO.

- 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.

- **Is the resistance less than 0.5 ohm?**

YES : Go to K17.

NO : REPAIR circuit 607 (LB/OG). Go to K39.

K17 CHECK FOR AN OPEN ON CIRCUIT 616 (PK/BK) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 1

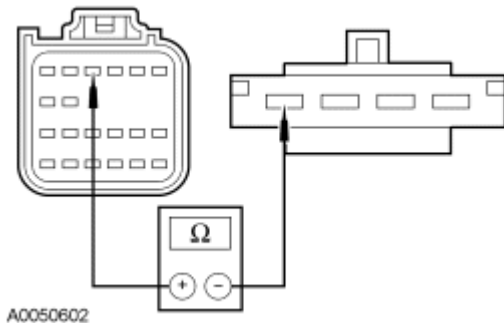


Fig. 57: Checking For An Open On Circuit 616 (PK/BK) Between RCM & Passenger Air Bag Module Loop 1

Courtesy of FORD MOTOR CO.

- 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.

- **Is the resistance less than 0.5 ohm?**

YES : Go to K37.

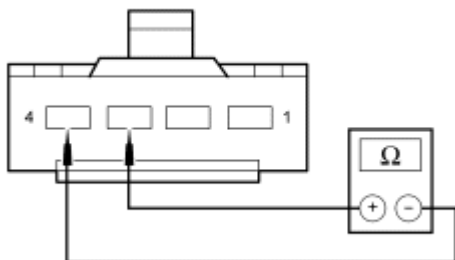
NO : REPAIR circuit 616 (PK/BK). Go to K39.

K18 CHECK FOR A SHORT BETWEEN PASSENGER AIR BAG MODULE LOOP 1 CIRCUITS 607 (LB/OG) AND 616 (PK/BK)

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and**

Repowering.

- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool



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Fig. 58: Checking For A Short Between Passenger Air Bag Module Loop 1 Circuits 607 (LB/OG) & 616 (PK/BK)

Courtesy of FORD MOTOR CO.

- 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.

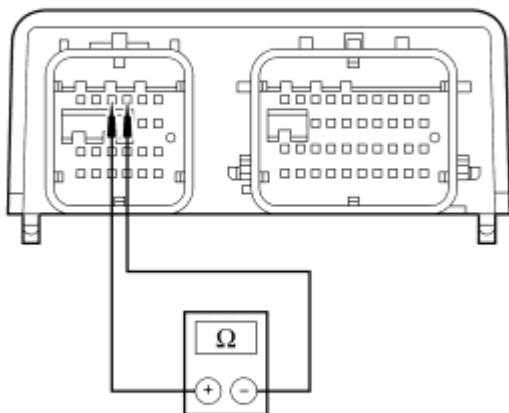
- **Is the resistance greater than 10,000 ohms?**

YES : Go to K37.

NO : Go to K19.

K19 CHECK THE RCM FOR LOW RESISTANCE

- Disconnect: RCM C2041a and C2041b



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Fig. 59: Checking RCM For Low Resistance
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a pin 3, component side and pin 4, component side.
- **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 DRIVER AIR BAG MODULE LOOP 2

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: RCM C2041a and C2041b
- Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool

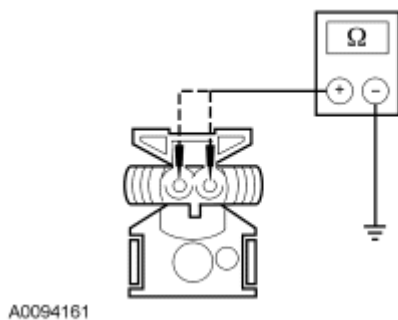
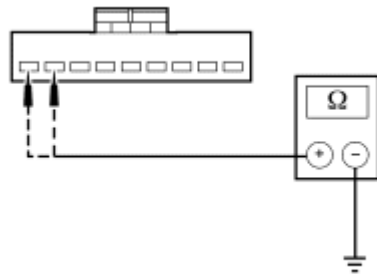


Fig. 60: Checking Circuits 1516 (YE/WH) & 1517 (RD/OG) For A Short To Ground Between RCM & Driver Air Bag Module Loop 2
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver air bag module:
 - loop 2 electrical connector, circuit 1516 (YE/WH), harness side and ground.
 - loop 2 electrical connector, circuit 1517 (RD/OG), harness side and ground.
- **Are the resistances greater than 10,000 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 CLOCKSPrING

- Disconnect: Clockspring C2274



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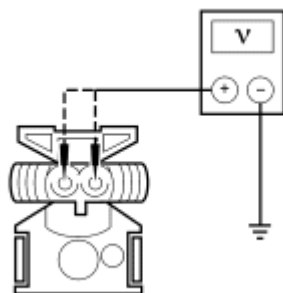
Fig. 61: Checking Circuits 1516 (YE/WH) & 1517 (RD/OG) For A Short To Ground Between RCM & Clockspring
Courtesy of FORD MOTOR CO.

- Measure the resistance between clockspring:
 - C2274-8, circuit 1516 (YE/WH), harness side and ground.
 - C2274-9, circuit 1517 (RD/OG), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**
YES : INSTALL a new clockspring. REFER to **Clockspring**. 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 DRIVER AIR BAG MODULE LOOP 2

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.



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Fig. 62: Checking Circuits 1516 (YE/WH) & 1517 (RD/OG) For A Short To Voltage Between RCM & Driver Air Bag Module Loop 2
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver air bag module:
 - loop 2 electrical connector, circuit 1516 (YE/WH), harness side and ground.
 - loop 2 electrical connector, circuit 1517 (RD/OG), harness side and ground.

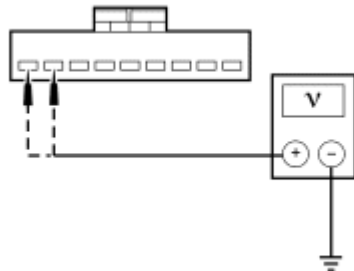
Is voltage present on either circuit?

YES : Go to K23.

NO : Go to K37.

K23 CHECK CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND CLOCKSPrING

- Key in OFF position.
- Disconnect: Clockspring C2274
- Key in ON position.



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Fig. 63: Checking Circuits 1516 (YE/WH) & 1517 (RD/OG) For A Short To Voltage Between RCM & Clockspring
Courtesy of FORD MOTOR CO.

- Measure the voltage between clockspring connector:
 - C2274-8, circuit 1516 (YE/WH), harness side and ground.
 - C2274-9, circuit 1517 (RD/OG), harness side and ground.

Is voltage present on either circuit?

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.

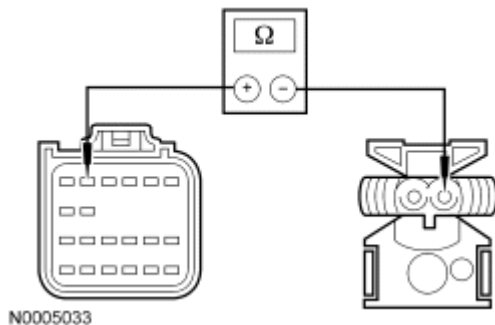
REPAIR circuit 1516 (YE/WH) or 1517 (RD/OG). Go to K39.

NO : **INSTALL** a new clockspring. REFER to **Clockspring**. Go to K39.

K24 CHECK FOR AN OPEN ON CIRCUIT 1516 (YE/WH) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2

- Key in OFF position.

- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b



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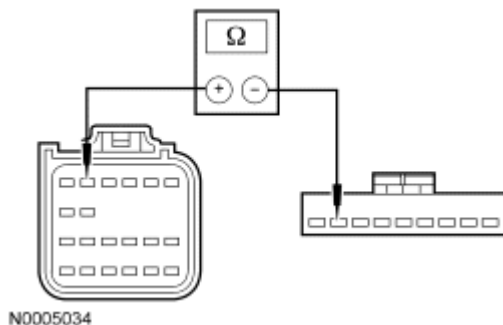
Fig. 64: Checking For An Open On Circuit 1516 (YE/WH) Between RCM & Driver Air Bag Module Loop 2

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-5, circuit 1516 (YE/WH), harness side and driver air bag module loop 2, circuit 1516 (YE/WH), harness side.
- **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 CLOCKSPrING

- Disconnect: Clockspring C2274



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Fig. 65: Checking For An Open On Circuit 1516 (YE/WH) Between RCM & Clockspring
 Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-5, circuit 1516 (YE/WH), harness side and clockspring C2274-8, circuit 1516 (YE/WH), harness side.
- **Is the resistance less than 0.5 ohm?**
 YES : INSTALL a new clockspring. REFER to **Clockspring**. Go to K39.

NO : REPAIR circuit 1516 (YE/WH). Go to K39.

K26 CHECK FOR AN OPEN ON CIRCUIT 1517 (RD/OG) BETWEEN THE RCM AND DRIVER AIR BAG MODULE LOOP 2

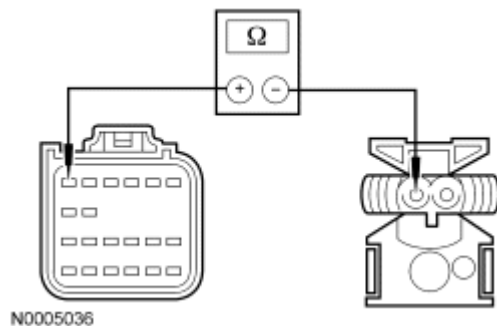


Fig. 66: Checking For An Open On Circuit 1517 (RD/OG) Between RCM & Driver Air Bag Module Loop 2

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-6, circuit 1517 (RD/OG), harness side and driver air bag module loop 2, circuit 1517 (RD/OG), harness side.
- **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 CLOCKSPRING

- Disconnect: Clockspring C2274

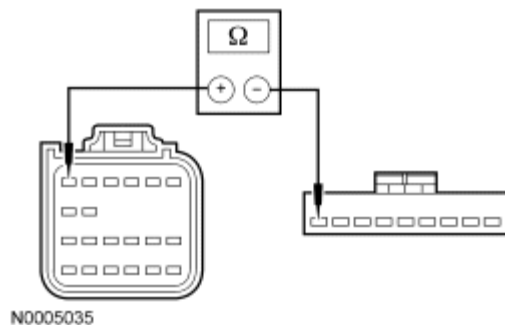


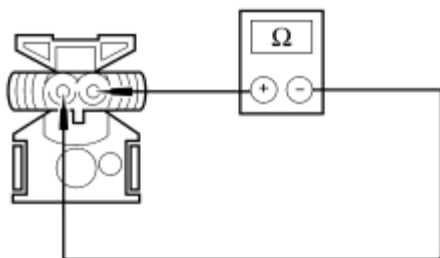
Fig. 67: Checking For An Open On Circuit 1517 (RD/OG) Between RCM & Clockspring

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a-6, circuit 1517 (RD/OG), harness side and clockspring C2274-9, circuit 1517 (RD/OG), harness side.
- **Is the resistance less than 0.5 ohm?**
YES : INSTALL a new clockspring. REFER to **Clockspring**. Go to K39.
NO : REPAIR circuit 1517 (RD/OG). Go to K39.

K28 CHECK FOR A SHORT BETWEEN DRIVER AIR BAG MODULE LOOP 2 CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG)

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Air Bag Module Loop 2 Restraint System Diagnostic Tool



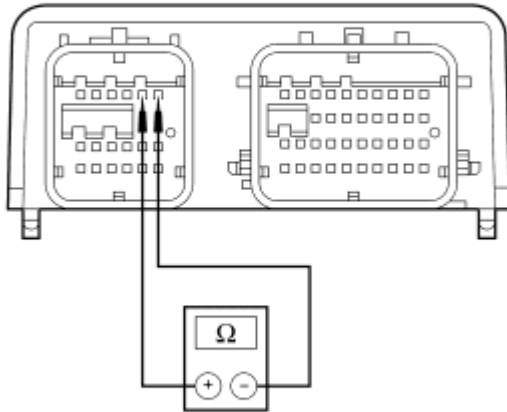
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Fig. 68: Checking For A Short Between Driver Air Bag Module Loop 2 Circuits 1516 (YE/WH) & 1517 (RD/OG)
 Courtesy of FORD MOTOR CO.

- Measure the resistance between driver air bag module loop 2 electrical connector, circuit 1516 (YE/WH), harness side, and circuit 1517 (RD/OG), harness side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to K37.
NO : Go to K29.

K29 CHECK THE RCM FOR LOW RESISTANCE

- Disconnect: RCM C2041a and C2041b



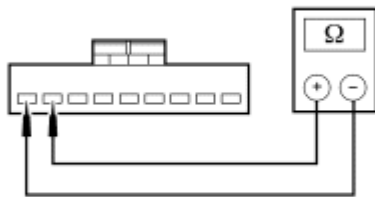
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Fig. 69: Checking RCM For Low Resistance
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a pin 5, component side and pin 6, component side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to K30.
NO : Go to K37.

K30 CHECK FOR A SHORT BETWEEN CIRCUITS 1516 (YE/WH) AND 1517 (RD/OG)

- Connect: RCM C2041a and C2041b
- Disconnect: Clockspring C2274



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Fig. 70: Checking For A Short Between Circuits 1516 (YE/WH) & 1517 (RD/OG)
Courtesy of FORD MOTOR CO.

- Measure the resistance between clockspring C2274-8, circuit 1516 (YE/WH), harness side and

C2274-9, circuit 1517 (RD/OG), harness side.

- **Is the resistance greater than 10,000 ohms?**

YES : INSTALL a new clockspring. REFER to Clockspring. 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 PASSENGER AIR BAG MODULE LOOP 2

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b

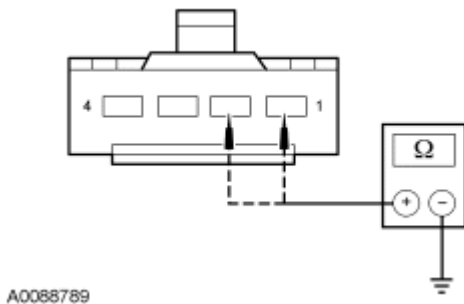


Fig. 71: Checking Circuits 1518 (RD/WH) & 1519 (LG/RD) For A Short To Ground Between RCM & Passenger Air Bag Module Loop 2
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger air bag module:
 - C256-1, circuit 1518 (RD/WH), harness side and ground.
 - C256-2, circuit 1519 (LG/RD), harness side and ground.
- **Are the resistances greater than 10,000 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 PASSENGER AIR BAG MODULE LOOP 2

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b

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- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Measure the voltage between passenger air bag module:
 - C256-1, circuit 1518 (RD/WH), harness side and ground.
 - C256-2, circuit 1519 (LG/RD), harness side and ground.
- **Is voltage present on either circuit?**
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 1518 (RD/WH) or 1519 (LG/RD). Go to K39.

NO : Go to K37.

K33 CHECK FOR AN OPEN ON CIRCUIT 1518 (RD/WH) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE LOOP 2

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b

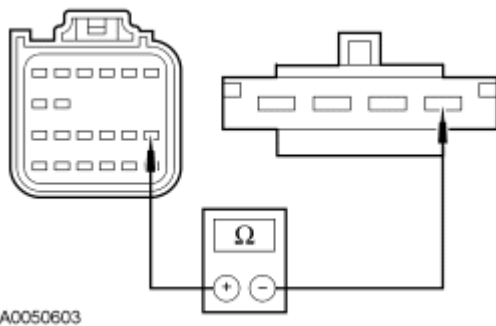


Fig. 72: Checking For An Open On Circuit 1518 (RD/WH) Between RCM & Passenger Air Bag Module Loop 2

Courtesy of FORD MOTOR CO.

- 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.
- **Is the resistance less than 0.5 ohm?**
YES : Go to K34.

NO : REPAIR circuit 1518 (RD/WH). Go to K39.

K34 CHECK FOR AN OPEN ON CIRCUIT 1519 (LG/RD) BETWEEN THE RCM AND PASSENGER AIR BAG MODULE

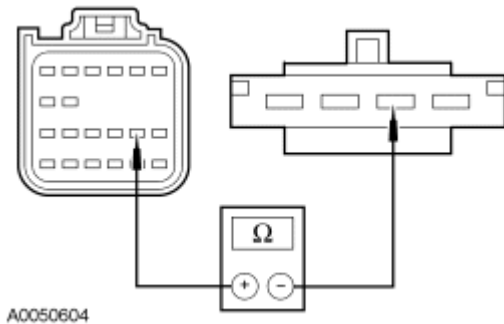


Fig. 73: Checking For An Open On Circuit 1519 (LG/RD) Between RCM & Passenger Air Bag Module

Courtesy of FORD MOTOR CO.

- 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.

- **Is the resistance less than 0.5 ohm?**

YES : Go to K37.

NO : REPAIR circuit 1519 (LG/RD). Go to K39.

K35 CHECK FOR A SHORT BETWEEN PASSENGER AIR BAG MODULE LOOP 2 CIRCUITS 1518 (RD/WH) AND 1519 (LG/RD)

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Air Bag Module Restraint System Diagnostic Tool

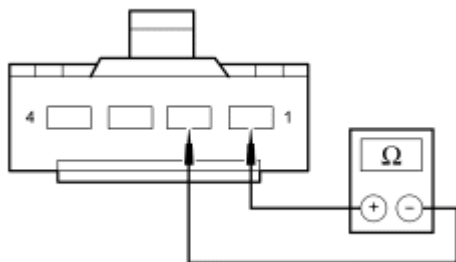


Fig. 74: Checking For A Short Between Passenger Air Bag Module Loop 2 Circuits 1518 (RD/WH) & 1519 (LG/RD)

Courtesy of FORD MOTOR CO.

- 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.

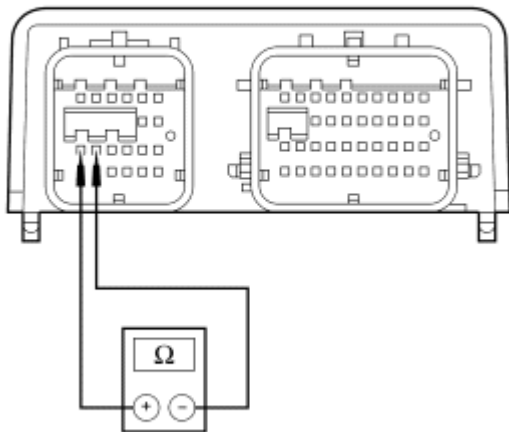
- **Is the resistance greater than 10,000 ohms?**

YES : Go to K37.

NO : Go to K36.

K36 CHECK THE RCM FOR LOW RESISTANCE

- Disconnect: RCM C2041a and C2041b



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Fig. 75: Checking RCM For Low Resistance
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041a pin 13, component side and pin 14, component side.
- **Is the resistance greater than 10,000 ohms?**
YES : REPAIR circuits 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2293 Fault PIDs
 - Refer to PID list in Normal Operation to view B2293 fault PIDs.
- **Does the original on-demand DTC B2293 fault PID indicate a fault?**
YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to K39.
NO : Fault corrected. Go to K39.

K38 CHECK FOR AN INTERMITTENT FAULT

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- If the fault PID was reported for the driver air bag module:
 - remove the driver air bag module. Refer to **Driver Air Bag Module**.
 - connect restraint system diagnostic tools 418-F395 (2 required) to driver air bag module loop 1 and loop 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2293 Fault PIDs
 - Refer to PID list in Normal Operation to view B2293 fault PIDs.
- **Do any on-demand DTC B2293 fault PIDs indicate a fault?**
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 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, use the fault PIDs recorded and Go to the appropriate pinpoint test step.

For 2293_31_OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Driver Side), go to K3.

For 2293_30_OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Driver Side), go to K5.

For 2293_29_OD (Air Bag Circuit Open - Loop No. 1, Front Driver Side), go to K7.

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For 2293_28_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Driver Side), go to K11.

For 2293_27_OD (Air Bag Circuit Short to Ground - Loop No. 1, Front Passenger Side), go to K14.

For 2293_26_OD (Air Bag Circuit Short to Battery - Loop No. 1, Front Passenger Side), go to K15.

For 2293_25_OD (Air Bag Circuit Open - Loop No. 1, Front Passenger Side), go to K16.

For 2293_24_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 1, Front Passenger Side), go to K18.

For 2293_23_OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Driver Side), go to K20.

For 2293_22_OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Driver Side), go to K22.

For 2293_21_OD (Air Bag Circuit Open - Loop No. 2, Front Driver Side), go to K24.

For 2293_20_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Driver Side), go to K28.

For 2293_19_OD (Air Bag Circuit Short to Ground - Loop No. 2, Front Passenger Side), go to K31.

For 2293_18_OD (Air Bag Circuit Short to Battery - Loop No. 2, Front Passenger Side), go to K32.

For 2293_17_OD (Air Bag Circuit Open - Loop No. 2, Front Passenger Side), go to K33.

For 2293_16_OD (Air Bag Inflator Circuit Resistance Low - Loop No. 2, Front Passenger Side), 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). **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to K39.

K39 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).

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- If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test L: LFC 22 and 23/DTC B2295 - Restraint System - Side Airbag Fault

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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).

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

Fault PIDs ^a	Description	Fault Trigger Condition
2295_24_OD and 2295_24_CM	Side Air Bag Circuit Resistance Low, Front Passenger Side	When the restraints control module (RCM) measures less than 0.9 ohm between the passenger side air bag module circuits, a fault will be indicated.
2295_25_OD and 2295_25_CM	Side Air Bag Circuit Open, Front Passenger Side	When the RCM measures greater than 5 ohms between the passenger side air bag module circuits, a fault will be indicated.
2295_26_OD and 2295_26_CM	Side Air Bag Circuit Short to Ground, Front Passenger Side	When the RCM senses a short to ground on either of the passenger side air bag module circuits, a fault will be indicated.
2295_27_OD and 2295_27_CM	Side Air Bag Circuit Short to Battery, Front Passenger Side	When the RCM senses a short to voltage on either of the passenger side air bag module circuits, a fault will be indicated.

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2295_28_OD and 2295_28_CM	Side Air Bag Circuit Resistance Low, Front Driver Side	When the RCM measures less than 0.9 ohm between the driver side air bag module circuits, a fault will be indicated.
2295_29_OD and 2295_29_CM	Side Air Bag Circuit Open, Front Driver Side	When the RCM measures greater than 5 ohms between the driver side air bag module circuits, a fault will be indicated.
2295_30_OD and 2295_30_CM	Side Air Bag Circuit Short to Ground, Front Driver Side	When the RCM senses a short to ground on either of the driver side air bag module circuits, a fault will be indicated.
2295_31_OD and 2295_31_CM	Side Air Bag Circuit Short to Battery, Front Driver Side	When the RCM senses a short to voltage on either of the driver side air bag module circuits, a fault will be indicated.

^a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2295. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2295.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Seat side air bag module
- RCM

PINPOINT TEST L: LFC 22 AND 23/DTC B2295 - RESTRAINT SYSTEM - SIDE AIRBAG FAULT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this

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instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

L1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2295 Fault PIDs
 - Refer to PID list in Normal Operation to view B2295 fault PIDs.
- **Do any on-demand DTC B2295 fault PIDs indicate a fault?**

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 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 L16.

L2 CHECK THE DRIVER AND PASSENGER SEAT SIDE AIR BAG MODULES

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger)
- Connect: Restraint System Diagnostic Tool 418-133 to Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger)
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2295 Fault PIDs
 - Refer to PID list in Normal Operation to view B2295 fault PIDs.

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- **Do any on-demand DTC B2295 fault PIDs indicate a fault?**

YES : Using the fault PIDs recorded in Step L1, go to the appropriate pinpoint test step.

For 2295_31_OD (Side Air Bag Circuit Short to Battery, Front Driver Side), go to L3.

For 2295_30_OD (Side Air Bag Circuit Short to Ground, Front Driver Side), go to L4.

For 2295_29_OD (Side Air Bag Circuit Open, Front Driver Side), go to L5.

For 2295_28_OD (Side Air Bag Circuit Resistance Low, Front Driver Side), go to L7.

For 2295_27_OD (Side Air Bag Circuit Short to Battery, Front Passenger Side), go to L9.

For 2295_26_OD (Side Air Bag Circuit Short to Ground, Front Passenger Side), go to L10.

For 2295_25_OD (Side Air Bag Circuit Open, Front Passenger Side), go to L11.

For passenger seat side air bag module with a low resistance fault (2295_24_OD (Side Air Bag Circuit Resistance Low, Front Passenger Side), go to L13.

NO : REMOVE and INSPECT the seat side air bag module jumper harness for damage. If a concern is found, REPAIR the harness. If no concern 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**. Go to L17.

L3 CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

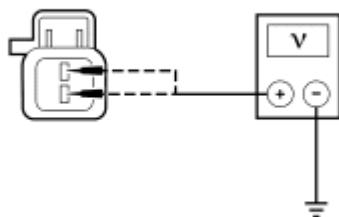


Fig. 76: Checking Circuits 1257 (WH/LB) & 1258 (RD) For A Short To Voltage Between RCM & Driver Seat Side Air Bag Module
Courtesy of FORD MOTOR CO.

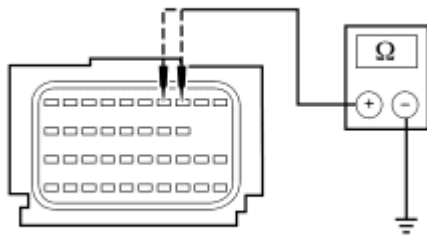
- Measure the voltage between driver seat side air bag module:
 - C367-1, circuit 1257 (WH/LB), harness side and ground.
 - C367-2, circuit 1258 (RD), harness side and ground.
- **Is voltage present on either circuit?**
YES : Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar.

REPAIR circuit 1257 (WH/LB) or 1258 (RD). Go to L17.

NO : Go to L15.

L4 CHECK CIRCUITS 1257 (WH/LB) AND 1258 (RD) FOR A SHORT TO GROUND BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b



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Fig. 77: Checking Circuits 1257 (WH/LB) & 1258 (RD) For A Short To Ground Between RCM & Driver Seat Side Air Bag Module
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM:
 - C2041b-3, circuit 1257 (WH/LB), harness side and ground.
 - C2041b-4, circuit 1258 (RD), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**

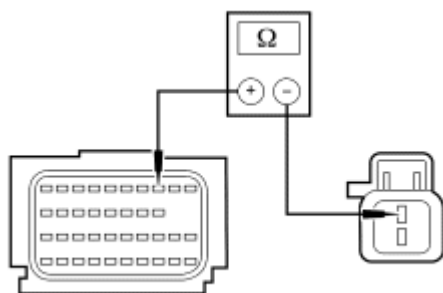
YES : Go to L15.

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 L17.

L5 CHECK FOR AN OPEN ON CIRCUIT 1257 (WH/LB) BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b



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Fig. 78: Checking Open Circuits 1257 (WH/LB) Between RCM And Driver Seat Side Air Bag Module

Courtesy of FORD MOTOR CO.

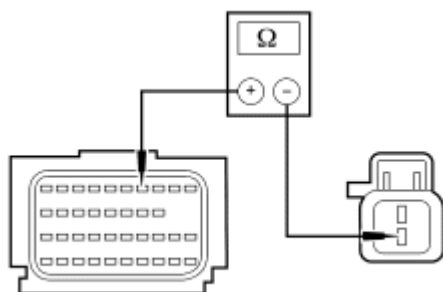
- Measure the resistance between RCM C2041b-3, circuit 1257 (WH/LB), harness side and driver seat side air bag module C367-1 (or driver seat side air bag bridge resistor C3108-1), circuit 1257 (WH/LB), harness side.

- **Is the resistance less than 0.5 ohm?**

YES : Go to L6.

NO : REPAIR circuit 1257 (WH/LB). Go to L17.

L6 CHECK FOR AN OPEN ON CIRCUIT 1258 (RD) BETWEEN THE RCM AND DRIVER SEAT SIDE AIR BAG MODULE



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Fig. 79: Checking Open Circuit 1258 (RD) Between RCM And Driver Seat Side Air Bag Module

Courtesy of FORD MOTOR CO.

- 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.
- **Is the resistance less than 0.5 ohm?**
YES : Go to L15.
NO : REPAIR circuit 1258 (RD). Go to L17.

L7 CHECK FOR A SHORT BETWEEN DRIVER SEAT SIDE AIR BAG MODULE CIRCUITS 1257 (WH/LB) AND 1258 (RD)

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Seat Side Air Bag Module Restraint System Diagnostic Tool
- Measure the resistance between driver seat side air bag module C367-1, circuit 1257 (WH/LB), harness side and C367-2, circuit 1258 (RD), harness side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to L15.
NO : Go to L8.

L8 CHECK THE RCM FOR LOW RESISTANCE

- Disconnect: RCM C2041a and C2041b

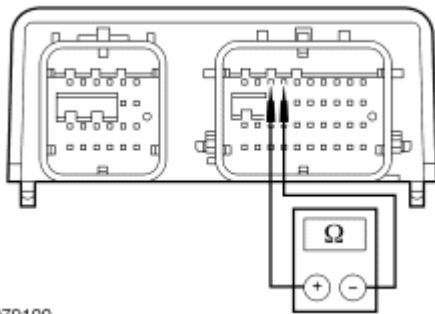


Fig. 80: Checking RCM For Low Resistance
Courtesy of FORD MOTOR CO.

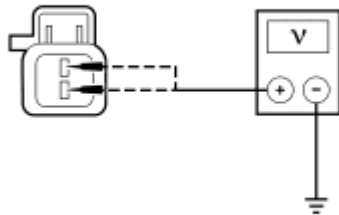
- Measure the resistance between RCM C2041b pin 3, component side and pin 4, component side.
- **Is the resistance greater than 10,000 ohms?**
YES : Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar.

REPAIR circuits 1257 (WH/LB) and 1258 (RD). Go to L17.

NO : Go to L15.

L9 CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO VOLTAGE BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.



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Fig. 81: Checking Circuits 1259 (WH/YE) & 1260 (BN/YE) For A Short To Voltage Between RCM & Passenger Seat Side Air Bag Module
Courtesy of FORD MOTOR CO.

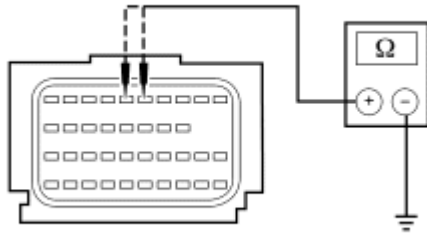
- Measure the voltage between passenger seat side air bag module:
 - C337-1, circuit 1259 (WH/YE), harness side and ground.
 - C337-2, circuit 1260 (BN/YE), harness side and ground.
- **Is voltage present on either circuit?**
YES : Due to the shorting bar feature in the electrical connector, the fault can exist in either circuit. Do not remove or defeat the shorting bar.

REPAIR circuit 1259 (WH/YE) or 1260 (BN/YE). Go to L17.

NO : Go to L15.

L10 CHECK CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE) FOR A SHORT TO GROUND BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b



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Fig. 82: Checking Circuits 1259 (WH/YE) & 1260 (BN/YE) For A Short To Ground Between RCM & Passenger Seat Side Air Bag Module
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM:
 - C2041b-5, circuit 1259 (WH/YE), harness side and ground.
 - C2041b-6, circuit 1260 (BN/YE), harness side and ground.

- **Are the resistances greater than 10,000 ohms?**

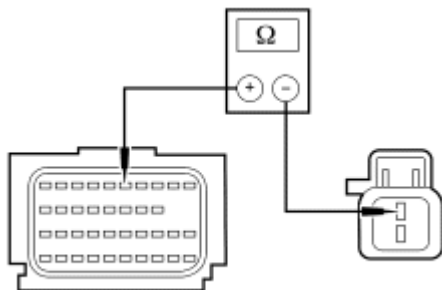
YES : Go to L15.

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 L17.

L11 CHECK FOR AN OPEN ON CIRCUIT 1259 (WH/YE) BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool
- Disconnect: RCM C2041a and C2041b



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Fig. 83: Checking Open Circuits 1259 (WH/YE) Between RCM And Passenger Seat Side Air Bag Module
Courtesy of FORD MOTOR CO.

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- Measure the resistance between RCM C2041b-5, circuit 1259 (WH/YE), harness side and passenger seat side air bag module C337-1, circuit 1259 (WH/YE), harness side.

- **Is the resistance less than 0.5 ohm?**

YES : Go to L12.

NO : REPAIR circuit 1259 (WH/YE). Go to L17.

L12 CHECK FOR AN OPEN ON CIRCUIT 1260 (BN/YE) BETWEEN THE RCM AND PASSENGER SEAT SIDE AIR BAG MODULE

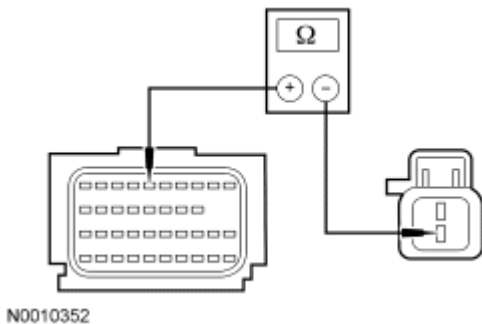


Fig. 84: Checking Open Circuit 1260 (BN/YE) Between RCM And Passenger Seat Side Air Bag Module

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-6, circuit 1260 (BN/YE), harness side and passenger seat side air bag module C337-2, circuit 1260 (BN/YE), harness side.

- **Is the resistance less than 0.5 ohm?**

YES : Go to L15.

NO : REPAIR circuit 1260 (BN/YE). Go to L17.

L13 CHECK FOR A SHORT BETWEEN PASSENGER SEAT SIDE AIR BAG MODULE CIRCUITS 1259 (WH/YE) AND 1260 (BN/YE)

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool
- Measure the resistance between passenger seat side air bag module C337-1, circuit 1259 (WH/YE), harness side and C337-2, circuit 1260 (BN/YE), harness side.

- **Is the resistance greater than 10,000 ohms?**

YES : Go to L15.

NO : Go to L14.

L14 CHECK THE RCM FOR LOW RESISTANCE

- Disconnect: RCM C2041a and C2041b

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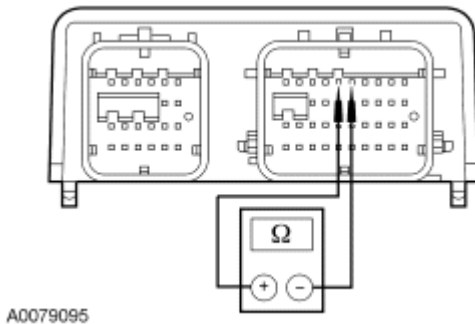


Fig. 85: Checking RCM For Low Resistance
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b pin 5, component side and pin 6, component side.
- **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 circuits 1259 (WH/YE) and 1260 (BN/YE). Go to L17.

NO : Go to L15.

L15 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 and Passenger Seat Side Air Bag Module Restraint System Diagnostic Tool
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2295 Fault PIDs
 - Refer to PID list in Normal Operation to view B2295 fault PIDs.
- **Does the original on-demand DTC B2295 fault PID indicate a fault?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. Go to L17.

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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to L17.

L16 CHECK FOR AN INTERMITTENT FAULT

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger)
- Connect: Restraint System Diagnostic Tool 418-133 to Affected Seat Side Air Bag Module C367 (Driver) or C337 (Passenger)
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2295 Fault PIDs
 - Refer to PID list in Normal Operation to view B2295 fault PIDs.
- **Do any on-demand DTC B2295 fault PIDs indicate a fault?**

YES : 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 L17.

If an intermittent concern **was not** found, USE the fault PIDs recorded and Go to the appropriate pinpoint test step.

For 2295_31_OD (Side Air Bag Circuit Short to Battery, Front Driver Side), go to L3.

For 2295_30_OD (Side Air Bag Circuit Short to Ground, Front Driver Side), go to L4.

For 2295_29_OD (Side Air Bag Circuit Open, Front Driver Side), go to L5.

For 2295_28_OD (Side Air Bag Circuit Resistance Low, Front Driver Side), go to L7.

For 2295_27_OD (Side Air Bag Circuit Short to Battery, Front Passenger Side), go to L9.

For 2295_26_OD (Side Air Bag Circuit Short to Ground, Front Passenger Side), go to L10.

For 2295_25_OD (Side Air Bag Circuit Open, Front Passenger Side), go to L11.

For passenger seat side air bag module with a low resistance fault (2295_24_OD (Side Air Bag Circuit Resistance Low, Front Passenger Side), go to L13.

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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to L17.

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L17 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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.

The RCM continuously monitors all of the impact sensor circuits. If the RCM detects one of the following faults on any of the impact sensor circuits, it will store DTC B2296 in memory and flash either lamp fault code (LFC) 42, 43 or 44 depending on the fault on the air bag warning indicator.

Fault PIDs ^a	Description	Fault Trigger Condition
2296_18_OD and 2296_18_CM	Driver/Center Front Crash Sensor Internal Fault	When the restraints control module (RCM) senses a internal failure with the driver/center front impact sensor, a fault will be indicated.
2296_19_OD and 2296_19_CM	Driver/Center Front Crash Sensor Mount/Communication Fault	When the RCM is unable to communicate with the driver/center front impact sensor, a fault will be

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		indicated.
2296_28_OD and 2296_28_CM	Side Crash Sensor Internal Fault, Front Passenger Side	When the RCM senses an internal failure with the passenger side first row impact sensor, a fault will be indicated.
2296_29_OD and 2296_29_CM	Side Crash Sensor Mount or Communication Fault, Front Passenger Side	When the RCM is unable to communicate with the passenger side first row impact sensor, a fault will be indicated.
2296_30_OD and 2296_30_CM	Side Crash Sensor Internal Fault, Front Driver Side	When the RCM senses an internal failure with the driver/center front impact sensor, a fault will be indicated.
2296_31_OD and 2296_31_CM	Side Crash Sensor Mount or Communication Fault, Front Driver Side	When the RCM is unable to communicate with the driver side first row impact sensor, a fault will be indicated.

^a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2296. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2296.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Impact sensor
- Impact sensor mounting
- RCM

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

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- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

M1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Do any on-demand DTC B2296 fault PIDs indicate a fault?**

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 2296_31_OD (Side Crash Sensor Mount or Communication Fault, Front Driver Side), go to M2.

For 2296_30_OD (Side Crash Sensor Internal Fault, Front Driver Side), INSTALL a new driver side impact sensor. REFER to **Side Impact Sensor**. Go to M34.

For 2296_29_OD (Side Crash Sensor Mount or Communication Fault, Front Passenger Side), go to M12.

For 2296_28_OD (Side Crash Sensor Internal Fault, Front Passenger Side), INSTALL a new passenger side impact sensor. REFER to **Side Impact Sensor**. Go to M34.

For 2296_19_OD (Driver/Center Front Crash Sensor Mount/Communication Fault), go to M22.

For 2296_18_OD (Driver/Center Front Crash Sensor Internal Fault), INSTALL a new front impact severity sensor. REFER to **Front Impact Severity 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.

M2 INSPECT THE DRIVER SIDE IMPACT SENSOR MOUNTING AND MOUNTING SURFACE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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**.
- Visually inspect the driver side impact sensor and mounting surface for damage, corrosion or dirt.
- **Was a significant amount of corrosion or dirt found, the driver side impact sensor attached to the mounting surface incorrectly or was the driver side impact sensor bolt not fully seated and tightened correctly?**

YES : CLEAN, TIGHTEN bolt or REPAIR the mounting surface as necessary. REINSTALL the driver side impact sensor. Go to M34.

NO : Go to M3.

M3 INSTALL THE DRIVER SIDE IMPACT SENSOR AND CARRY OUT AN ON-DEMAND SELF TEST

- 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any on-demand B2296 fault PIDs for the driver side impact sensor indicating a fault?**

YES : Go to M4.

NO : Fault corrected. Go to M34.

M4 CHECK THE DRIVER SIDE IMPACT SENSOR GROUND CIRCUIT 1262 (BN/LG) FOR HIGH RESISTANCE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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 SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any on-demand B2296 fault PIDs for the driver side impact sensor indicating a fault?**
YES : Go to M6.
NO : Fault corrected. Go to M34.

M6 CHECK DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Disconnect: Driver Side Impact Sensor C3209
- Disconnect: RCM C2041a and C2041b

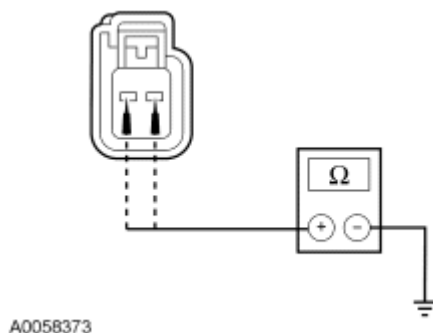


Fig. 86: Checking Driver Side Impact Sensor Circuits 1261 (WH/LG) & 1262 (BN/LG) For A Short To Ground

Courtesy of FORD MOTOR CO.

- Measure the resistance between driver side impact sensor :
 - C3209-2, circuit 1261 (WH/LG), harness side and ground.
 - C3209-1, circuit 1262 (BN/LG), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**
YES : Go to M7.

NO : REPAIR circuit 1261 (WH/LG) or 1262 (BN/LG). Go to M34.

M7 CHECK DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG) FOR A SHORT TO VOLTAGE

- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.

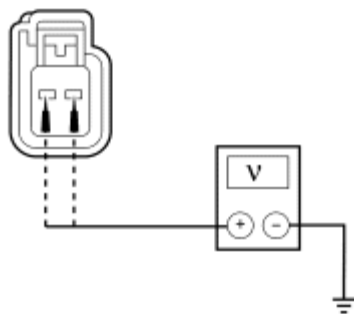


Fig. 87: Checking Driver Side Impact Sensor Circuits 1261 (WH/LG) & 1262 (BN/LG) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver side impact sensor:
 - C3209-2, circuit 1261 (WH/LG), harness side and ground.
 - C3209-1, circuit 1262 (BN/LG), harness side and ground.
- **Is voltage present on either circuit?**
YES : REPAIR circuit 1261 (WH/LG) or 1262 (BN/LG). Go to M34.
NO : Go to M8.

M8 CHECK DRIVER SIDE IMPACT SENSOR CIRCUIT 1261 (WH/LG) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.

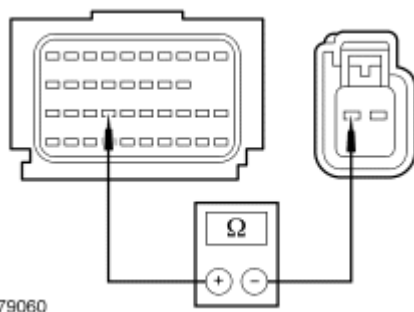


Fig. 88: Checking Driver Side Impact Sensor Circuit 1261 (WH/LG) For An Open
Courtesy of FORD MOTOR CO.

- 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.

- **Is the resistance less than 0.5 ohm?**

YES : Go to M9.

NO : REPAIR circuit 1261 (WH/LG). Go to M34.

M9 CHECK DRIVER SIDE IMPACT SENSOR CIRCUIT 1262 (BN/LG) FOR AN OPEN

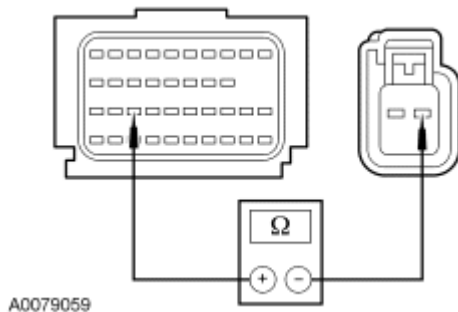


Fig. 89: Checking Driver Side Impact Sensor Circuit 1262 (BN/LG) For An Open
Courtesy of FORD MOTOR CO.

- 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.

- **Is the resistance less than 0.5 ohm?**

YES : Go to M10.

NO : REPAIR circuit 1262 (BN/LG). Go to M34.

M10 CHECK FOR A SHORT BETWEEN DRIVER SIDE IMPACT SENSOR CIRCUITS 1261 (WH/LG) AND 1262 (BN/LG)

- Measure the resistance between driver side impact sensor C3209-2, circuit 1261 (WH/LG) and C3209-1, circuit 1262 (BN/LG), harness side.

- **Is the resistance greater than 10,000 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**.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any on-demand B2296 fault PIDs for the driver side impact sensor indicating a fault?**

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YES : Go to M32.

NO : Fault corrected. Go to M34.

M12 INSPECT THE PASSENGER SIDE IMPACT SENSOR MOUNTING AND MOUNTING SURFACE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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**.
- Visually inspect the passenger side impact sensor and mounting surface for damage, corrosion or dirt.
- **Was a significant amount of corrosion or dirt found, the passenger side impact sensor 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**.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any RCM on-demand B2296 fault PIDs for the passenger side impact sensor indicating a fault?**

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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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

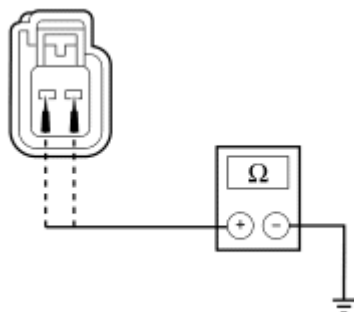
- Remove the passenger side impact sensor. Refer to **Side Impact Sensor**.
- Clean and repair the mounting surface as necessary. Clean the passenger side impact sensor mounting bolt.
- Install the passenger side impact sensor. Refer to **Side Impact Sensor**.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any RCM on-demand B2296 fault PIDs for the first row passenger side impact sensor indicating a fault?**

YES : Go to M16.

NO : Fault corrected. Go to M34.

M16 CHECK PASSENGER SIDE IMPACT SENSOR CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Side Impact Sensor C3211
- Disconnect: RCM C2041a and C2041b



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Fig. 90: Checking Passenger Side Impact Sensor Circuits 1263 (WH) & 1264 (BN) For A Short To Ground
 Courtesy of FORD MOTOR CO.

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- Measure the resistance between passenger side impact sensor:
 - C3211-2, circuit 1263 (WH), harness side and ground.
 - C3211-1, circuit 1264 (BN), harness side and ground.

- **Are the resistances greater than 10,000 ohms?**

YES : Go to M17.

NO : REPAIR circuit 1263 (WH) or 1264 (BN). Go to M34.

M17 CHECK PASSENGER SIDE IMPACT SENSOR CIRCUITS 1263 (WH) AND 1264 (BN) FOR A SHORT TO VOLTAGE

- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.

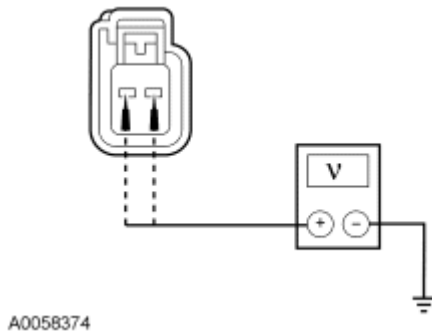


Fig. 91: Checking Passenger Side Impact Sensor Circuits 1263 (WH) & 1264 (BN) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger side impact sensor:
 - C3211-2, circuit 1263 (WH), harness side and ground.
 - C3211-1, circuit 1264 (BN), harness side and ground.

- **Is voltage present on either circuit?**

YES : REPAIR circuit 1263 (WH) or 1264 (BN). Go to M34.

NO : Go to M18.

M18 CHECK PASSENGER SIDE IMPACT SENSOR CIRCUIT 1263 (WH) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.

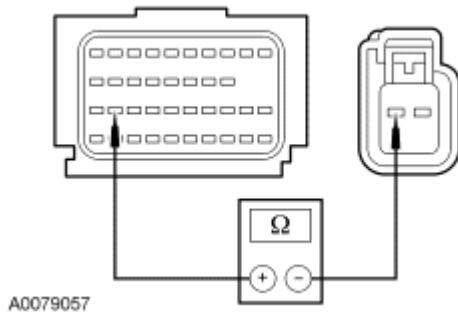


Fig. 92: Checking Passenger Side Impact Sensor Circuit 1263 (WH) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-29, circuit 1263 (WH), harness side and passenger side impact sensor C3211-2, circuit 1263 (WH), harness side.
- **Is the resistance less than 0.5 ohm?**
YES : Go to M19.
NO : REPAIR circuit 1263 (WH). Go to M34.

M19 CHECK PASSENGER SIDE IMPACT SENSOR CIRCUIT 1264 (BN) FOR AN OPEN

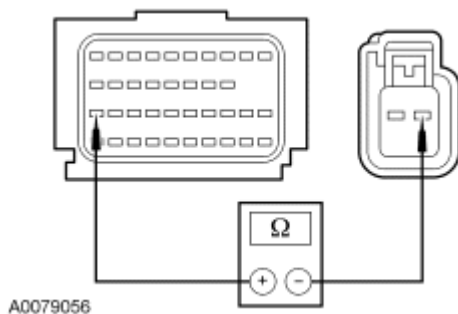


Fig. 93: Checking Passenger Side Impact Sensor Circuit 1264 (BN) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-30, circuit 1264 (BN), harness side and passenger side impact sensor C3211-1, circuit 1264 (BN), harness side.
- **Is the resistance less than 0.5 ohm?**
YES : Go to M20.
NO : REPAIR circuit 1264 (BN). Go to M34.

M20 CHECK FOR A SHORT BETWEEN PASSENGER SIDE IMPACT SENSOR CIRCUITS 1263 (WH) AND 1264 (BN)

- Measure the resistance between passenger side impact sensor C3211-2, circuit 1263 (WH) and C3211-1, circuit 1264 (BN), harness side.
- **Is the resistance greater than 10,000 ohms?**
YES : Go to M21.

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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**.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any on-demand B2296 fault PIDs for the passenger side impact sensor indicating a fault?**

YES : Go to M32.

NO : Fault corrected. Go to M34.

M22 INSPECT THE DRIVER/CENTER FRONT IMPACT SENSOR MOUNTING AND MOUNTING SURFACE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Inspect the driver/center front impact sensor mounting and make sure that the retaining nut is fully seated and tightened correctly.
- Remove the driver/center front impact sensor. Refer to **Front Impact Severity Sensor**.
- Visually inspect the driver/center front impact sensor and mounting surface for damage, corrosion or dirt.
- **Was a significant amount of corrosion or dirt found, the driver/center front impact sensor attached to the mounting surface incorrectly or was the driver/center front impact sensor nut not fully seated and tightened correctly?**

YES : CLEAN, TIGHTEN nut or REPAIR the mounting surface as necessary. REINSTALL the driver/center front impact sensor. Go to M34.

NO : Go to M23.

M23 INSTALL THE DRIVER/CENTER FRONT IMPACT SENSOR AND CARRY OUT THE ON-DEMAND SELF TEST

- Clean and repair the mounting surface as necessary. Clean the driver/center front impact sensor retaining nut.
- Install the driver/center front impact sensor. Refer to **Front Impact Severity Sensor**.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs

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- Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any on-demand B2296 fault PIDs for the driver/center front impact severity sensor indicating a fault?**

YES : Go to M24.

NO : Fault corrected. Go to M34.

M24 CHECK THE DRIVER/CENTER FRONT IMPACT SENSOR GROUND CIRCUIT 618 (VT/LG) FOR HIGH RESISTANCE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Disconnect: Driver/Center Front Impact Sensor C177
- Measure the resistance between driver/center front impact sensor C177-1, circuit 618 (VT/LG), harness side and the driver/center front impact sensor case ground.
- **Is the resistance less than 100 ohms?**

YES : Go to M26.

NO : Go to M25.

M25 CLEAN THE DRIVER/CENTER FRONT IMPACT SENSOR MOUNTING SURFACE AND CARRY OUT THE ON-DEMAND SELF TEST

- Remove the driver/center front impact sensor. Refer to **Front Impact Severity Sensor.**
- Clean and repair the mounting surface as necessary. Clean the driver/center front impact sensor retaining nut.
- Install the driver/center front impact sensor. Refer to **Front Impact Severity Sensor.**
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs

- Refer to PID list in Normal Operation to view B2296 fault PIDs.

- **Were any on-demand B2296 fault PIDs for the driver/center front impact sensor indicating a fault?**

YES : Go to M26.

NO : Fault corrected. Go to M34.

M26 CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Disconnect: Driver/Center Front Impact Sensor C177
- Disconnect: RCM C2041a and C2041b

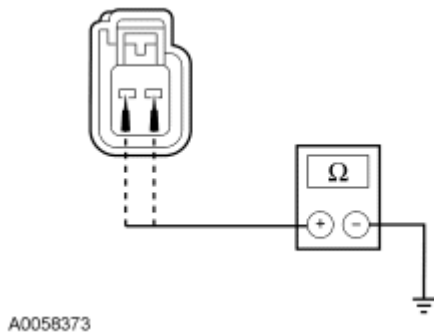


Fig. 94: Checking Driver/Center Front Impact Sensor Circuits 617 (PK/OG) & 618 (VT/LG) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver/center front impact sensor:
 - C177-2, circuit 617 (PK/OG), harness side and ground.
 - C177-1, circuit 618 (VT/LG), harness side and ground.
- **Are the resistances greater than 10,000 ohms?**

YES : Go to M27.

NO : REPAIR circuit 617 (PK/OG) or 618 (VT/LG). Go to M34.

M27 CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG) FOR A SHORT TO VOLTAGE

- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.

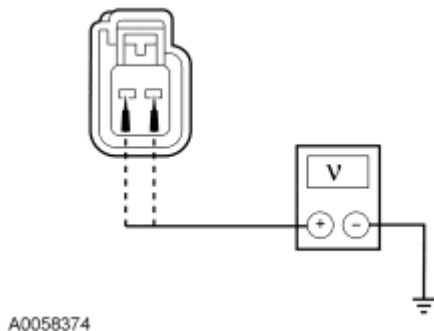


Fig. 95: Checking Driver/Center Front Impact Sensor Circuits 617 (PK/OG) & 618 (VT/LG) For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver/center front impact sensor:
 - C177-2, circuit 617 (PK/OG), harness side and ground.
 - C177-1, circuit 618 (VT/LG), harness side and ground.
- **Is voltage present on either circuit?**

YES : REPAIR circuit 617 (PK/OG) or 618 (VT/LG). Go to M34.

NO : Go to M28.

M28 CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUIT 617 (PK/OG) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

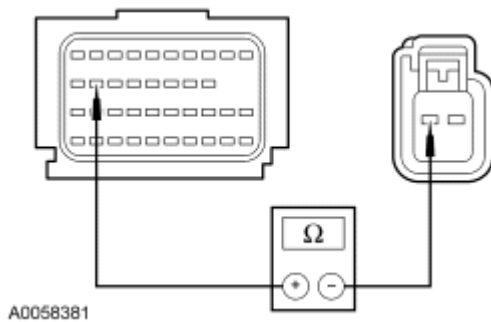


Fig. 96: Checking Driver/Center Front Impact Sensor Circuit 617 (PK/OG) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-19, circuit 617 (PK/OG), harness side and driver/center front impact sensor C177-2, circuit 617 (PK/OG), harness side.
- **Is the resistance less than 0.5 ohm?**

YES : Go to M29.

NO : REPAIR circuit 617 (PK/OG). Go to M34.

M29 CHECK DRIVER/CENTER FRONT IMPACT SENSOR CIRCUIT 618 (VT/LG) FOR AN OPEN

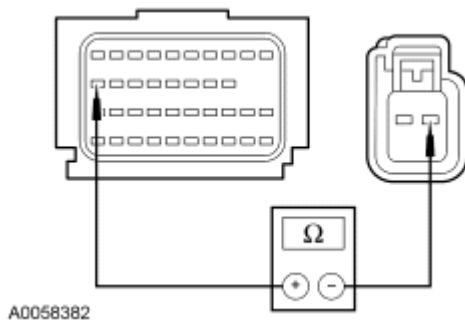


Fig. 97: Checking Driver/Center Front Impact Sensor Circuit 618 (VT/LG) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-20, circuit 618 (VT/LG), harness side and driver/center front impact sensor C177-1, circuit 618 (VT/LG), harness side.
- **Is the resistance less than 0.5 ohm?**

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YES : Go to M30.

NO : REPAIR circuit 618 (VT/LG). Go to M34.

M30 CHECK FOR A SHORT BETWEEN DRIVER/CENTER FRONT IMPACT SENSOR CIRCUITS 617 (PK/OG) AND 618 (VT/LG)

- Measure the resistance between driver/center front impact sensor C177-2, circuit 617 (PK/OG), harness side and driver/center front impact sensor C177-1, circuit 618 (VT/LG), harness side.
- **Is the resistance greater than 10,000 ohms?**

YES : Go to M31.

NO : REPAIR circuits 617 (PK/OG) and 618 (VT/LG). Go to M34.

M31 CHECK THE DRIVER/CENTER FRONT IMPACT SENSOR

- Install a known good driver/center front impact sensor. Refer to **Front Impact Severity Sensor**.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Were any on-demand B2296 fault PIDs for the driver/center front impact sensor indicating a fault?**

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.**

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Install the original impact sensor.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Do any on-demand DTC B2296 fault PIDs indicate a fault?**

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YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to M34.

M33 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2296 Fault PIDs
 - Refer to PID list in Normal Operation to view B2296 fault PIDs.
- **Do any RCM on-demand DTC B2296 fault PIDs indicate a fault?**

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 2296_31_OD (Side Crash Sensor Mount or Communication Fault, Front Driver Side), go to M2.

For 2296_30_OD (Side Crash Sensor Internal Fault, Front Driver Side), INSTALL a new driver side impact sensor. REFER to **Side Impact Sensor**. Go to M34.

For 2296_29_OD (Side Crash Sensor Mount or Communication Fault, Front Passenger Side), go to M12.

For 2296_28_OD (Side Crash Sensor Internal Fault, Front Passenger Side), INSTALL a new passenger side impact sensor. REFER to **Side Impact Sensor**. Go to M34.

For 2296_19_OD (Driver/Center Front Crash Sensor Mount/Communication Fault), go to M22.

For 2296_18_OD (Driver/Center Front Crash Sensor Internal Fault), INSTALL a new front impact severity sensor. REFER to **Front Impact Severity 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. **Do not install any new SRS components at this time. SRS components should**

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only be installed when directed to do so in the pinpoint test. REPAIR any intermittent wiring, terminal or connector concerns found. Go to M34.

M34 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test N: LFC 51/DTC B2434 - Drivers Seat Belt Buckle Switch Circuit Short to Ground

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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

- DTC B2434 Drivers Seat Belt Buckle Switch Circuit Short to Ground - If the RCM detects a short to ground on the driver safety belt buckle circuit, it will set this DTC.

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This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

PINPOINT TEST N: LFC 51/DTC B2434 - DRIVERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

N1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 DRIVER SAFETY BELT BUCKLE SWITCH CIRCUIT 85 (BN/LB) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Driver Safety Belt Buckle Switch C323
- Disconnect: RCM C2041a and C2041b

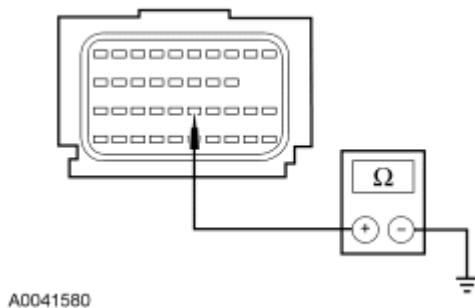


Fig. 98: Checking Driver Safety Belt Buckle Switch Circuit 85 (BN/LB) For A Short To Ground

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-25, circuit 85 (BN/LB), harness side and ground.
- **Is the resistance greater than 10,000 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.

- Install a known good driver safety belt buckle. Refer to **SAFETY BELT SYSTEM** article.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2434 retrieved?**

YES : Go to N4.

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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 SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Reinstall the original safety belt buckle.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2434 retrieved?**

YES : INSTALL a new RCM. REFER to Restraints Control Module (RCM). 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to N6.

N5 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to N6.

N6 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at

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this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test O: LFC 51/DTC B2435 - Drivers Seat Belt Buckle Switch Resistance Out of Range

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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 DTC B2435 in memory and flash lamp fault code (LFC) 51 on the air bag warning indicator.

- DTC B2435 Drivers Seat Belt Buckle Switch Resistance Out of Range - If the RCM detects a current out of range between buckled and unbuckled on the driver safety belt buckle switch, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

PINPOINT TEST O: LFC 51/DTC B2435 - DRIVERS SEAT BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may

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result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

O1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Install a known good driver safety belt buckle switch. Refer to **SAFETY BELT SYSTEM** article.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Reinstall the original safety belt buckle.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2435 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM).** 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to O5.

O4 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to O5.

O5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an

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accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**
YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.
NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test P: LFC 52/DTC B2438 - Passengers Seat Belt Buckle Switch Circuit Short to Ground

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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

- DTC B2438 Passengers Seat Belt Buckle Switch Circuit Short to Ground - If the RCM detects a short to ground on the passenger safety belt buckle circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Passenger safety belt buckle switch
- RCM

PINPOINT TEST P: LFC 52/DTC B2438 - PASSENGERS SEAT BELT BUCKLE SWITCH CIRCUIT SHORT TO GROUND

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WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

P1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 PASSENGER SAFETY BELT BUCKLE SWITCH CIRCUIT 1514 (RD/BK) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**

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- Disconnect: Safety Belt Buckle Switch C3066
- Disconnect: RCM C2041a and C2041b

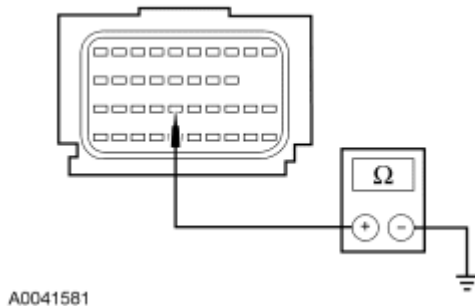


Fig. 99: Checking Passenger Safety Belt Buckle Switch Circuit 1514 (RD/BK) For A Short To Ground

Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-26, circuit 1514 (RD/BK), harness side and ground.
- **Is the resistance greater than 10,000 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 **SAFETY BELT SYSTEM** article.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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

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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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Reinstall the original safety belt buckle.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2438 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to P6.

P5 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to P6.

P6 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

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- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test Q: LFC 52/DTC B2439 - Passengers Seat Belt Buckle Switch Resistance Out of Range

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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 DTC B2439 in memory and flash lamp fault code (LFC) 52 on the air bag warning indicator.

- DTC B2439 Passengers Seat Belt Buckle Switch Resistance Out of Range - If the RCM detects a current out of range between buckled and unbuckled on the passenger safety belt buckle switch, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Passenger safety belt buckle switch
- RCM

PINPOINT TEST Q: LFC 52/DTC B2439 - PASSENGERS SEAT BELT BUCKLE SWITCH RESISTANCE OUT OF RANGE

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may

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result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

Q1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Install a known good passenger safety belt buckle. Refer to **SAFETY BELT SYSTEM** article.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Reinstall the original safety belt buckle.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2439 retrieved?**

YES : INSTALL a new RCM. REFER to Restraints Control Module (RCM). 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to Q5.

Q4 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to Q5.

Q5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the

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backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test R: LFC 51/DTC B2691 - Seat Belt Buckle Switch Circuit Fault, Front Driver's Side

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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 DTC B2691 in memory and flash lamp fault code (LFC) 51 on the air bag warning indicator.

- DTC B2691 Seat Belt Buckle Switch Circuit Fault, Front Driver's Side - If the RCM detects an open or short to battery on the driver safety belt buckle switch circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver safety belt buckle switch
- RCM

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PINPOINT TEST R: LFC 51/DTC B2691 - SEAT BELT BUCKLE SWITCH CIRCUIT FAULT, FRONT DRIVER'S SIDE

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

R1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Was RCM 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.

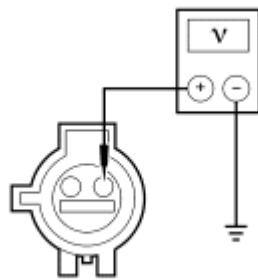
NO : This is an intermittent fault when present as a continuous memory DTC only (DTC not retrieved on demand). The fault condition is not present at this time. Go to R8.

R2 CHECK CIRCUIT 85 (BN/LB) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and

Repowering.

- 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Key in ON position.



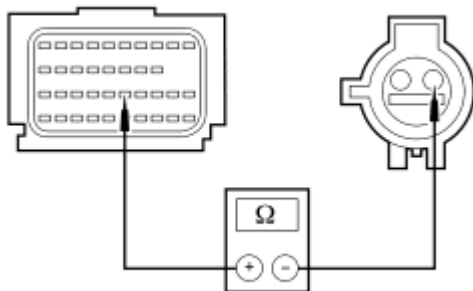
N0010351

Fig. 100: Checking Circuit 85 (BN/LB) For Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side and ground.
- **Is any voltage present?**
YES : REPAIR circuit 85 (BN/LB). Go to R9.
NO : Go to R3.

R3 CHECK CIRCUIT 85 (BN/LB) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**



N0010349

Fig. 101: Checking For Open On Circuit 85 (BN/LB)
Courtesy of FORD MOTOR CO.

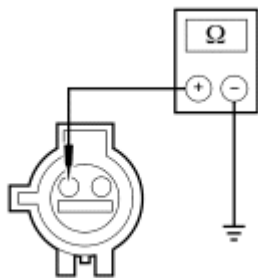
- Measure the resistance between RCM C2041b-25, circuit 85 (BN/LB), harness side and driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side.

- **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



N0010409

Fig. 102: Checking For Open Ground Circuit 1203 (BK/LB)
Courtesy of FORD MOTOR CO.

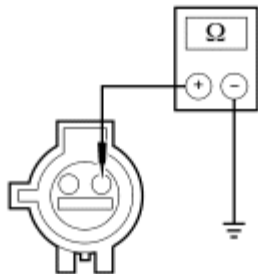
- Measure the resistance between driver safety belt buckle switch C323-1, circuit 1203 (BK/LB), harness side and ground.

- **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



N0010350

Fig. 103: Checking Circuit 85 (BN/LB) For Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver safety belt buckle switch C323-2, circuit 85 (BN/LB), harness side and ground.

- **Is the resistance greater than 10,000 ohms?**

YES : Go to R6.

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NO : REPAIR circuit 85 (BN/LB). Go to R9.

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 **SAFETY BELT SYSTEM** article.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Reinstall the original safety belt buckle.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2691 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to R9.

R8 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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

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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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to R9.

R9 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test S: LFC 52/DTC B2692 - Front Passenger's Seat Belt Buckle Switch Circuit Fault

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver and passenger safety belt buckles are equipped with safety belt buckle switches. The safety belt buckles are comprised of integrated circuits called Hall-effect switches. The safety belt buckle switches indicate to the restraints control module (RCM) whether the safety belt buckles are buckled or unbuckled. Refer to **Air Bag and Safety Belt Pretensioner Supplemental Restraint System (SRS)**.

The RCM supplies current to the safety belt buckle switch. Current flows through the switch, buckled or unbuckled to ground. The RCM will sense the difference in this current draw, 6 mA (unbuckled) or 15 mA (buckled), and use this information in determining the deployment rate of the dual-stage driver and passenger air bag modules. If the RCM detects current out of this range, it will set a DTC.

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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 DTC B2692 in memory and flash lamp fault code (LFC) 52 on the air bag warning indicator.

- DTC B2692 Front Passenger's Seat Belt Buckle Switch Circuit Fault - If the RCM detects an open or short to battery on the passenger safety belt buckle switch circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Passenger safety belt buckle switch
- RCM

PINPOINT TEST S: LFC 52/DTC B2692 - FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH CIRCUIT FAULT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough

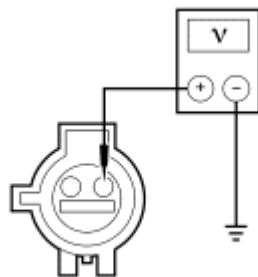
inspection and verification before proceeding with the pinpoint test.

S1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 CIRCUIT 1514 (RD/BK) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.



N0010351

Fig. 104: Checking Circuit 85 (BN/LB) For Short To Voltage
 Courtesy of FORD MOTOR CO.

- Measure the voltage between passenger safety belt buckle switch C337-2, circuit 1514 (RD/BK), harness side and ground.
- **Is any voltage present?**
YES : REPAIR circuit 1514 (RD/BK). Go to S9.
NO : Go to S3.

S3 CHECK CIRCUIT 1514 (RD/BK) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and**

Repowering.

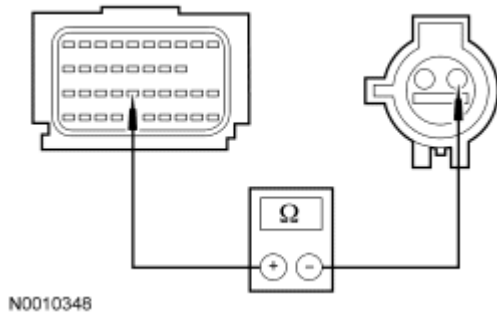


Fig. 105: Checking For Open On Circuit 1514 (RD/BK)
Courtesy of FORD MOTOR CO.

- 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.

- **Is the resistance less than 0.5 ohm?**

YES : Go to S4.

NO : REPAIR circuit 1514 (RD/BK). Go to S9.

S4 CHECK FOR AN OPEN GROUND CIRCUIT 1203 (BK/LB)

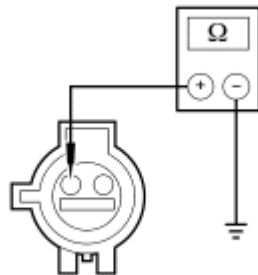


Fig. 106: Checking For Open Ground Circuit 1203 (BK/LB)
Courtesy of FORD MOTOR CO.

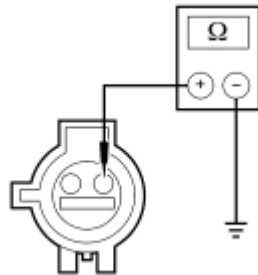
- Measure the resistance between passenger safety belt buckle switch C3066-1, circuit 1203 (BK/LB), harness side and ground.

- **Is the resistance less than 0.5 ohm?**

YES : Go to S5.

NO : REPAIR circuit 1203 (BK/LB). Go to S9.

S5 CHECK CIRCUIT 1514 (RD/BK) FOR A SHORT TO GROUND



N0010350

Fig. 107: Checking Circuit 1514 (RD/BK) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between passenger safety belt buckle switch C3066-2, circuit 1514 (RD/BK), harness side and ground.
- **Is the resistance greater than 10,000 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 **SAFETY BELT SYSTEM** article.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2692 retrieved?**
YES : Go to S7.
NO : Fault corrected. Go to S9.

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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

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- Reinstall the original safety belt buckle.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC B2692 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to S9.

S8 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to S9.

S9 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

NOTE: Lamp fault code (LFC) 16 is shared between DTC B2290 and DTC B2909.

Normal Operation

The belt tension sensor (BTS) 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 is approximately 0.95 volt and high tension-high voltage is approximately 3.8 volts.

The OCS system continuously monitors the belt tension sensor circuits. If the occupant classification system module (OCSM) 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 DTC B2909 in memory and flash either LFC 16 on the air bag warning indicator.

The OCS system components (seat cushion foam pad, bladder with pressure sensor and OCSM) 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 component or seat cushion foam pad are needed, a new OCS system service kit (seat cushion foam pad, bladder with pressure sensor and OCSM) must be installed as an assembly.

Fault PIDs ^a	Description	Fault Trigger Condition
2909_29_OD and 2909_29_CM	Front Passenger Side Belt Tension Sensor Short to Ground	When the occupant classification sensor occupant classification system module (OCSM) senses a short to ground on the belt tension sensor circuits, a fault will be indicated.
2909_31_OD and 2909_31_CM	Front Passenger Side Belt Tension Sensor Circuit Fault	When the OCSM senses a failure on the belt tension sensor circuits, a fault will be indicated.

^a Fault PIDs that end in OD indicate an on-demand status and are associated with on-demand DTC B2909. Fault PIDs that end in CM indicate continuous memory status and are associated with continuous DTC B2909.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- BTS
- OCSM

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

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

T1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2909 Fault PIDs
 - Refer to PID list in Normal Operation to view B2909 fault PIDs.
- **Do any on-demand DTC B2909 fault PIDs indicate a fault?**

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.

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For 2909_31_OD (Front Passenger Side Belt Tension Sensor Circuit Fault), go to T2.

For 2909_29_OD (Front Passenger Side Belt Tension Sensor Short to Ground), 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.

T2 CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- 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: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

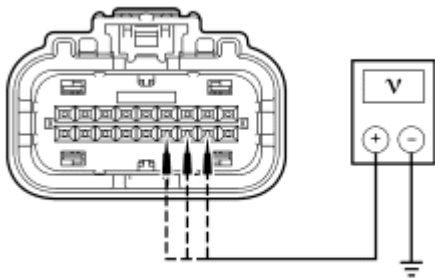


Fig. 108: Checking Belt Tension Sensor Circuits For A Short To Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage between OCSM:
 - C3043-11, circuit 2088 (TN/RD), harness side and ground
 - C3043-13, circuit 2090 (DB/OG), harness side and ground
 - C3043-12, circuit 2089 (OG/BK), harness side and ground.
- **Is voltage present on any circuit?**
YES : REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG). Go to T10.
NO : Go to T3.

T3 CHECK THE BELT TENSION SENSOR CIRCUITS FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

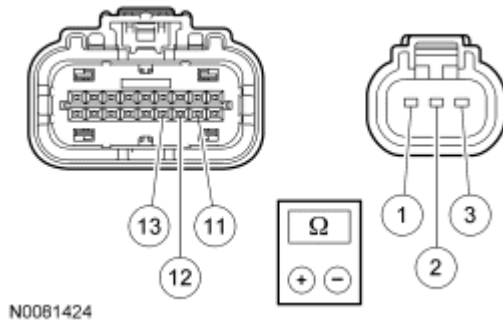


Fig. 109: Checking Belt Tension Sensor Circuits For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM C3043, harness side and belt tension sensor C3238, harness side using the following chart.

OCSM	Circuit	Belt Tension Sensor
C3043-11	2088 (TN/RD)	C3238-1
C3043-13	2090 (DB/OG)	C3238-2
C3043-12	2089 (OG/BK)	C3238-3

- **Are the resistances less than 0.5 ohm?**

YES : Go to T5.

NO : REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG).

Go to T10.

T4 CHECK THE BELT TENSION SENSOR CIRCUITS FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: Passenger Seat Side Air Bag C337
- Connect: Restraint System Diagnostic Tool 418-133 to Passenger Seat Side Air Bag C337
- Disconnect: OCSM C3043

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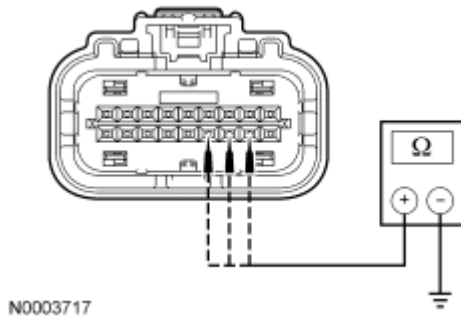


Fig. 110: Checking Belt Tension Sensor Circuits For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between OCSM:
 - C3043-11, circuit 2088 (TN/RD), harness side and ground.
 - C3043-12, circuit 2089 (OG/BK), harness side and ground.
 - C3043-13, circuit 2090 (DB/OG), harness side and ground.

- **Are the resistances greater than 10,000 ohms?**

YES : Go to T5.

NO : REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG). Go to T10.

T5 CHECK FOR A SHORT BETWEEN OCSM CIRCUITS 2088 (TN/RD), 2089 (OG/BK) AND 2090 (DB/OG)

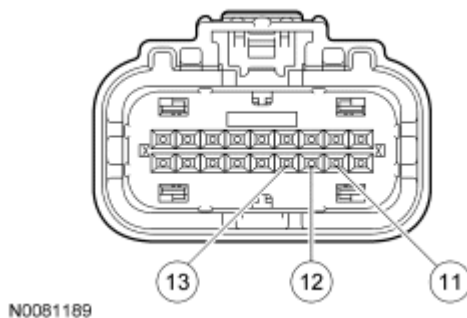


Fig. 111: Checking For A Short Between OCSM Circuits 2088 (TN/RD), 2089 (OG/BK) & 2090 (DB/OG)

Courtesy of FORD MOTOR CO.

- Measure the resistance between the OCSM C3043, harness side using the following chart:

OCSM	OCSM
C3043-11, circuit 2088 (TN/RD)	C3043-12, circuit 2089 (OG/BK)

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C3043-11, circuit 2088 (TN/RD)	C3043-13, circuit 2090 (DB/OG)
C3043-12, circuit 2089 (OG/BK)	C3043-13, circuit 2090 (DB/OG)

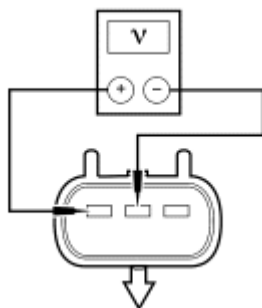
- Are the resistances greater than 10,000 ohms?

YES : Go to T6.

NO : REPAIR circuit 2088 (TN/RD), 2089 (OG/BK) or 2090 (DB/OG). Go to T10.

T6 CHECK THE OCSM OUTPUT

- Connect: OCSM C3043
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.



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Fig. 112: Checking OCSM Output
Courtesy of FORD MOTOR CO.

- Measure the voltage between belt tension sensor C3238-1, circuit 2088 (TN/RD), harness side and C3238-2, circuit 2090 (DB/OG), harness side.
- Is voltage approximately 5 volts?
YES : Go to T7.
NO : INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor. Go to T10.

T7 CHECK THE BELT TENSION SENSOR VOLTAGE OUTPUT

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.

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- 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.

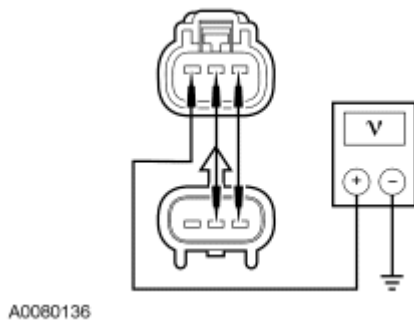


Fig. 113: Checking Belt Tension Sensor Voltage Output
Courtesy of FORD MOTOR CO.

- 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 by pulling on the safety belt webbing near the anchor of the safety belt.
- **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 (part of safety belt and retractor assembly). REFER to Front Safety Belt Retractor in **SAFETY BELT SYSTEM** article. 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.

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Connect: Belt Tension Sensor C3238
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

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- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2909 Fault PIDs
 - Refer to PID list in Normal Operation to view B2909 fault PIDs.

- **Do any on-demand DTC B2909 fault PIDs indicate a fault?**

YES : INSTALL a new OCS system service kit. REFER to Occupant Classification Sensor. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to T10.

T9 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Enter the following diagnostic mode on the diagnostic tool: DataLogger - RCM - View and Record All 2909 Fault PIDs
 - Refer to PID list in Normal Operation to view B2909 fault PIDs.

- **Do any on-demand DTC B2909 fault PIDs indicate a fault?**

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 2909_31_OD (Front Passenger Side Belt Tension Sensor Circuit Fault), go to T2.

For 2909_29_OD (Front Passenger Side Belt Tension Sensor Short to Ground), 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to T10.

T10 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Key in ON position.

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

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

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

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

- DTC C1414 Incorrect Module Design Level - If the RCM detects software and hardwired vehicle ID combination that does not match at start-up, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Incorrect RCM for vehicle
- Incorrect OCS system for vehicle

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

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: The supplemental restraint system (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

U1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM

- **Was RCM on-demand DTC C1414 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 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.

U2 CHECK THE OCS PART NUMBER

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Check the part number of the OCSM against the part number listed in the master parts catalog.
- **Did the part number on the OCSM match the part number listed in the master parts catalog?**

YES : Go to U3.

NO : INSTALL a new OCS system service kit with the correct part number. REFER to Occupant Classification Sensor. Go to U6.

U3 CHECK THE RCM PART NUMBER

- 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?**

YES : Go to U4.

NO : INSTALL a new RCM with the correct part number. REFER to Restraints Control Module (RCM). Go to U6.

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 SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC C1414 retrieved?**

YES : INSTALL a new RCM. REFER to Restraints Control Module (RCM). 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to U6.

U5 CHECK FOR INTERMITTENT FAULTS

- Key in OFF position.

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to U6.

U6 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test V: LFC 49/DTC C1947 - Front Driver's Seat Track Position Switch Circuit Short to Ground

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called a Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM).

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the

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forward or rearward seat position to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

The RCM continuously monitors the driver seat track position sensor circuits. If the RCM detects a short to ground, it will store DTC C1947 in memory and flash lamp fault code (LFC) 49 on the air bag warning indicator.

- DTC C1947 Front Driver's Seat Track Position Switch Circuit Short to Ground - If the RCM detects a short to ground on the driver seat track position sensor circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Driver seat track position sensor
- RCM

PINPOINT TEST V: LFC 49/DTC C1947 - FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT SHORT TO GROUND

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

NOTE: SRS components should only be disconnected or reconnected when instructed

to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

V1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

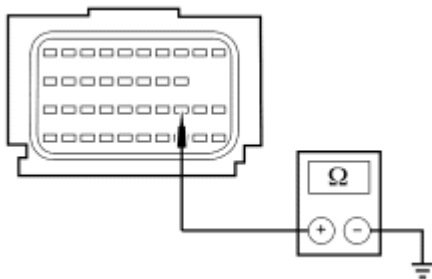
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- Was RCM on-demand DTC C1947 retrieved?

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 CIRCUIT 1520 (LG) FOR A SHORT TO GROUND

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- 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



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Fig. 114: Checking Circuit 1520 (LG) For A Short To Ground
Courtesy of FORD MOTOR CO.

- Measure the resistance between RCM C2041b-23, circuit 1520 (LG), harness side and ground.
- Is the resistance greater than 10,000 ohms?

YES : Go to V3.

NO : REPAIR circuit 1520 (LG). Go to V6.

V3 CHECK THE SEAT TRACK POSITION SENSOR

NOTE: Make sure all restraint system diagnostic tools, sensor electrical

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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**.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Reinstall the original seat track position sensor.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC C1947 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**. 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to V6.

V5 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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

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the wire harness and cycling the ignition key frequently. **ACTIVATE** other systems in the same wire harness. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** **REPAIR** any intermittent wiring, terminal or connector concerns found. Go to V6.

V6 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test W: LFC 49/DTC C1948 - Front Driver's Seat Track Position Switch Circuit Resistance Out of Range

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, 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

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called a Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM).

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the forward or rearward seat position to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

The RCM monitors the driver seat track position sensor circuits. If the RCM detects a current out of range

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condition, it will store DTC C1948 in memory and flash lamp fault code (LFC) 49 on the air bag warning indicator.

- DTC C1948 Front Driver's Seat Track Position Switch Circuit Resistance Out of Range - If the RCM detects a current out of range between forward and rearward on the driver seat track position switch, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Seat track position sensor
- RCM

PINPOINT TEST W: LFC 49/DTC C1948 - FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT RESISTANCE OUT OF RANGE

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

- NOTE:** Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.
- NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer.
- NOTE:** SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.
- NOTE:** Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.

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W1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Install a known good seat track position sensor. Refer to **Seat Position Sensor.**
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Install the original seat track position sensor.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC C1948 retrieved?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM).** 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to W5.

W4 CHECK FOR AN INTERMITTENT FAULT

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- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to W5.

W5 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).
 - If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test X: LFC 49/DTC C1981 - Front Driver's Seat Track Position Switch Circuit Fault

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

Normal Operation

As part of the supplemental restraint system (SRS), the driver seat is equipped with a seat track position sensor. The seat track position sensor is comprised of integrated circuits called a Hall-effect switch. The seat track position sensor indicates the position of the driver seat, forward or rearward, to the restraints control module (RCM).

The RCM supplies current to the seat track position sensor. Current flows through the switch, both in the

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forward or rearward seat position to ground. The RCM will sense the difference in this current draw, 6 mA (forward) or 15 mA (rearward), and use this information in determining the deployment rate of the dual-stage driver air bag module. If the RCM detects current out of range, it will set a DTC.

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

- DTC C1981 Front Driver's Seat Track Position Switch Circuit Fault - If the RCM detects an open or short to battery on the driver seat track position sensor circuit, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- Seat track position switch
- RCM

PINPOINT TEST X: LFC 49/DTC C1981 - FRONT DRIVER'S SEAT TRACK POSITION SWITCH CIRCUIT FAULT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

NOTE: Use the correct probe adapter(s) from the Flex Probe Kit when taking measurements. Failure to use the correct probe adapter(s) may damage the connector.

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

NOTE: SRS components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result

in incorrect diagnosis of the SRS.

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

X1 CHECK FOR CONTINUOUS AND ON-DEMAND DTCs

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC C1981 retrieved?**

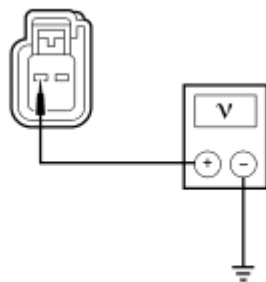
YES : This is a hard fault. The fault condition is still present. This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test.

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 CIRCUIT 1520 (LG) FOR A SHORT TO VOLTAGE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- 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 SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
- Key in ON position.



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Fig. 115: Checking Circuit 1520 (LG) For A Short To Voltage
Courtesy of FORD MOTOR CO.

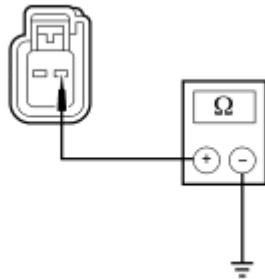
- Measure the voltage between driver seat track position sensor C356-2, circuit 1520 (LG), harness side and ground.
- **Is any voltage present?**

YES : REPAIR circuit 1520 (LG). Go to X8.

NO : Go to X3.

X3 CHECK CIRCUIT 1203 (BK/LB) FOR AN OPEN

- Key in OFF position.
- Depower the SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.



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Fig. 116: Checking Circuit 1203 (BK/LB) For An Open
Courtesy of FORD MOTOR CO.

- Measure the resistance between driver seat track position sensor C356-1, circuit 1203 (BK/LB), harness side and ground.
- **Is the resistance less than 5 ohms?**

YES : Go to X4.

NO : REPAIR circuit 1203 (BK/LB). Go to X8.

X4 CHECK CIRCUIT 1520 (LG) FOR AN OPEN

- Key in OFF position.
- 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.

- **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.
- Connect: RCM C2041a and C2041b
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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 SRS. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Install the original seat track position sensor.
- Repower the SRS. **Do not** prove out the SRS at this time. Refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM on-demand DTC C1981 retrieved?**

YES : INSTALL a new RCM. REFER to Restraints Control Module (RCM). 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to X8.

X7 CHECK FOR AN INTERMITTENT FAULT

- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Was RCM 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. **Do not install any new SRS components at this time. SRS components should only be installed when directed to do so in the pinpoint test.** REPAIR any intermittent wiring, terminal or connector concerns found. Go to X8.

X8 CHECK FOR ADDITIONAL SRS DTCs

- Key in OFF position.

WARNING: Turn the ignition OFF and wait one minute to deplete the backup power supply. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

- Reconnect all SRS components (if previously disconnected).

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- If previously directed to depower the SRS, repower the SRS. **Do not** prove out the SRS at this time. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - RCM
- **Are any RCM DTCs retrieved indicating a fault?**

YES : Do not clear any DTCs until all DTCs have been resolved. Go to the **Supplemental Restraint System (SRS) DTC Chart** for pinpoint test direction.

NO : CLEAR all RCM continuous memory DTCs. PROVE OUT the SRS. Repair is complete. RETURN the vehicle to the customer.

Pinpoint Test Y: DTC B1317 or B1318 - Battery Voltage High or Battery Voltage Low

Refer to appropriate SYSTEM WIRING DIAGRAM ARTICLE, Supplemental Restraint System for schematic and connector information.

NOTE: DTCs B1317, B1318 or B1676 can be set if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if the battery has been left unattended with the accessories on.

Normal Operation

The restraints control module (RCM) continuously monitors the input voltage for correct operation. If the RCM detects input voltage below 9.5 volts, it will store DTC B1318 in memory. If the RCM detects input voltage above 16.2 volts, it will store DTC B1317 in memory. If the RCM sets DTC B1317 or B1318, it will illuminate the air bag warning indicator.

- DTC B1317 Battery Voltage High- If the RCM detects voltage above 16.2 volts, it will set this DTC.
- DTC B1318 Battery Voltage Low- If the RCM detects voltage below 9.5 volts, it will set this DTC.

This pinpoint test is intended to diagnose the following:

- Wiring, terminals or connectors
- RCM

PINPOINT TEST Y: DTC B1317 OR B1318 - BATTERY VOLTAGE HIGH OR BATTERY VOLTAGE LOW

WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTE: Most faults are due to connector and/or wiring concerns. Carry out a thorough

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inspection and verification before proceeding with the pinpoint test.

NOTE: Supplemental restraint system (SRS) components should only be disconnected or reconnected when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.

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

Y1 RETRIEVE ALL CONTINUOUS MEMORY DTCs IN ALL MODULES

- Key in ON position.
- Enter the following diagnostic mode on the diagnostic tool: Self Test - ALL CMDTC (Continuous Memory)
- Is DTC B1317, B1318 or B1676 present in one or more modules AND P0563, P0620, P0625, P0626 or P065B retrieved from the PCM?

YES : REFER to CHARGING SYSTEM - GENERAL INFORMATION article to diagnose the charging system.

NO : Go to Y2.

Y2 TEST BATTERY CONDITION

NOTE: DTCs B1317, B1318 or B1676 can be set if the vehicle has been recently jump started, the battery has been recently charged or the battery has been discharged. The battery may become discharged due to excessive load(s) on the charging system from aftermarket accessories or if the battery has been left unattended with the accessories on.

- Key in OFF position.
- Carry out the battery condition test. Refer to BATTERY, MOUNTING AND CABLES article.
- **Did the battery pass the condition test?**

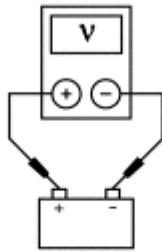
YES : If the battery passed the condition test but required a recharge, CHARGING SYSTEM - GENERAL INFORMATION article to diagnose the charging system. CLEAR all continuous memory DTCs. TEST the system for normal operation.

If the battery passed the condition test and did not require a recharge, go to Y3.

NO : INSTALL a new battery. CLEAR all continuous memory DTCs. PROVE OUT the SRS.

Y3 CHECK CHARGING SYSTEM VOLTAGE

NOTE: Do not allow the engine speed to increase above 2,000 RPM while performing this step or the generator may self excite and result in default charging system output voltage. If engine speed goes above 2,000 RPM, shut the vehicle off and restart the engine before performing this step.



AJ0210-A

Fig. 117: Checking Charging System Voltage
Courtesy of FORD MOTOR CO.

- Measure the voltage of the battery:
 - for DTC B1317, turn all accessories off and run the engine at 1,500 RPM for a minimum of 2 minutes while measuring battery voltage.
 - for DTC B1318, turn on headlights and HVAC fan on high and run engine at 1,500 RPM for a minimum of 2 minutes while measuring battery voltage.

• **Is the voltage between 13 and 15.2 volts?**

YES : For DTC B1318, go to Y4.

For DTC B1317, go to Y6.

NO : REFER to **CHARGING SYSTEM - GENERAL INFORMATION** article to diagnose the charging system. CLEAR all continuous memory DTCs. PROVE OUT the SRS.

Y4 CHECK THE RCM IGNITION CIRCUIT FOR HIGH RESISTANCE

- Key in OFF position.
- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: RCM C2041a and C2041b
- Measure the resistance between RCM C2041a-12, circuit 937 (RD/WH), harness side, and SJB fuse 17.

• **Is the resistance less than 1 ohm?**

YES : Go to Y5.

NO : REPAIR the circuit as necessary. CLEAR all continuous memory DTCs. PROVE OUT the SRS.

Y5 CHECK FOR OPEN GROUND TO THE MODULE

- Measure the resistance between the RCM C2041a-16, circuit 1203 (BK/LB), harness side, and a good ground.

• **Is the resistance less than 5 ohms?**

YES : Go to Y6.

NO : REPAIR the circuit as necessary. MAKE SURE the RCM fasteners are clean and tightened to specification with no corrosion. REPAIR as necessary.

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CLEAR all continuous memory DTCs. PROVE OUT the SRS.

Y6 CHECK FOR MODULE OPERATION

- Depower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Disconnect: RCM C2041a and C2041b
- Check for the following:
 - corrosion.
 - damaged pins.
 - pushed-out pins.
- Connect the RCM C310a and C310b and make sure the connector seats correctly.
- Repower the SRS. Refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
- Operate the system and verify the concern is still present.
- **Is the concern still present?**

YES : INSTALL a new RCM. REFER to **Restraints Control Module (RCM)**.

NO : The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR all continuous memory DTCs. PROVE OUT the SRS.

GENERAL PROCEDURES

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) DEPOWERING AND REPOWERING

Special Tools

Illustration	Tool Name	Tool Number
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS)	software with appropriate hardware, or equivalent scan tool

Depowering Procedure

WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

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WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: To reduce the risk of accidental deployment, do not use any memory saver devices. Failure to follow this instruction may result in serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (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 RCM fuse 17 (10A) from the SJB. For additional information, refer to the appropriate SYSTEM WIRING DIAGRAM ARTICLE.
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.

WARNING: Always deplete the backup power supply before repairing or installing any new front or side air bag supplemental restraint system (SRS) component and before servicing, removing, installing, adjusting or striking components near the front or side impact sensors or the restraints control module (RCM). Nearby components include doors, instrument panel, console, door latches, strikers, seats and hood latches.

See DESCRIPTION AND OPERATION for location of the RCM and impact sensor(s).

To deplete the backup power supply energy, disconnect the battery ground cable and wait at least 1 minute. Be sure to disconnect auxiliary batteries and power supplies (if equipped).

Failure to follow these instructions may result in serious personal injury or death in the event of an accidental deployment.

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6. Disconnect the battery ground cable and wait at least one minute. For additional information, refer to **BATTERY, MOUNTING AND CABLES** article.

Repowering Procedure

1. Turn the ignition switch from OFF to ON.
2. Install RCM fuse 17 (10A) to the SJB and close the cover.

WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

3. Connect the battery ground cable.
4. Prove out the SRS as follows:

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

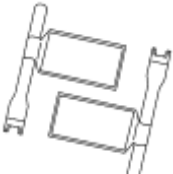
- fail to light.
- remain lit continuously.
- flash at a 5Hz rate (RCM not configured).

The air bag warning indicator might not light 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 warning indicator is inoperative and an SRS fault exists, a chime will sound in a pattern of 5 sets of 5 beeps. If this occurs, the air bag warning indicator and any SRS fault discovered must be diagnosed and repaired.

Clear all continuous DTCs from the RCM using a scan tool.

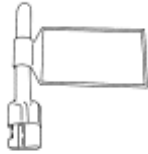
SUPPLEMENTAL RESTRAINT SYSTEM (SRS) DEACTIVATION AND REACTIVATION

Special Tools

Illustration	Tool Name	Tool Number
 ST2621-A	Diagnostic Tool, Restraint System (2 required)	418-F395

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 ST2512-A	Diagnostic Tool, Restraint System	418-F403
 ST2507-A	Diagnostic Tool, Restraint System (2 required)	418-133
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS)	software with appropriate hardware, or equivalent scan tool

Deactivation

WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

WARNING: To reduce the risk of accidental deployment, do not use any memory saver devices. Failure to follow this instruction may result in serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (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 appropriate SYSTEM WIRING DIAGRAM ARTICLE.
4. Turn the ignition switch ON and visually monitor the air bag warning indicator for at least 30 seconds. The air bag warning indicator will remain lit continuously (no flashing) if the correct RCM fuse has been removed. If the air bag warning indicator does not remain lit continuously, remove the correct RCM fuse before proceeding.
5. Turn the ignition OFF.

WARNING: Always deplete the backup power supply before repairing or installing any new front or side air bag supplemental restraint system (SRS) component and before servicing, removing, installing, adjusting or striking components near the front or side impact sensors or the restraints control module (RCM). Nearby components include doors, instrument panel, console, door latches, strikers, seats and hood latches.

See DESCRIPTION AND OPERATION for location of the RCM and impact sensor(s).

To deplete the backup power supply energy, disconnect the battery ground cable and wait at least 1 minute. Be sure to disconnect auxiliary batteries and power supplies (if equipped).

Failure to follow these instructions may result in serious personal injury or death in the event of an accidental deployment.

6. Disconnect the battery ground cable and wait at least one minute. For additional information, refer to BATTERY, MOUNTING AND CABLES article.
7. Remove the 2 driver air bag module bolt caps (1 shown) from the steering wheel.

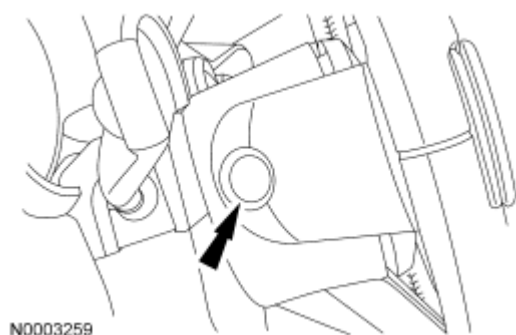


Fig. 118: Locating Driver Air Bag Module Bolt Caps
Courtesy of FORD MOTOR CO.

8. Remove the 2 driver air bag module bolts (1 shown).

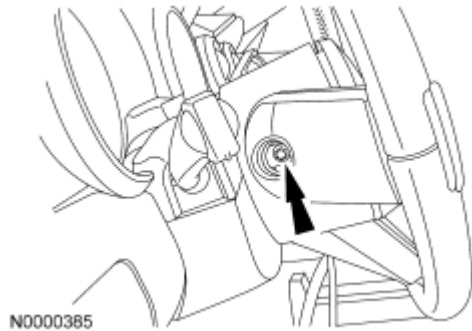


Fig. 119: Locating Driver Air Bag Module Bolts
Courtesy of FORD MOTOR CO.

9. Disconnect the 2 electrical connectors and remove the driver air bag module.

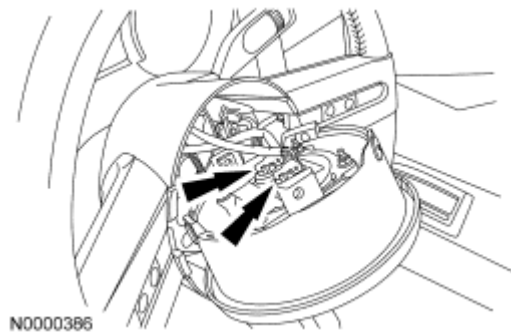


Fig. 120: Locating Driver Air Bag Module Electrical Connectors
Courtesy of FORD MOTOR CO.

10. Attach the Restraint System Diagnostic Tool to the clockspring electrical connectors.



Fig. 121: Locating Restraint System Diagnostic Tools
Courtesy of FORD MOTOR CO.

11. Fully lower the glove compartment door.
12. Disconnect the passenger air bag module electrical connector.

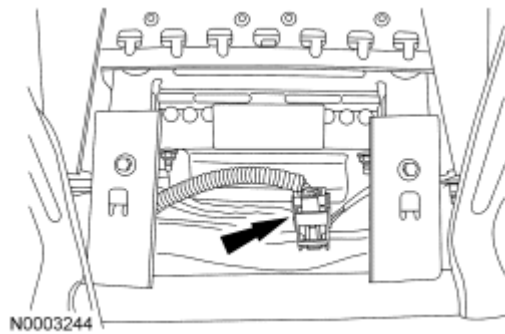


Fig. 122: Locating Passenger Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

13. Attach the Restraint System Diagnostic Tool to the vehicle harness side of the passenger air bag module electrical connector.

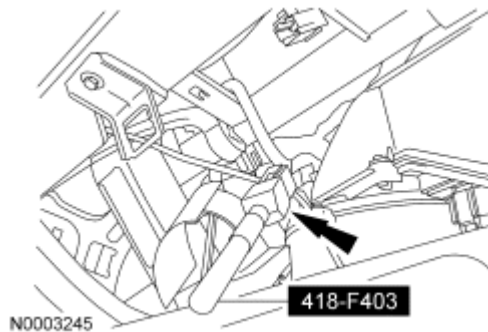


Fig. 123: Attaching Restraint System Diagnostic Tool To Vehicle Harness Side Of Passenger Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

14. Release the red locking tab and disconnect the passenger side air bag module electrical connector.

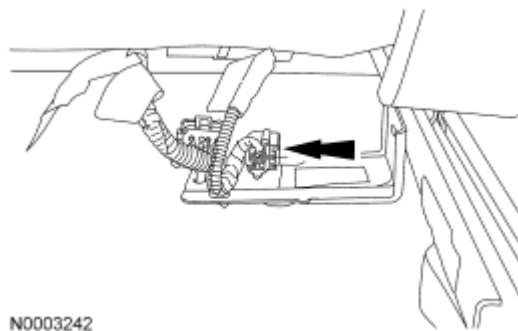


Fig. 124: Locating Passenger Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

15. Attach the Restraint System Diagnostic Tool to the vehicle harness side of the passenger side air bag module electrical connector.

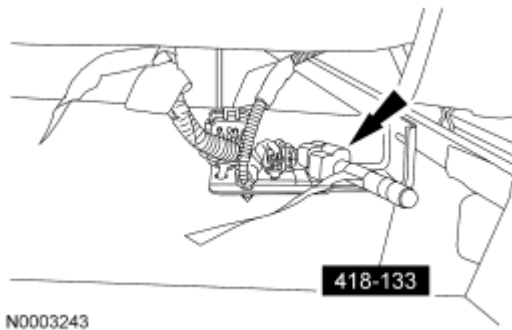


Fig. 125: Attaching Restraint System Diagnostic Tool To Passenger Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

16. Release the red locking tab and disconnect the driver side air bag module electrical connector.

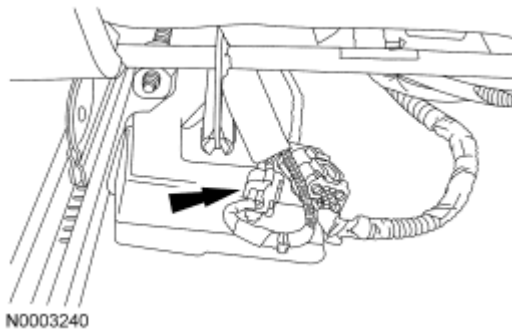


Fig. 126: Locating Driver Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

17. Attach the Restraint System Diagnostic Tool to the vehicle harness side of the driver side air bag module electrical connector.

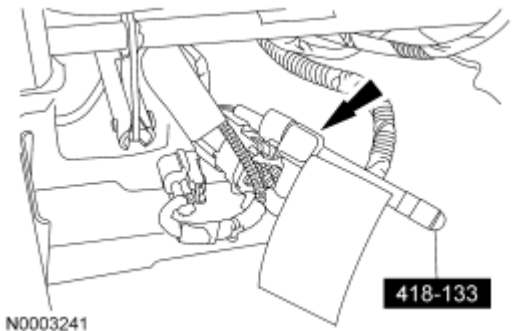


Fig. 127: Attaching Restraint System Diagnostic Tool To Driver Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

18. Install RCM fuse 17 (10A) to the RCM.

19. Connect the battery ground cable. For additional information, refer to **BATTERY, MOUNTING AND CABLES** article.

Reactivation

1. Remove RCM fuse 17 (10A) from the SJB.
2. Disconnect the battery ground cable and wait at least one minute.
3. Remove the Restraint System Diagnostic Tool from the vehicle harness side of the driver side air bag module electrical connector.

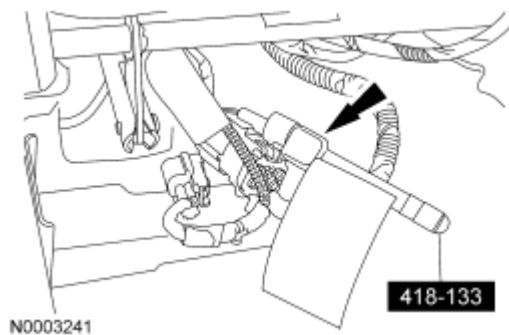


Fig. 128: Attaching Restraint System Diagnostic Tool To Driver Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

4. Connect the driver side air bag module electrical connector and reset the red locking tab.

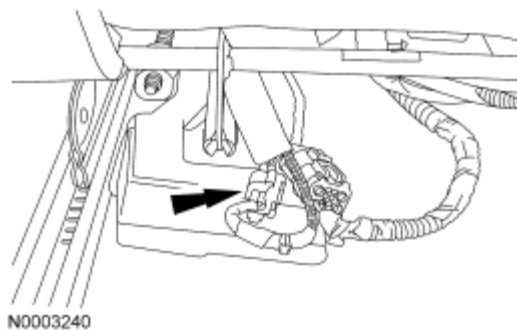


Fig. 129: Locating Driver Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

5. Remove the Restraint System Diagnostic Tool from the vehicle harness side of the passenger side air bag module electrical connector.

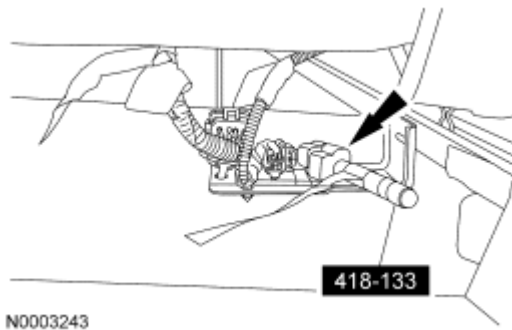


Fig. 130: Attaching Restraint System Diagnostic Tool To Passenger Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

6. Connect the passenger side air bag module electrical connector and reset the red locking tab.

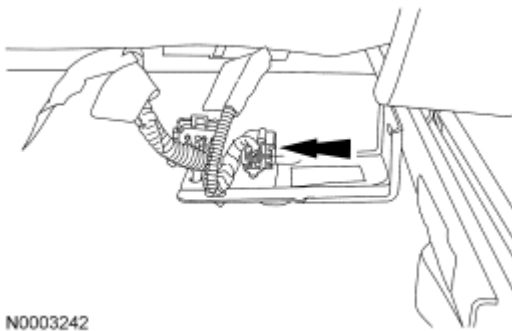


Fig. 131: Locating Passenger Side Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

7. Remove the Restraint System Diagnostic Tool from the vehicle harness side of the passenger air bag module electrical connector.

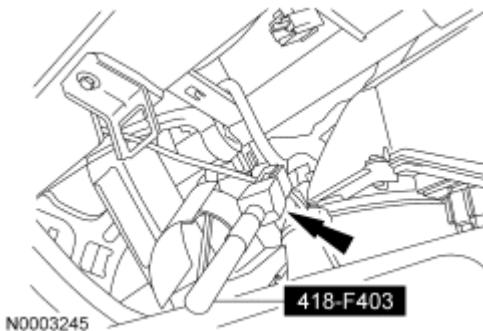


Fig. 132: Attaching Restraint System Diagnostic Tool To Vehicle Harness Side Of Passenger Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

8. Connect the passenger air bag module electrical connector.

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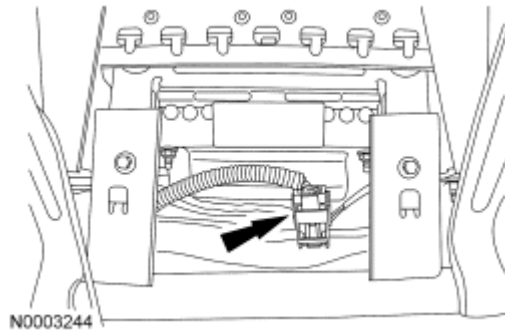


Fig. 133: Locating Passenger Air Bag Module Electrical Connector
Courtesy of FORD MOTOR CO.

9. Close the glove compartment door.
10. Remove the Restraint System Diagnostic Tool from the clockspring electrical connectors.



Fig. 134: Locating Restraint System Diagnostic Tools
Courtesy of FORD MOTOR CO.

11. Connect the 2 electrical connectors and position the driver air bag module.

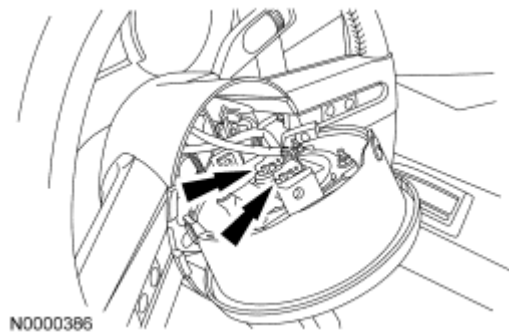


Fig. 135: Locating Driver Air Bag Module Electrical Connectors
Courtesy of FORD MOTOR CO.

12. Install the 2 driver air bag module bolts (1 shown).
 - Tighten to 7 Nm (62 lb-in).

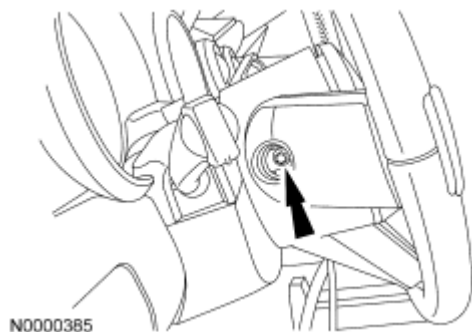


Fig. 136: Locating Driver Air Bag Module Bolts
Courtesy of FORD MOTOR CO.

13. Install the 2 driver air bag module bolt caps (1 shown) in the steering wheel.

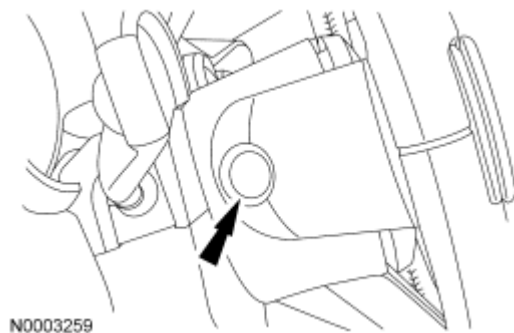


Fig. 137: Locating Driver Air Bag Module Bolt Caps
Courtesy of FORD MOTOR CO.

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

14. 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.
15. Turn the ignition switch from OFF to ON.
16. Install RCM fuse 17 (10A) to the SJB and close the cover.

WARNING: Make sure no one is in the vehicle and there is nothing blocking or placed in front of any air bag module when the battery is connected. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

17. Connect the battery ground cable.
18. Prove out the SRS as follows:

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

- fail to light.
- remain lit continuously.
- flash at a 5Hz rate (RCM not configured).

The air bag warning indicator might not light 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 warning 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 warning indicator and any SRS fault discovered must be diagnosed and repaired.

Clear all continuous DTCs from the RCM using a scan tool.

INSPECTION AND REPAIR AFTER A SUPPLEMENTAL RESTRAINT SYSTEM (SRS) DEPLOYMENT

WARNING: Remove restraint system diagnostic tools from the vehicle prior to road testing. If tools are not removed, the supplemental restraint system (SRS) device may not deploy in a crash. Failure to follow this instruction may result in serious personal injury or death in a crash and possibly violate vehicle safety standards.

- NOTE:** After diagnosing or repairing a Supplemental Restraint System (SRS), the restraint system diagnostic tools (if required) must be removed before operating the vehicle over the road.
- NOTE:** Deployable devices (such as air bag modules, pretensioners) may deploy alone or in various combinations depending on the impact event.
- NOTE:** Always refer to the appropriate workshop article procedures prior to carrying out vehicle repairs affecting the SRS and safety belt system.
- NOTE:** The SRS must be fully operational and free of faults before releasing the vehicle to the customer.

All vehicles

- NOTE:** Refer to the correct removal and installation procedure for all SRS components being installed.

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1. When any deployable device or combination of devices are deployed and/or the Restraints Control Module (RCM) has the DTC B1231 (Event Threshold Exceeded) in memory, the repair of the vehicle SRS is to include the removal of all deployed devices and the installation of new deployable devices, the removal and installation of new impact sensors, and the removal and installation of a new RCM. DTCs must be cleared from all required modules after repairs are carried out.

Vehicles with Occupant Classification Sensor (OCS) system

NOTE: After installation of new Occupant Classification Sensor (OCS) system components, carry out the Occupant Classification Sensor (OCS) System Reset procedure as instructed in the workshop article. Refer to the appropriate workshop article for OCS system removal and installation procedure.

2. When a vehicle has been involved in a collision and the Occupant Classification System Module (OCSM) has DTC B1231 stored in memory, the repair of the OCS system is to include the following procedures for the specified system:
 - For rail-type OCS system, inspect the passenger side floorpan for damage and repair as necessary. Install new OCS system rails.
 - For weight sensor bolt-type OCS system, inspect the passenger side floorpan for damage and repair as necessary. Install a new seat track with OCS system weight sensor bolts. DTC must be cleared from the OCSM before carrying out Occupant Classification Sensor (OCS) System Reset. Do not install a new OCSM unless DTC B1231 cannot be cleared.

NOTE: Most bladder-type OCSM do not store a DTC B1231 in memory after deployment. The DTC B1231 is stored only by the RCM.

- For bladder-type OCS system, inspect for damage and repair as necessary. If installation of an OCS system component is required, an OCS system service kit must be installed.

All vehicles

3. When any damage to the impact sensor mounting points or mounting hardware has occurred, repair or install new mounting points and mounting hardware as needed.
4. When the driver air bag module has deployed, a new clockspring must be installed.
5. New driver and/or front passenger safety belt systems (including retractors, buckles and height adjusters) must be installed if the vehicle is involved in a collision that results in deployment of the driver and/or front passenger safety belt pretensioners. For additional information, refer to **SAFETY BELT SYSTEM** article.
6. Inspect the entire vehicle for damage, including the following components:
 - Steering column (deployable column if equipped)
 - Instrument panel knee bolsters and mounting points
 - Instrument panel braces and brackets
 - Instrument panel and mounting points

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- Seats and seat mounting points
 - Safety belts, safety belt buckles and safety belt retractors. For additional information, refer to **SAFETY BELT SYSTEM** article
 - SRS wiring, wiring harnesses and connectors
7. After carrying out the review and inspection of the entire vehicle for damage, repair or install new components as needed.

PYROTECHNIC DEVICE DISPOSAL

Disposal of Deployable Devices and Pyrotechnic Devices That are Undeployed/Inoperative

WARNING: Always wear eye protection when servicing a vehicle. Failure to follow this instruction may result in serious personal injury.

NOTE: All inoperative air bag modules and safety belt pretensioners have been placed on the Mandatory Return List. All discolored or damaged air bag modules must be treated the same as any inoperative live air bag being returned.

1. Depower the Supplemental Restraint System (SRS). For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
2. Remove the undeployed/inoperative device. For additional information, refer to the appropriate procedure or **SAFETY BELT SYSTEM** article.

NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the Vehicle Identification Number (VIN) must be recorded and sent to Ford Motor Company.

3. If installing a new air bag module, record the necessary information and return the inoperative air bag module to Ford Motor Company.

Disposal of Deployable Devices and Pyrotechnic Devices That Are Deployed

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
2. Remove the deployed device. For additional information, refer to the appropriate procedure or **SAFETY BELT SYSTEM** article.

NOTE: If a dual stage driver or passenger air bag module has deployed due to a crash event, the air bag module requires manual deployment to make sure both stages have deployed before scrapping the vehicle or disposing of the air bag module. To determine if a vehicle is equipped with dual stage driver or passenger air bag modules, refer to the **DESCRIPTION AND OPERATION**.

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3. Dispose of the deployed device in the same manner as any other part to be scrapped.

Disposal of Deployable Devices and Pyrotechnic Devices That Require Manual Deployment

1. Safety and environmental concerns require consideration and treatment of restraints system deployable and pyrotechnic devices when disposing of vehicles, deployable devices or pyrotechnic devices. Deploying deployable and pyrotechnic devices before scrapping a vehicle or the device eliminates the potential for hazardous exposures or reactions during processing. If special handling procedures are followed, deployable and pyrotechnic devices can be deployed safely and recycled with the vehicle, shipped separately to a recycling facility or disposed of safely.

NOTE: To determine the deployable devices a vehicle is equipped with, refer to the **DESCRIPTION AND OPERATION**.

A vehicle equipped with any of the following deployable devices requires manual deployment of the devices before scrapping the vehicle or component. For additional information, refer to the appropriate portion of this procedure.

- Driver air bag module
- Passenger air bag module
- Seat side air bag modules
- Safety canopy modules
- Side air curtain modules

NOTE: To determine the pyrotechnic devices a vehicle is equipped with, refer to the **DESCRIPTION AND OPERATION**.

2. A vehicle equipped with any of the following pyrotechnic devices requires manual deployment of the devices before scrapping the vehicle or component. For additional information, refer to the appropriate portion of this procedure.
 - Safety belt buckle pretensioners
 - Safety belt retractor pretensioners
 - Adaptive load limiting retractors
 - Deployable steering column

NOTE: To determine if a vehicle is equipped with dual stage driver or passenger air bag modules, refer to the **DESCRIPTION AND OPERATION**.

3. If a dual stage driver or passenger air bag module has deployed due to a crash event, the air bag module requires manual deployment to make sure both stages have deployed before scrapping the vehicle or disposing of the air bag module. For additional information, refer to Driver Air Bag Module, Passenger Air Bag Module and Seat Side Air Bag Modules - Remote Deployment in this procedure.

Driver Air Bag Module, Passenger Air Bag Module and Seat Side Air Bag Modules - Remote Deployment

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WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

WARNING: Always carry or place a live safety canopy, or side air curtain module, with the module and tear seam pointed away from your body. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.

WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: For air bag modules with multiple loops, all the loops on the air bag module must be deployed.

NOTE: Some driver and passenger front air bags have 2 deployment stages. After a collision it is possible that Stage 1 has deployed and Stage 2 has not.

If a front air bag module has deployed, it is mandatory that the front air bag module be remotely deployed using the appropriate air bag disposal procedure.

NOTE: A typical air bag disposal is shown that is similar for all vehicles.

All driver, passenger and seat side air bag modules

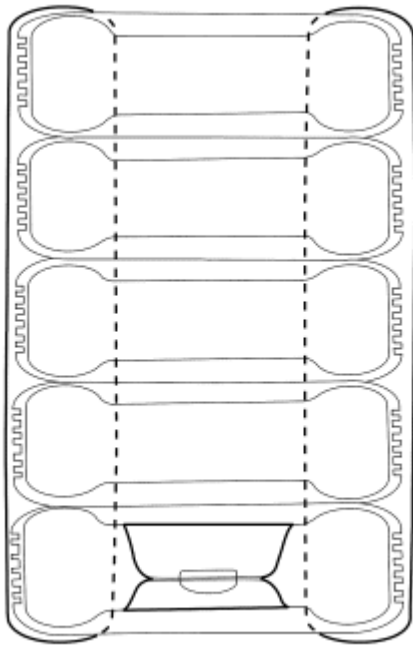
1. Make a container to house the air bag module for deployment.

NOTE: The tires must be of sufficient size to accommodate the air bag module.

- Obtain a tire and wheel assembly and an additional 4 tires (without wheels) of the same size.
- With the tire and wheel assembly on the bottom, stack the tires.
- Securely tie all of the tires together.

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N0033182

Fig. 138: Placing Air Bag Modules Inside Tire For Deployment
Courtesy of FORD MOTOR CO.

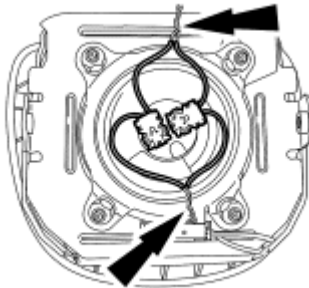
2. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
3. Remove the air bag module. For additional information, refer to the appropriate procedure.

NOTE: If the air bag module does not have a hardwired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the air bag module.

4. Cut each of the air bag module wires near the electrical connector that connects to the vehicle wire harness.
5. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

NOTE: Typical driver air bag module with 2 loops shown, other air bag modules with multiple loops similar.

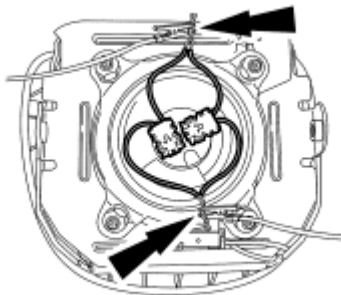
6. For air bag modules with multiple loops, twist together a wire from each loop then repeat for the remaining wires from each loop.



A0043898

Fig. 139: Locating Air Bag Module Wire Squibs
Courtesy of FORD MOTOR CO.

7. Make a jumper harness to deploy the air bag module.
 - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.
8. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the air bag module or to the twisted-together wires if multiple loops. Use tape or other insulating material to make sure that the leads do not make contact with each other.



A0043896

Fig. 140: Connecting Jumper Wires To Squibs
Courtesy of FORD MOTOR CO.

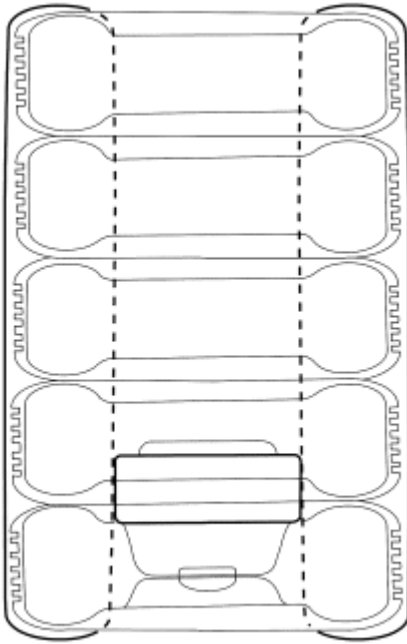
Driver air bag modules

NOTE: Make sure to maintain the connections to the air bag module.

9. With the stack of tires upright and the wheel on the bottom, carefully place the driver air bag module, with the trim cover facing up, on the wheel.

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N0033183

Fig. 141: Placing Driver Air Bag Modules Inside Tires For Deployment
Courtesy of FORD MOTOR CO.

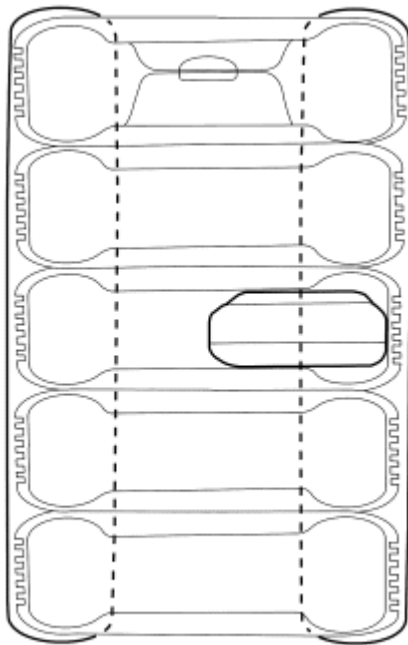
Passenger and seat side air bag modules

NOTE: Make sure to maintain the connections to the air bag module.

10. Tip the stack of tires on its side and place the air bag module inside the center tire, making sure that there are 2 tires beneath the tire containing the air bag module and 2 tires (including the tire and wheel assembly) above the tire containing the air bag module.
11. Place the tire stack upright, with the wheel on top.

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N0033184

Fig. 142: Identifying Passenger Or Seat Side Air Bag Modules Inside Center Tire
Courtesy of FORD MOTOR CO.

All driver, passenger and seat side air bag modules

12. Remain at least 9.14 m (30 ft) away from the air bag module.
13. From the end of the jumper harness that is not connected to the air bag module, disconnect the 2 wires of the jumper harness from each other.
14. Deploy the air bag module by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.
15. To allow for cooling, wait at least 10 minutes before approaching the deployed air bag module.
16. Dispose of the deployed air bag module in the same manner as any other part to be scrapped.

Safety Belt Buckle Pretensioners, Safety Belt Retractor Pretensioners and Adaptive Load Limiting Safety Belt Retractors - Remote Deployment

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud

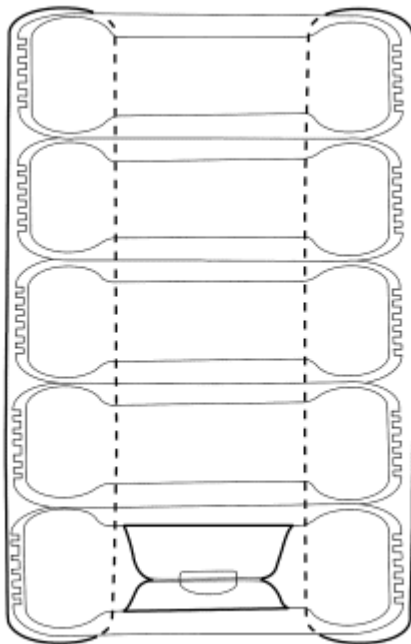
report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: A typical safety belt buckle and retractor disposal is shown that is similar for all vehicles.

1. Make a container to house the safety belt buckle or retractor for deployment.

NOTE: The tires must be of sufficient size to accommodate the safety belt buckle or retractor.

- Obtain a tire and wheel assembly and an additional 4 tires (without wheels) of the same size.
- With the tire and wheel assembly on the bottom, stack the tires.
- Securely tie all of the tires together.



N0033182

Fig. 143: Placing Air Bag Modules Inside Tire For Deployment
Courtesy of FORD MOTOR CO.

2. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
3. Remove the safety belt buckle or retractor. For additional information, refer to the appropriate procedure in **SAFETY BELT SYSTEM** article.
 - When deploying a safety belt buckle pretensioner, install a nut and bolt of sufficient length and of

the same diameter as was used to retain it to the seat.

NOTE: If the safety belt buckle or retractor does not have a hardwired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the safety belt buckle or retractor.

4. Cut each of the safety belt buckle or retractor wires near the electrical connector that connects to the vehicle wire harness.
5. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.
6. Make a jumper harness to deploy the safety belt buckle or retractor.
 - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.

NOTE: Typical safety belt retractor pretensioner shown, other safety belt buckle pretensioners and load limiting retractors similar.

7. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety belt buckle or retractor. Use tape or other insulating material to make sure that the leads do not make contact with each other.

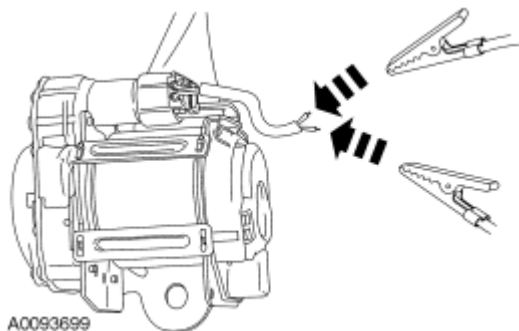


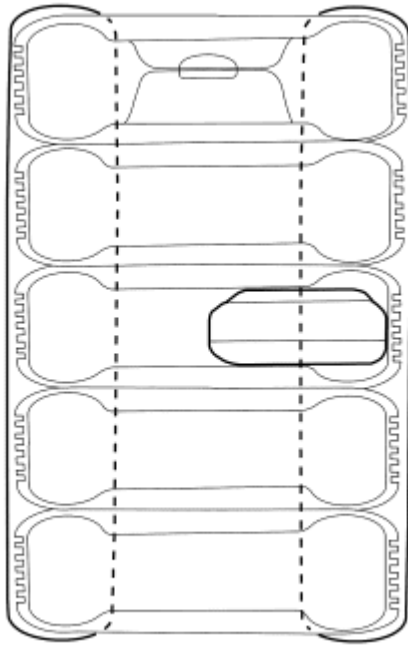
Fig. 144: Attaching Jumper Wires To Safety Belt Retractor Pretensioner
Courtesy of FORD MOTOR CO.

NOTE: Make sure to maintain the connections to the safety belt buckle or retractor.

8. Tip the stack of tires on its side and place the safety belt buckle or retractor inside the center tire, making sure that there are 2 tires beneath the tire containing the safety belt buckle or retractor and 2 tires (including the tire and wheel assembly) above the tire containing the safety belt buckle or retractor.
9. Place the tire stack upright, with the wheel on top.

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Fig. 145: Identifying Passenger Or Seat Side Air Bag Modules Inside Center Tire
Courtesy of FORD MOTOR CO.

10. Remain at least 9.14 m (30 ft) away from the safety belt buckle or retractor.
11. From the end of the jumper harness that is not connected to the safety belt buckle or retractor, disconnect the 2 wires of the jumper harness from each other.
12. Deploy the safety belt buckle or retractor by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.
13. To allow for cooling, wait at least 10 minutes before approaching the deployed safety belt buckle or retractor.
14. Dispose of the deployed safety belt buckle or retractor in the same manner as any other part to be scrapped.

Safety Belt Buckle Pretensioners, Safety Belt Retractor Pretensioners and Load Limiting Safety Belt Retractors - In-Vehicle Deployment

WARNING: Never probe the electrical connectors on safety belt buckle/retractor pretensioners or adaptive load limiting retractors. Failure to follow this instruction may result in the accidental deployment of the safety belt pretensioners or adaptive load limiting retractors, which increases the risk of serious personal injury or death.

WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud

report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: A typical safety belt buckle and retractor disposal is shown that is similar for all vehicles.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
2. Access the safety belt buckle or retractor electrical connectors. For additional information, refer to **SAFETY BELT SYSTEM** article.
3. Cut each of the safety belt buckle or retractor wires, leaving at least 101.6 mm (4 in) to work with.
4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.
5. Make a jumper harness to deploy the safety belt buckle or retractor.
 - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.

NOTE: Typical safety belt retractor pretensioner shown, other safety belt buckle pretensioners and load limiting retractors are similar.

6. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety belt buckle or retractor. Use tape or other insulating material to make sure that the leads do not make contact with each other.

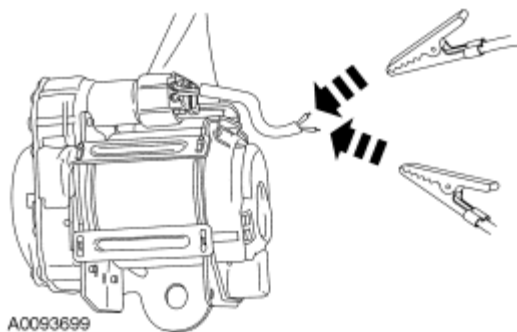


Fig. 146: Attaching Jumper Wires To Safety Belt Retractor Pretensioner
Courtesy of FORD MOTOR CO.

7. Remain at least 9.14 m (30 ft) away from the safety belt buckle or retractor.
8. From the end of the jumper harness that is not connected to the safety belt buckle or retractor, disconnect the 2 wires of the jumper harness from each other.
9. Deploy the safety belt buckle or retractor by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.
10. To allow for cooling, wait at least 10 minutes before approaching the deployed safety belt buckle or retractor.

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11. Dispose of the deployed safety belt buckle or retractor in the same manner as any other part to be scrapped.

Safety Canopy Modules and Side Air Curtain Modules - In-Vehicle Deployment

WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

NOTE: The safety canopy module deployment for a scrapped vehicle will occur in its installed position in the vehicle.

NOTE: A typical safety canopy module disposal is shown that is similar for all vehicles.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
2. Access the safety canopy/side air curtain module electrical connectors. For additional information, refer to the appropriate procedure.
3. Cut each of the safety canopy/side air curtain module wires leaving at least 101.6 mm (4 in) to work with.
4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.

NOTE: Typical safety canopy/side air curtain module with 2 loops shown, other safety canopy/side air curtain modules with 2 loops are similar.

5. For safety canopy/side air curtain modules with multiple loops, twist together a wire from each loop then repeat for the remaining wires from each loop.

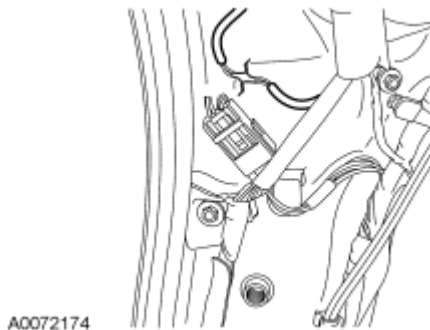


Fig. 147: Identifying Safety Canopy/Side Air Curtain Module Wire Squibs
Courtesy of FORD MOTOR CO.

6. Make a jumper harness to deploy the safety canopy/side air curtain module.

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- Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.
7. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the safety canopy/side air curtain module or to the twisted-together wires if multiple loops. Use tape or other insulating material to make sure that the leads do not make contact with each other.



Fig. 148: Connecting Jumper Harness To Twisted Wires
Courtesy of FORD MOTOR CO.

8. From the end of the jumper harness that is not connected to the safety canopy/side air curtain module, disconnect the 2 wires of the jumper harness from each other.
9. Deploy the safety canopy/side air curtain module by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.
10. To allow for cooling, wait at least 10 minutes before approaching the deployed safety canopy/side air curtain module.
11. Dispose of the deployed safety canopy/side air curtain module in the same manner as any other part to be scrapped.

Deployable Steering Column - In-Vehicle Deployment

WARNING: Deploy all supplemental restraint system (SRS) devices (air bags, pretensioners, load limiters, etc.) outdoors with all personnel at least 9.14 meters (30 feet) away to make sure of personal safety. Due to the loud report which occurs when an SRS device is deployed, hearing protection is required. Failure to follow these instructions may result in serious personal injury.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

NOTE: It may be necessary to lower or remove the deployable steering column from the instrument panel to access the deployable steering column electrical connector.

2. Access the deployable steering column electrical connector.

NOTE: If the deployable steering column does not have a hardwired pigtail, it will be necessary to cut the wires and connector(s) from the vehicle wire harness and reconnect to the deployable steering column.

3. Cut each of the deployable steering column wires, leaving at least 101.6 mm (4 in) to work with.
4. Remove any sheathing (if present) and strip the insulation from the ends of the cut wires.
5. Make a jumper harness to deploy the deployable steering column.
 - Obtain 2 wires (20 gauge minimum) at least 9.14 m (30 ft) long and strip both ends of each wire.
 - At one end of the jumper harness, connect the wires together.
6. Using the end of the jumper harness that the wires are not connected together, attach each wire of the jumper harness to each wire of the deployable steering column. Use tape or other insulating material to make sure that the leads do not make contact with each other.

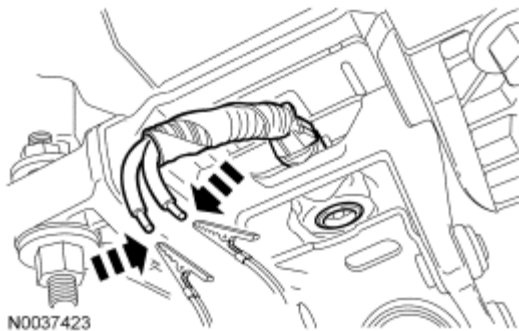


Fig. 149: Connecting Jumper Harness To Wires Of Deployable Steering Column
Courtesy of FORD MOTOR CO.

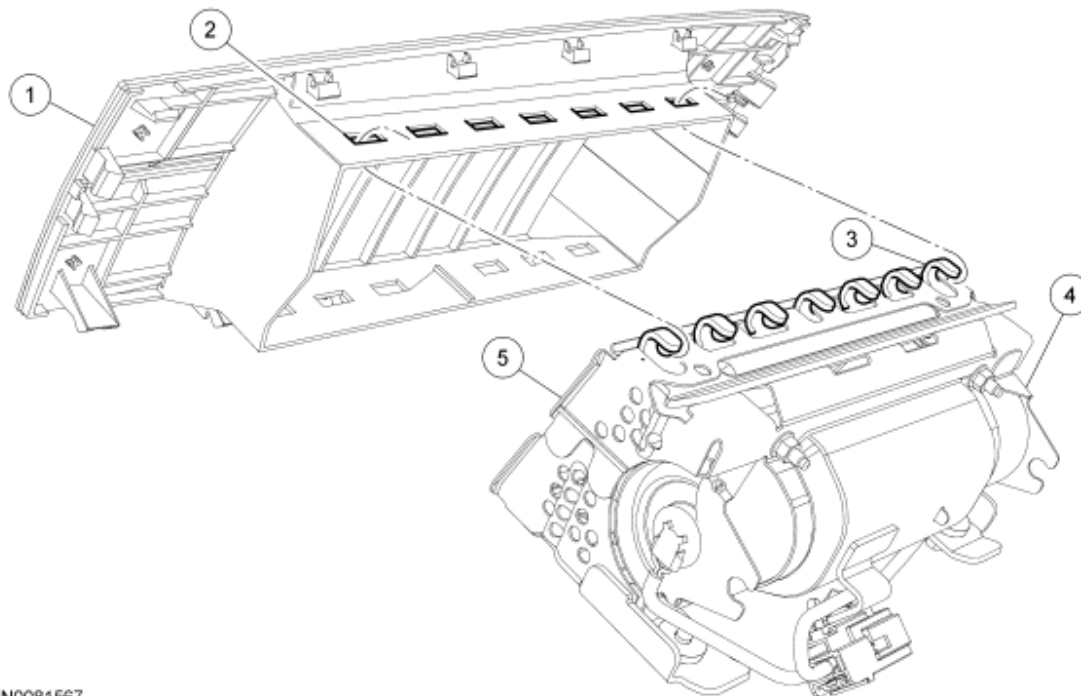
7. Remain at least 9.14 m (30 ft) away from the deployable steering column.
8. From the end of the jumper harness that is not connected to the deployable steering column, disconnect the 2 wires of the jumper harness from each other.
9. Deploy the deployable steering column by touching the ends of the 2 wires of the jumper harness to the terminals of a 12-volt battery.
10. To allow for cooling, wait at least 10 minutes before approaching the deployed steering column.
11. Dispose of the deployed steering column in the same manner as any other part to be scrapped.

REMOVAL AND INSTALLATION

AIR BAG TRIM COVER - PASSENGER

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N0081567

Fig. 150: Exploded View Of Passenger Air Bag Trim Cover
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	04338	Passenger air bag cover
2	-	Passenger air bag cover window (part of passenger air bag cover)
3	-	Passenger air bag canister hook (part of canister)
4	-	Passenger air bag canister (part of 044A74)
5	-	Passenger air bag soft pack (part of 044A74)

REMOVAL

WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

WARNING: Do not use any sharp tools to separate the passenger air bag module trim cover from the passenger air bag module canister. Sharp tools may damage the passenger air bag module. Failure to follow this instruction may result in the passenger air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

WARNING: Do not unpack or unroll the passenger air bag module soft pack. If the soft pack becomes unpacked or unrolled, install a new passenger air bag module assembly. Failure to follow these instructions may result in the passenger air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

WARNING: Do not manipulate or compromise the passenger air bag module hooks during the removal or installation procedure. Failure to follow this instruction may result in the passenger air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

1. Remove the passenger air bag module. For additional information, refer to **Passenger Air Bag Module**.
2. Place a mark on top of the passenger air bag module canister for correct installation.
3. Carefully lift the passenger air bag module cover from the bottom of the air bag module canister, separating the windows from the canister hooks.

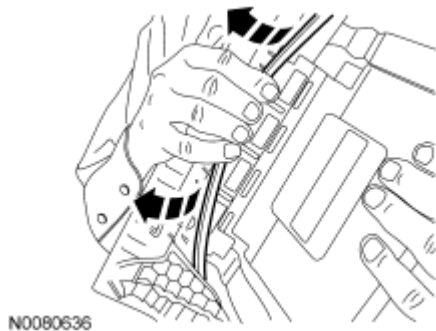


Fig. 151: Lifting Passenger Air Bag Module Cover From Bottom Of Air Bag Module Canister & Separating Windows From Canister Hooks
Courtesy of FORD MOTOR CO.

NOTE: Place an X mark on the old air bag cover to avoid reinstalling.

4. Remove the passenger air bag cover from the canister, separating the top windows from the canister hooks.

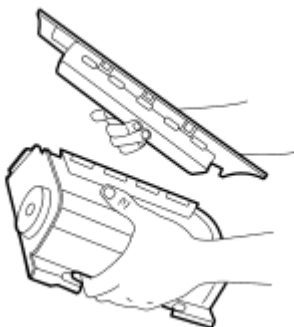


Fig. 152: Removing Passenger Air Bag Cover From Canister & Separating Top Windows From Canister Hooks

Courtesy of FORD MOTOR CO.

INSTALLATION

1. Place the passenger air bag cover on a clean work surface once it is removed from the shipping package.

WARNING: Carefully inspect the passenger air bag trim cover, canister and soft pack before assembly. If any foreign objects are found, remove them before attaching the passenger air bag trim cover to the canister. If the canister or soft pack is damaged, install a new passenger air bag module assembly. Failure to follow this instruction may result in the passenger air bag module deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

2. Match the number of cover windows to the number of canister hooks before attaching the passenger air bag cover to the canister.
3. Match the top of the passenger air bag cover with the canister mark from the removal procedure.
4. Position the canister onto the passenger air bag cover and engage the bottom hooks into the air bag cover windows.
5. Push the top of the passenger air bag cover to engage the top canister hooks.

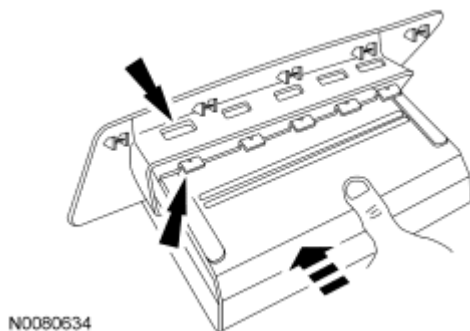


Fig. 153: Pushing Top Of Passenger Air Bag Cover To Engage Top Canister Hooks

Courtesy of FORD MOTOR CO.

6. Inspect the passenger air bag cover windows-to-canister hooks to verify that every window has a hook installed and the sides are not tucked or folded against the air bag canister.

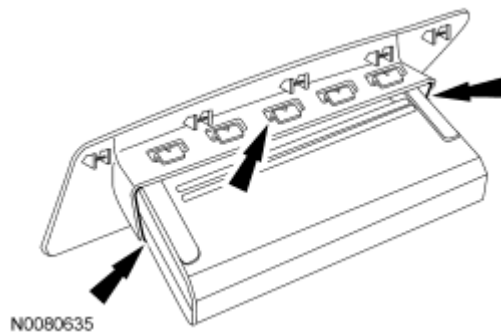


Fig. 154: Inspecting Passenger Air Bag Cover Windows-To-Canister Hooks To Verify Every Window Has A Hook Installed
Courtesy of FORD MOTOR CO.

7. Install the passenger air bag module. For additional information, refer to **Passenger Air Bag Module**.

NOTE: The video procedure utilizes a Fusion/Milan passenger air bag module assembly. It also applies to vehicles with similar passenger air bag module designs.

8.

RESTRAINTS CONTROL MODULE (RCM)

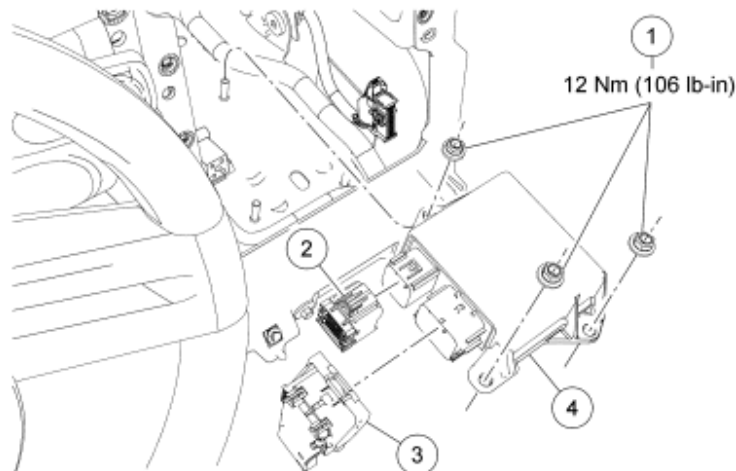


Fig. 155: Exploded View Of Restraints Control Module (RCM) With Torque Specification
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	W520111	Restraints Control Module (RCM) nuts (3 required)
2	-	RCM small connector (part of 14401)
3	-	RCM large connector (part of 14A005)

REMOVAL

WARNING: If a vehicle has been in a crash, inspect the restraints control module (RCM) and the impact sensor (if equipped) mounting areas for deformation. If damaged, restore the mounting areas to the original production configuration. A new RCM and sensors must be installed whether or not the air bags have deployed. Failure to follow these instructions may result in serious personal injury or death in a crash.

WARNING: Do not handle, move or change the original horizontal mounting position of the restraints control module (RCM) while the RCM is connected and the ignition switch is ON. Failure to follow this instruction may result in the accidental deployment of the safety canopy and cause serious personal injury or death.

NOTE: When installing a new Restraints Control Module (RCM), it is necessary to carry out Programmable Module Installation (PMI). System failure may occur if PMI is not performed. For additional information, refer to MODULE CONFIGURATION article.

NOTE: When installing a new Restraints Control Module (RCM) always make sure the correct RCM is being installed. If an incorrect RCM is installed, erroneous DTCs will result.

NOTE: The air bag warning indicator illuminates when the correct RCM fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. If installing a new RCM, carry out the steps necessary to prepare for Programmable Module Installation (PMI). For additional information, refer to MODULE CONFIGURATION article.
2. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering.
3. Remove the instrument panel center finish panel. For additional information, refer to the appropriate procedure in INSTRUMENT PANEL AND CONSOLE article.
4. Disconnect the large RCM electrical connector.
 1. Pinch the thumb tab and pivot the connector position assurance lever all the way back until it stops.
 2. Pull out and disconnect the large RCM electrical connector.

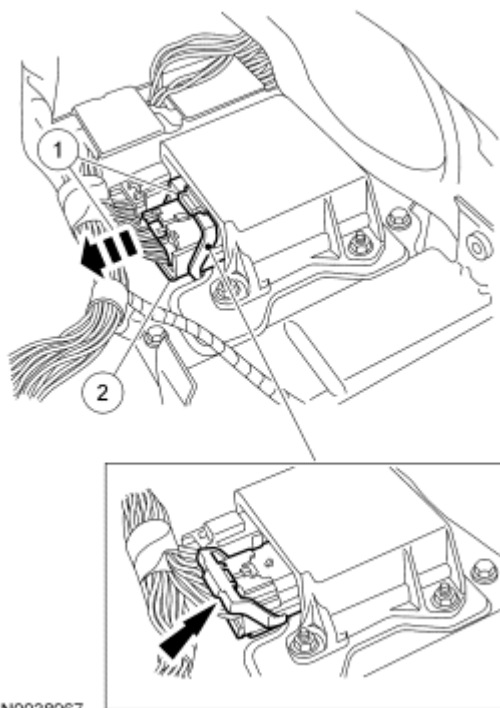


Fig. 156: Locating RCM Electrical Connector
Courtesy of FORD MOTOR CO.

5. Disconnect the small RCM electrical connector.
6. Remove the 3 nuts and RCM.

INSTALLATION

WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

1. Position the RCM and install the nuts.
 - Tighten to 12 Nm (106 lb-in).
2. Connect the small RCM electrical connector.
3. Make sure the large RCM connector position assurance lever is in the full release position before attempting to connect the connector.

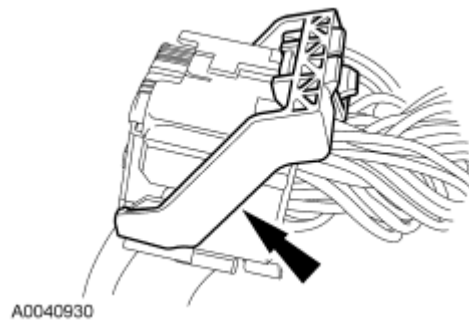


Fig. 157: View Of Connector Position Assurance Lever
Courtesy of FORD MOTOR CO.

NOTE: Putting the large RCM electrical wiring connector into the RCM on an angle can cause bad electrical connections and damage components.

NOTE: Do not push the connector to where the lever pivots and seats itself. Light pressure is needed to get the connector into position on the RCM before using the lever to fully seat the connector.

4. Connect the large RCM electrical wiring connector.
 - Using the connector position assurance lever, pivot it toward the RCM, drawing the connector into the RCM.
 - Make sure the thumb tab is engaged to the retainer on the RCM and locked in place.

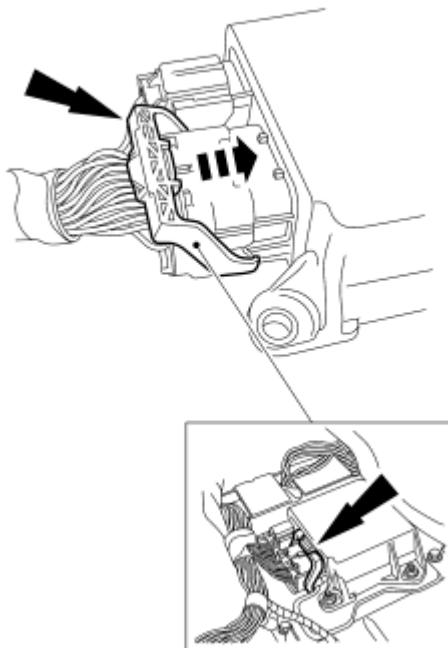


Fig. 158: Locating Large RCM Electrical Connector
Courtesy of FORD MOTOR CO.

5. Install the instrument panel center finish panel. For additional information, refer to the appropriate procedure in **INSTRUMENT PANEL AND CONSOLE** article.
6. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
7. If a new RCM was installed, carry out the steps necessary for PMI. For additional information, refer to **MODULE CONFIGURATION** article.

DRIVER AIR BAG MODULE

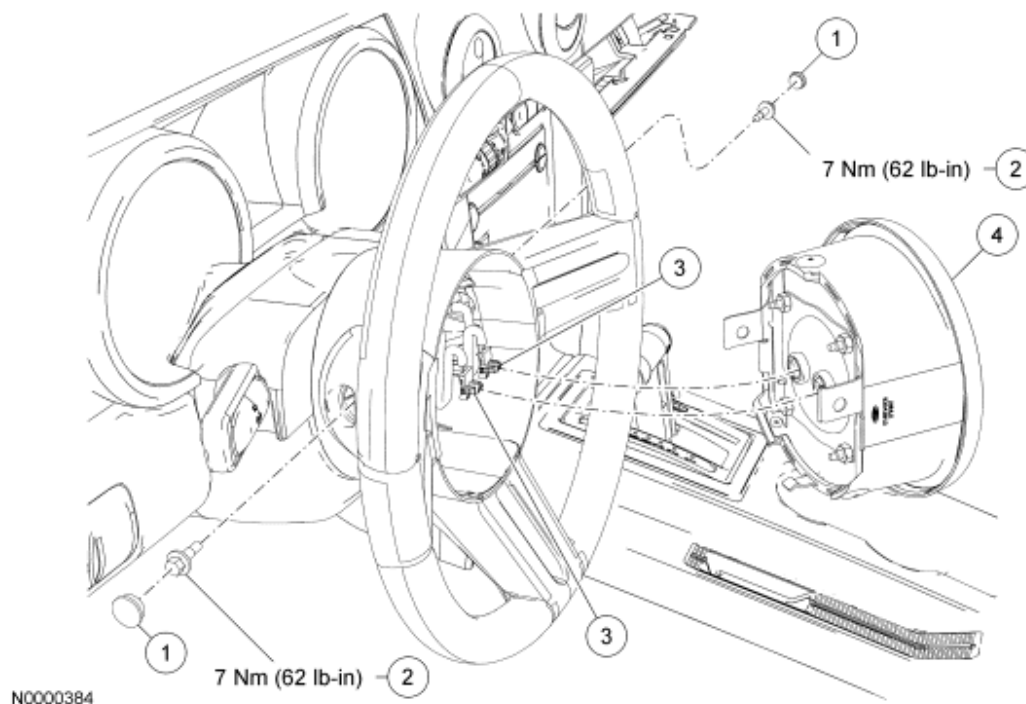


Fig. 159: Exploded View Of Driver Air Bag Module With Torque Specifications
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	3L518	Driver air bag module bolt caps (2 required)
2	W506411	Driver air bag module bolts (2 required)
3	-	Driver air bag module electrical connectors (part of 14A664)
4	043B13	Driver air bag module

REMOVAL

WARNING: Always carry or place a live air bag module with the air bag and

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deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
2. Remove the 2 driver air bag module bolt caps.

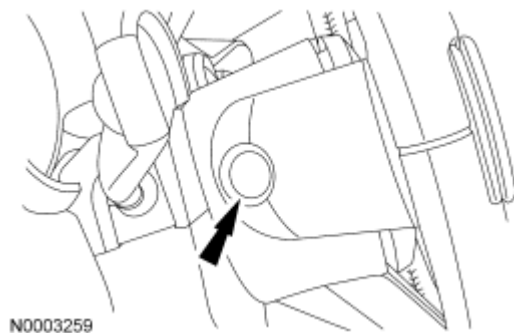


Fig. 160: Locating Driver Air Bag Module Bolt Caps
Courtesy of FORD MOTOR CO.

3. Remove the 2 driver air bag module bolts.
 - To install, tighten to 7 Nm (62 lb-in).

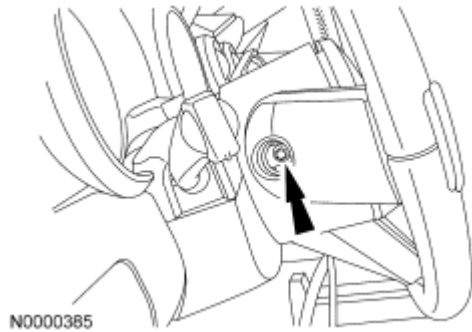


Fig. 161: Locating Driver Air Bag Module Bolts
Courtesy of FORD MOTOR CO.

4. Disconnect the 2 driver air bag module electrical connectors and remove the driver air bag module.

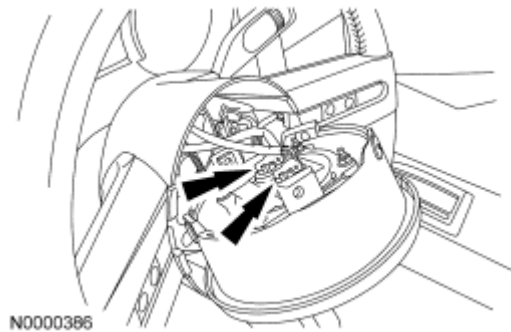


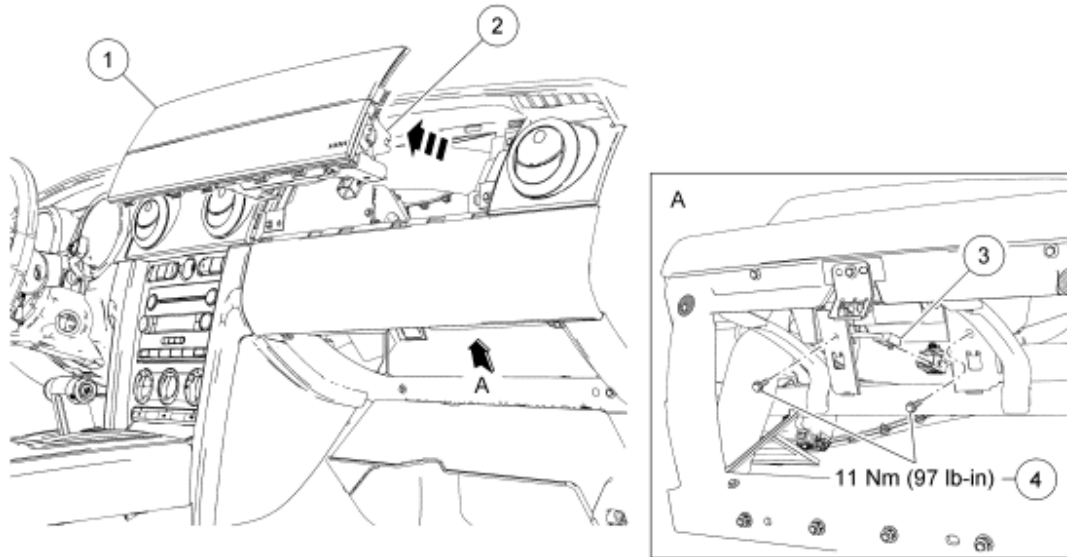
Fig. 162: Locating Driver Air Bag Module Electrical Connectors
Courtesy of FORD MOTOR CO.

5. To install, reverse the removal procedure.
6. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

PASSENGER AIR BAG MODULE

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N0082301

Fig. 163: Exploded View Of Passenger Air Bag Module With Torque Specification
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	04338	Passenger air bag cover
2	044A74	Passenger air bag module assembly
3	-	Passenger air bag module electrical connector (part of 14401)
4	W505252	Passenger air bag module bolts (2 required)

REMOVAL AND INSTALLATION

WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

NOTE: Do not install a new passenger air bag module assembly due to a damaged or

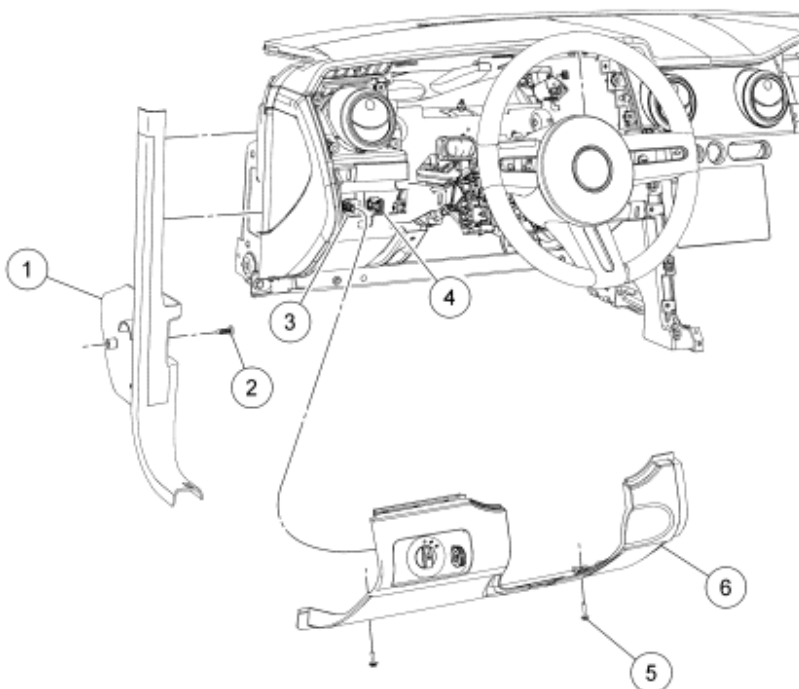
discolored passenger air bag cover. The passenger air bag cover can be serviced separately from the passenger air bag module assembly. For additional information, refer to Air Bag Trim Cover - Passenger.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering.
2. Lower the glove compartment door and disconnect the passenger air bag module electrical connector.
3. Remove the 2 air bag module bolts.
 - To install, tighten to 11 Nm (97 lb-in).
4. Through the glove box opening, release the passenger air bag cover clips (6 upper, 6 lower and 2 on each side) from the instrument panel and then remove the passenger air bag module.
5. To install, reverse the removal procedure.
6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering.

CLOCKSPRING



N0074211

Fig. 164: Exploded View Of Clockspring

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Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	A30A64	LH A-pillar lower trim panel
2	W505156	LH A-pillar lower trim panel screw
3	-	Headlamp switch electrical connector (part of 14401)
4	-	Courtesy lamp switch electrical connector (part of 14401)
5	W505156	Steering column opening cover screw (2 required)
6	04459	Steering column opening cover

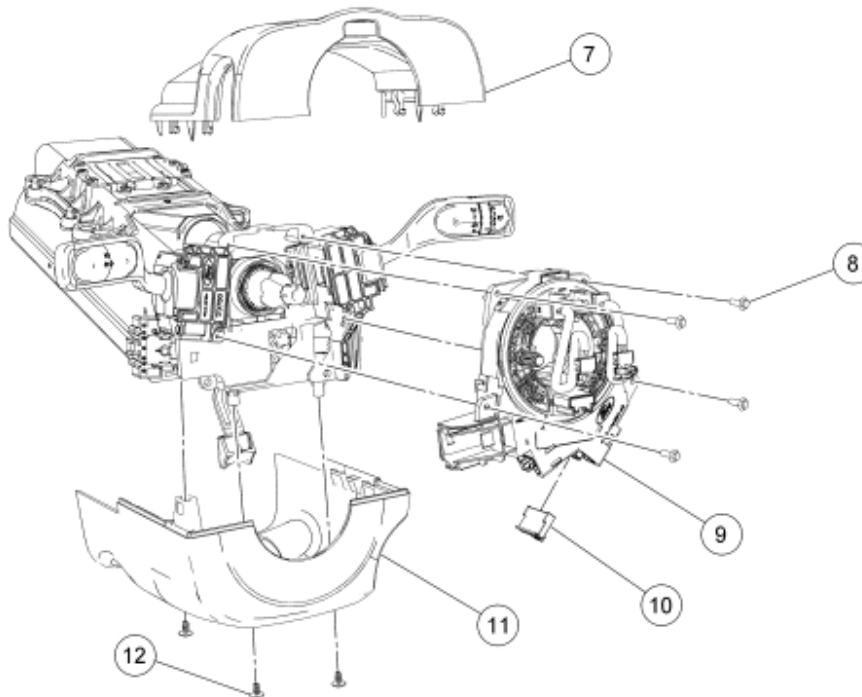


Fig. 165: Exploded View Of Upper Steering Column Shroud
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
7	3530	Upper steering column shroud
8	-	Clocksring screw (part of 14A644) (4 required)
9	14A644	Clocksring
10	-	Clocksring electrical connector (part of 14401)
11	3K512	Lower steering column shroud

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12	W504041	Lower steering column shroud screw (3 required)
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REMOVAL

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
2. Make sure the road wheels are in the straight-ahead position.
3. Tilt the steering wheel in the downward position and lock the tilt handle.
4. Remove the driver air bag module. For additional information, refer to **Driver Air Bag Module**.
5. Remove the LH A-pillar lower trim panel.
6. Remove the 2 screws and the steering column opening cover.
 - Disconnect the headlamp and courtesy light switches electrical connectors.
7. Remove the 3 lower steering column shroud screws.
8. Remove the upper steering column shroud.
9. Remove the lower steering column shroud.
10. Remove the steering wheel. For additional information, refer to **STEERING COLUMN** article.

NOTE: If the clockspring is to be reinstalled, do not allow the clockspring to turn from its removal position.

11. If reusing the clockspring, tape the clockspring center rotor to the outer housing to keep it from rotating.

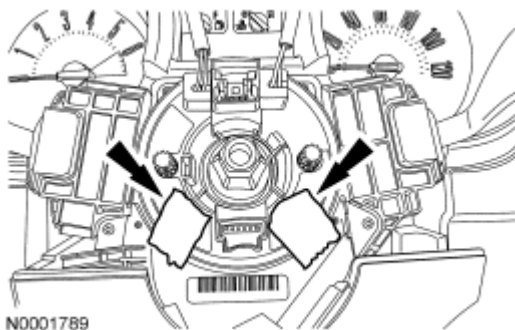


Fig. 166: Locating Upper Steering Column Shroud
Courtesy of FORD MOTOR CO.

NOTE: The tilt steering column mechanism is spring loaded, carefully release the

tilt handle while repositioning.

12. Carefully position the steering column up and leave the tilt handle in the unlocked position.
13. Disconnect the clockspring electrical connector.

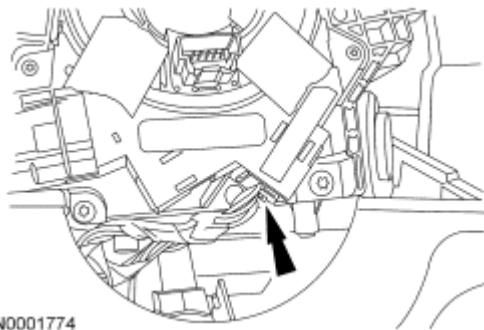


Fig. 167: Locating Clockspring Electrical Connector
Courtesy of FORD MOTOR CO.

14. Remove the 4 screws and clockspring.

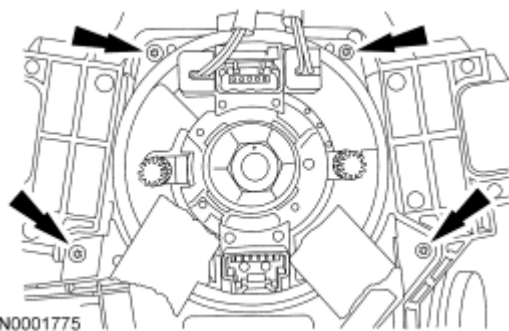


Fig. 168: Locating Clockspring Screws
Courtesy of FORD MOTOR CO.

INSTALLATION

Vehicles needing clockspring recentering

WARNING: If the clockspring is not correctly centralized, it may fail prematurely. If in doubt, repeat the centralizing procedure. Failure to follow these instructions may increase the risk of serious personal injury or death in a crash.

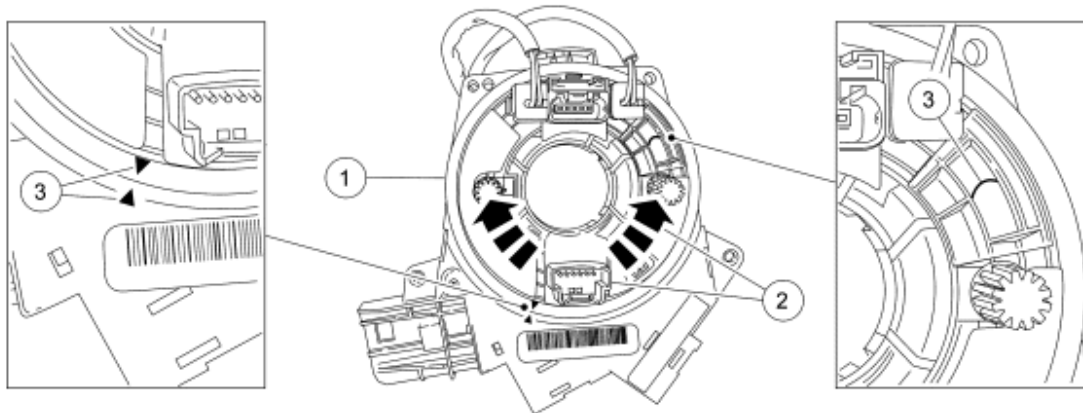
NOTE: Make sure the road wheels are in the straight-ahead position. Failure to follow this instruction may damage the clockspring.

1. If the vehicle's clockspring has rotated out of center, follow these steps to center the clockspring.

1. Hold the clockspring outer housing stationary.

NOTE: **Overturning will destroy the clockspring. The internal ribbon wire acts as the stop and can be broken from its internal connection.**

2. While turning the rotor counterclockwise, carefully feel for the ribbon wire to run out of length and for a slight resistance. Stop turning at this point.
3. Turn the clockspring clockwise (approximately 3 turns) until the ribbon wire shows anywhere across the window (window will be near the 2 o'clock position) and the arrow on the rotor lines up with the arrow on the bottom left of the housing. Clockspring is now centered.
 - Do not allow the rotor to turn from this position.



N0000901

Fig. 169: Centering Clockspring
Courtesy of FORD MOTOR CO.

All vehicles

2. Install the clockspring and 4 screws.
3. Connect the clockspring electrical connector.
4. Position the lower steering column shroud upward.
5. Carefully position the steering column down and place the tilt handle in the locked position.
6. Install the upper steering column shroud.
7. Install the 3 lower steering column shroud screws.
8. Connect the headlamp and courtesy light switches electrical connectors and install the steering column opening cover and 2 screws.
9. Install the LH A-pillar lower trim panel.

Vehicle repairs reusing the same clockspring

NOTE: When the tape is removed, do not allow the clockspring to turn.

10. Remove the tape applied during clockspring removal.

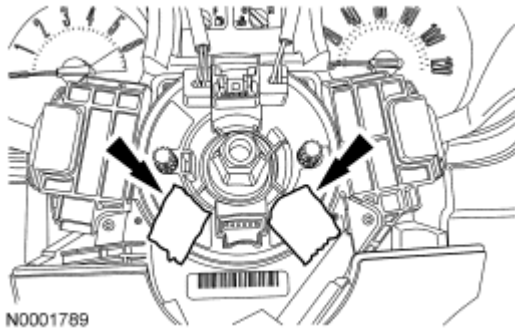


Fig. 170: Locating Upper Steering Column Shroud
Courtesy of FORD MOTOR CO.

Vehicles installing a new clockspring

NOTE: Do not rotate the new clockspring between removing the sealing key and installing the steering wheel. If the vehicle is left unattended by the technician between removing the sealing key and installing the steering wheel, carry out the centralizing procedure. Failure to follow this instruction may result in component damage and/or system failure.

11. Remove the sealing key.

NOTE: If the vehicle is left unattended by the technician between centralizing the clockspring and installing the steering wheel, to prevent damage to the clockspring, the centralizing procedure must be repeated.

12. Install the steering wheel. For additional information, refer to **STEERING SYSTEM - GENERAL INFORMATION** article.
13. Install the driver air bag module. For additional information, refer to **Driver Air Bag Module**.
14. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

FRONT IMPACT SEVERITY SENSOR

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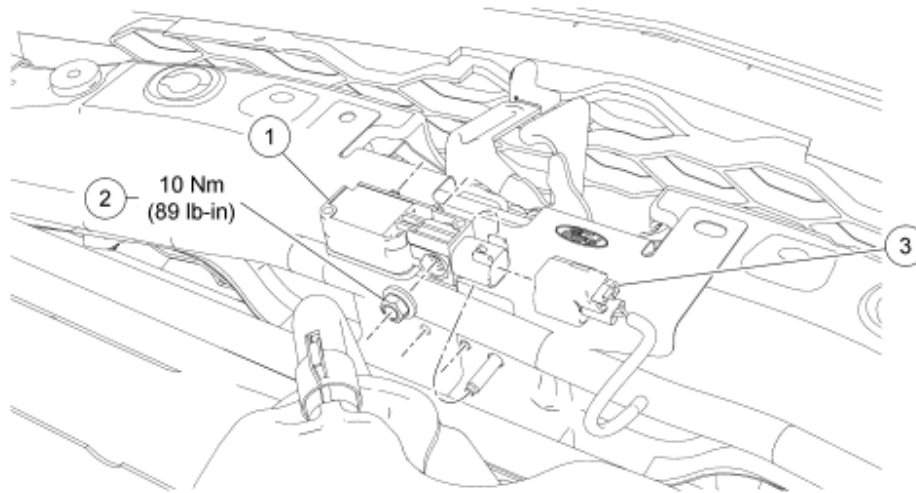


Fig. 171: Exploded View Of Front Impact Severity Sensor With Torque Specification
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	14B345	Front impact severity sensor
2	W520111	Front impact severity sensor nut
3	-	Front impact severity sensor electrical connector (part of 14290)

REMOVAL AND INSTALLATION

WARNING: If a vehicle has been in a crash, inspect the restraints control module (RCM) and the impact sensor (if equipped) mounting areas for deformation. If damaged, restore the mounting areas to the original production configuration. A new RCM and sensors must be installed whether or not the air bags have deployed. Failure to follow these instructions may result in serious personal injury or death in a crash.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**
2. Remove the 6 retainers and radiator upper air deflector.

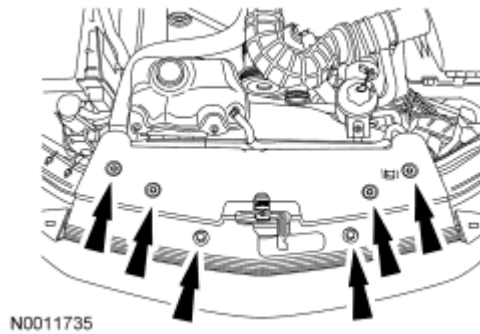


Fig. 172: Locating Pin-Type Retainers And Radiator Sight Shield
 Courtesy of FORD MOTOR CO.

3. Disconnect the front impact severity sensor electrical connector.
4. Remove the nut and front impact severity sensor.
 - To install, tighten to 10 Nm (89 lb-in).

WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTE: Before installation, make sure the front impact severity sensor mating surfaces are clean and free of corrosion and dirt.

5. To install, reverse the removal procedure.
6. Repower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering.

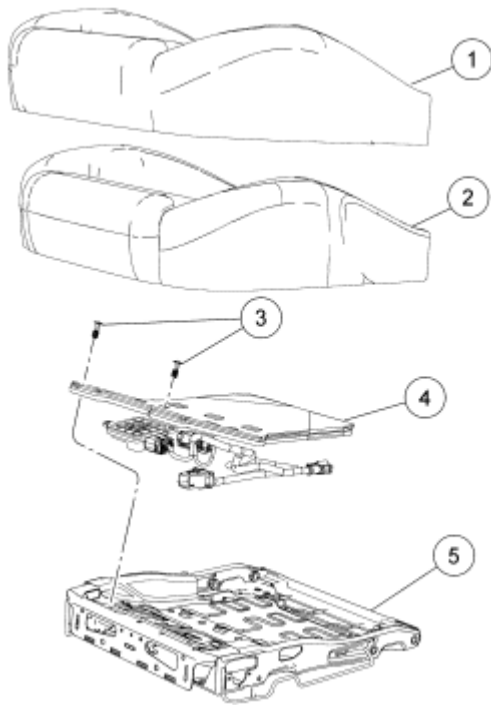
OCCUPANT CLASSIFICATION SENSOR

Special Tools

Illustration	Tool Name	Tool Number
 ST2834-A	Vehicle Communication Module (VCM) and Integrated Diagnostic System (IDS)	software with appropriate hardware, or equivalent scan tool

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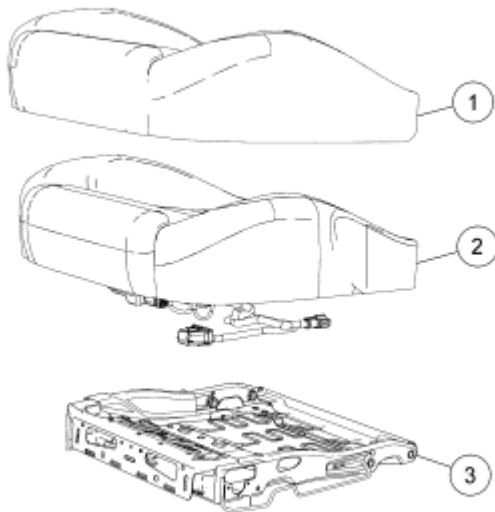
N0050182

Fig. 173: Exploded View Of Seat with OEM Occupant Classification Sensor (OCS) System
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	62900	Seat cushion trim cover
2	-	Seat cushion foam pad
3	-	Pin-type retainers
4	-	Occupant Classification Sensor (OCS) system (bladder, hose with pressure sensor, Occupant Classification System Module (OCSM) and wiring harness)
5	63100	Seat cushion frame assembly

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N0050183

Fig. 174: Exploded View Of Seat with a OCS System Service Kit
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	62900	Seat cushion trim cover
2	632A22	OCS system service kit (seat cushion foam pad, bladder, hose with pressure sensor, OCSM and wiring harness)
3	63100	Seat cushion frame assembly

REMOVAL

WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

NOTE: To prevent system failure, it is necessary to carry out the Occupant Classification Sensor (OCS) system reset when a front passenger seat cushion is disassembled, a new trim cover installed or an OCS system service kit is installed. A scan tool is used to carry out the OCS system reset command.

NOTE: The heater mat on the front passenger seat cushion is not serviceable separately. If a new heater mat is needed on the front passenger seat cushion, a

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new Occupant Classification Sensor (OCS) system service kit equipped with a heater mat must be installed.

NOTE: OCS system components (seat cushion foam pad, bladder with pressure sensor and Occupant Classification System Module (OCSM) 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, OCSM and seat wiring harness) must be installed as an assembly.

NOTE: To identify between a production OCS system and a OCS system service kit inspect the OCSM electrical connector. A production OCS system allows the disconnect of the OCSM electrical connector. A OCS system service kit has the OCSM electrical connector glued to the module. It cannot and should not be disconnected or altered.

NOTE: The air bag warning indicator illuminates when the correct RCM fuse is removed and the ignition is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

All seats

1. Remove the passenger seat. For additional information, refer to **SEATING** article.
2. Remove the seat backrest. For additional information, refer to **SEATING** article.
3. Remove the seat track. For additional information, refer to **SEATING** article.
4. Release all the seat cushion trim cover J-clips and the pin-type retainer from the seat cushion frame assembly.

NOTE: Use care when separating the seat cushion trim cover from the hook-and-loop strip, or the hook-and-loop strip can be torn from the seat cushion foam pad.

5. Remove the hog rings and cushion trim cover from the foam pad.

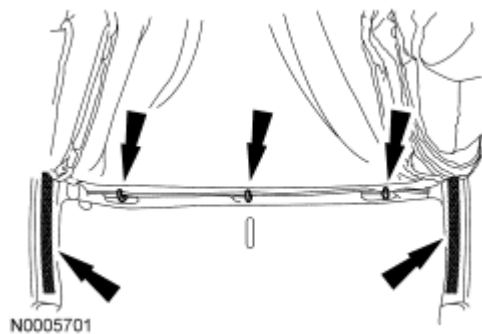


Fig. 175: Locating Hog Rings And Hook And Loop Fasteners
Courtesy of FORD MOTOR CO.

NOTE: OEM OCS pressure sensor shown, OCS system service kit pressure sensor similar.

6. Bend to release the retaining tab and remove the pressure sensor from the bracket.

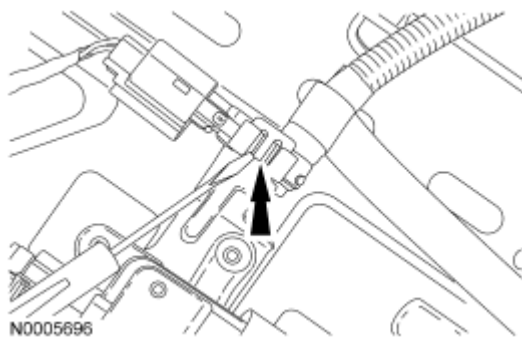


Fig. 176: Removing Pressure Sensor From Bracket
Courtesy of FORD MOTOR CO.

Seats with power

7. Disconnect the seat control switch electrical connector from the cushion side shield.

All seats

NOTE: Note position of wire harness routing for installation.

8. Release all the seat wire harness routing clips and electrical connector retainers from the seat cushion frame.

Seats with an OEM Occupant Classification Sensor (OCS)

9. Release the 2 OCS system bladder pin-type retainers and separate it from the seat cushion frame.

All seats

10. Remove the rivets and separate the OCSM from the seat cushion frame bracket.

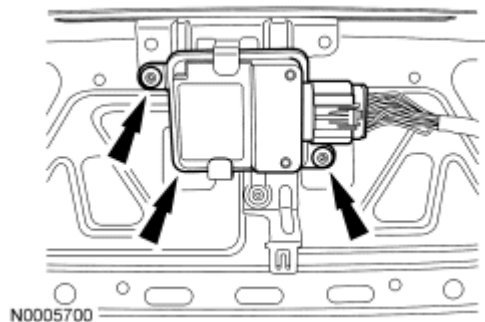


Fig. 177: Locating Rivets Of ECU
Courtesy of FORD MOTOR CO.

NOTE: Note position of hose routing for installation.

11. Remove the OCS system from the seat cushion frame assembly.
 - Feed the hose, pressure sensor, wire harness, electrical connector and OCSM through the opening in the seat cushion frame.

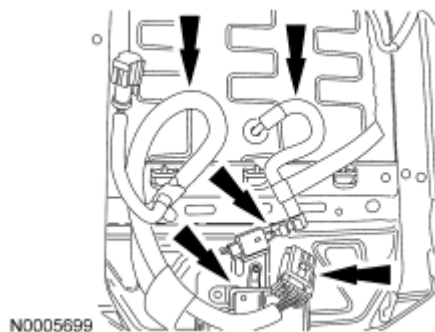


Fig. 178: Locating Pressure Sensor, Wire Harness, Electrical Connectors And ECU
Courtesy of FORD MOTOR CO.

INSTALLATION

All seats

WARNING: Install a new occupant classification sensor (OCS) system service kit as a complete assembly. Never install only part of the kit components. Failure to follow this instruction may result in incorrect operation of the OCS system and increases the risk of serious personal injury or death in a crash.

NOTE: Failure to route the seat Occupant Classification Sensor (OCS) system components through the correct seat cushion support opening may cause component failure.

NOTE: While positioning the seat cushion frame and Occupant Classification Sensor (OCS) system assembly, be careful not to damage any of the components. Failure to do so may result in component failure.

1. Position the OCS system components to the seat cushion frame as noted during removal.
 - Feed the hose, pressure sensor, wire harness, electrical connector and the OCSM through the seat cushion frame.

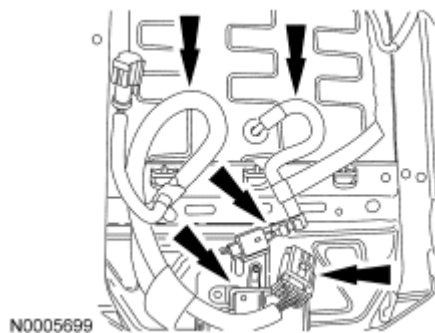


Fig. 179: Locating Pressure Sensor, Wire Harness, Electrical Connectors And ECU
Courtesy of FORD MOTOR CO.

NOTE: Make sure the OCSM is correctly secured to the bracket.

2. Position the OCSM onto the seat cushion frame bracket and install new rivets.

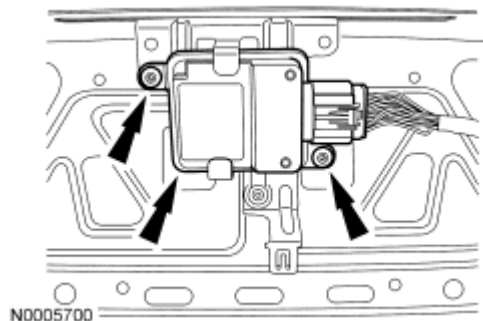


Fig. 180: Locating Rivets Of ECU
Courtesy of FORD MOTOR CO.

3. Bend the retaining tab back on the pressure sensor bracket.

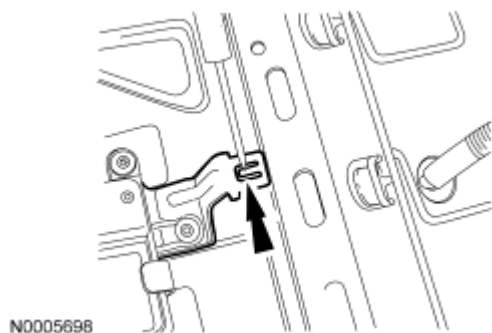


Fig. 181: Locating Retaining Tab Back On Pressure Sensor Bracket
Courtesy of FORD MOTOR CO.

Seats with an OCS system service kit

4. Position the OCS service kit foam pad and attach the 2 pin-type retainers to the seat cushion frame assembly.

Seats with a production OCS system

5. Attach the 2 OCS system bladder pin-type retainers to the seat cushion frame assembly.

All seats

6. Attach all the seat wire harness routing clips and electrical connector retainers to the cushion frame.

Seats with power

7. Connect the seat control switch electrical connector to the cushion side shield.

All seats

8. Install the pressure sensor onto the seat cushion frame bracket, making sure the retaining tab is completely engaged.
 - When installed correctly, an audible click will be heard and the pressure sensor will not be able to be removed from its bracket without disengaging the retaining tab.

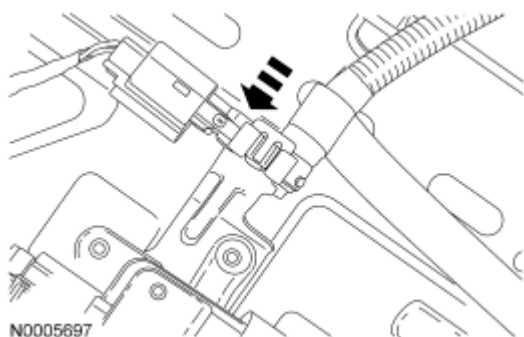


Fig. 182: Installing Pressure Sensor Onto Cushion Frame Bracket
Courtesy of FORD MOTOR CO.

9. Install the seat cushion trim cover and hog rings to the seat cushion foam pad.

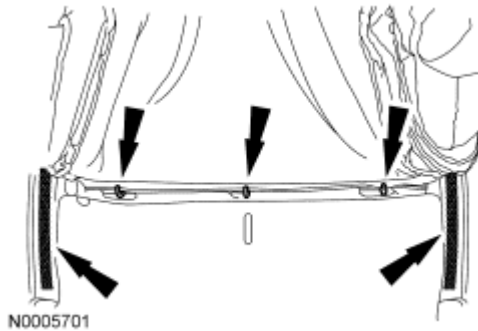


Fig. 183: Locating Hog Rings And Hook And Loop Fasteners
Courtesy of FORD MOTOR CO.

10. Fasten the seat cushion trim cover J-clips, hook-and-loop strips and pin-type retainer to the seat cushion frame.
11. Install the seat track. For additional information, refer to **SEATING** article.
12. Install the seat backrest. For additional information, refer to **SEATING** article.
13. Install the passenger seat. For additional information, refer to **SEATING** article.
14. Repower the SRS. **Do not** prove out the SRS at this time For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.

NOTE: To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:

- Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8.0 volts and less than 18.0 volts.
- Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS 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, 6°C to 36°C (42°F to 97°F) for a minimum of 30 minutes.
- Make sure nothing is present on the passenger seat before carrying

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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 carrying out the OCS system reset process.**

15. Carry out the OCS system reset. **If the system reset was successful, proceed to step 19, otherwise proceed to step 16.**
16. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following:
 - OCS system wiring
 - Check the pressure sensor hose for kinks and/or damage
 - Related seat wiring harness, body wiring harness terminals and connectors
17. If the damage is found, repair and/or install new components as necessary.
18. Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit.

NOTE: The ignition switch must be cycled after the OCS system reset.

19. Prove out the SRS as follows:

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

- fail to light.
- remain lit continuously.
- flash at a 5Hz rate (RCM not configured).

The air bag warning indicator might not light 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 RCM. If the air bag warning 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 warning indicator and any SRS fault discovered must be diagnosed and repaired.

Clear all continuous DTCs from the RCM using a scan tool.

NOTE: A prepaid return postcard is provided with a new OCS system service kit. The serial number for the new part and the Vehicle Identification Number (VIN) must be recorded and sent to Ford Motor Company.

20. If a new OCS system service kit was installed, fill out the necessary information on the OCS system

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traceability card and return it along with the complete inoperative OCS system to Ford Motor Company.

- When returning the inoperative OCS system include: seat cushion foam pad, bladder, OCSM, pressure sensor (transducer), hose, electrical connectors and wire harness (service part OCS only).

PASSENGER AIR BAG DEACTIVATION (PAD) INDICATOR

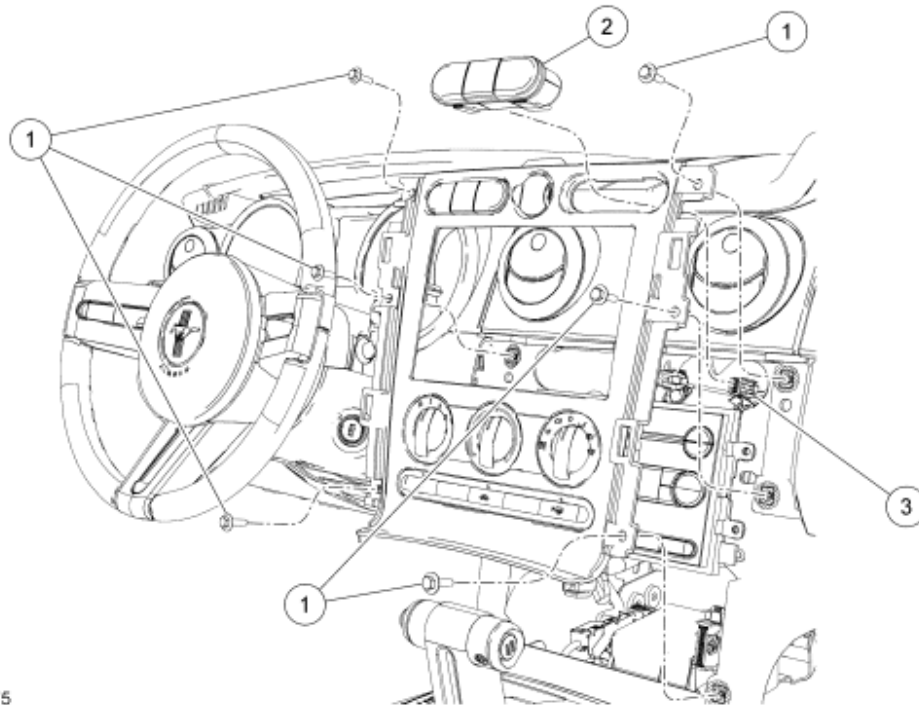


Fig. 184: Exploded View Of Passenger Air Bag Deactivation (PAD) Indicator
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	-	Center instrument panel finish panel screws
2	13D734	Passenger Air Bag Deactivation (PAD) indicator
3	-	PAD indicator electrical connector (part of 14401)

NOTE: The Passenger Air Bag Deactivation (PAD) indicator is part of the Hazard/Traction control switch assembly.

NOTE: The Ignition must be in OFF position if disconnecting the PAD indicator electrical connector. Otherwise, a DTC will be set in the Restraints Control Module (RCM) memory and must be cleared before releasing the vehicle.

1. Turn the ignition the OFF and wait at least one minute.

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2. Remove the instrument panel center finish panel. For additional information, refer to the appropriate procedure in **INSTRUMENT PANEL AND CONSOLE** article.
3. Release the 4 tabs (2 upper and 2 lower) on the PAD indicator and remove it from the instrument panel center finish panel.
4. To install, reverse the removal procedure.
5. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

SEAT POSITION SENSOR

NOTE: Power seat track shown, manual seat track similar.

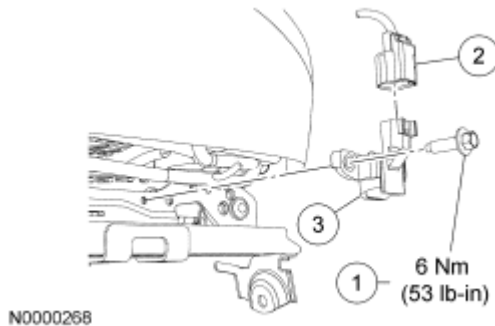


Fig. 185: Exploded View Of Seat Position Sensor With Torque Specification
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	-	Seat position sensor bolt
2	-	Seat position sensor electrical connector (part of 14A699)
3	14B416	Seat position sensor

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Position the front seat to the rearmost and upward position.
2. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.
3. Disconnect the seat position sensor electrical connector.

WARNING: Always tighten the seat position sensor retaining bolt to specified

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torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTE: **Note the position of the seat position sensor locating tab for installation.**

4. Remove the bolt and seat position sensor.
 - To install, tighten to 6 Nm (53 lb-in).
5. To install, reverse the removal procedure.
6. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

SIDE AIR BAG MODULE

NOTE: **Driver seat shown, passenger similar.**

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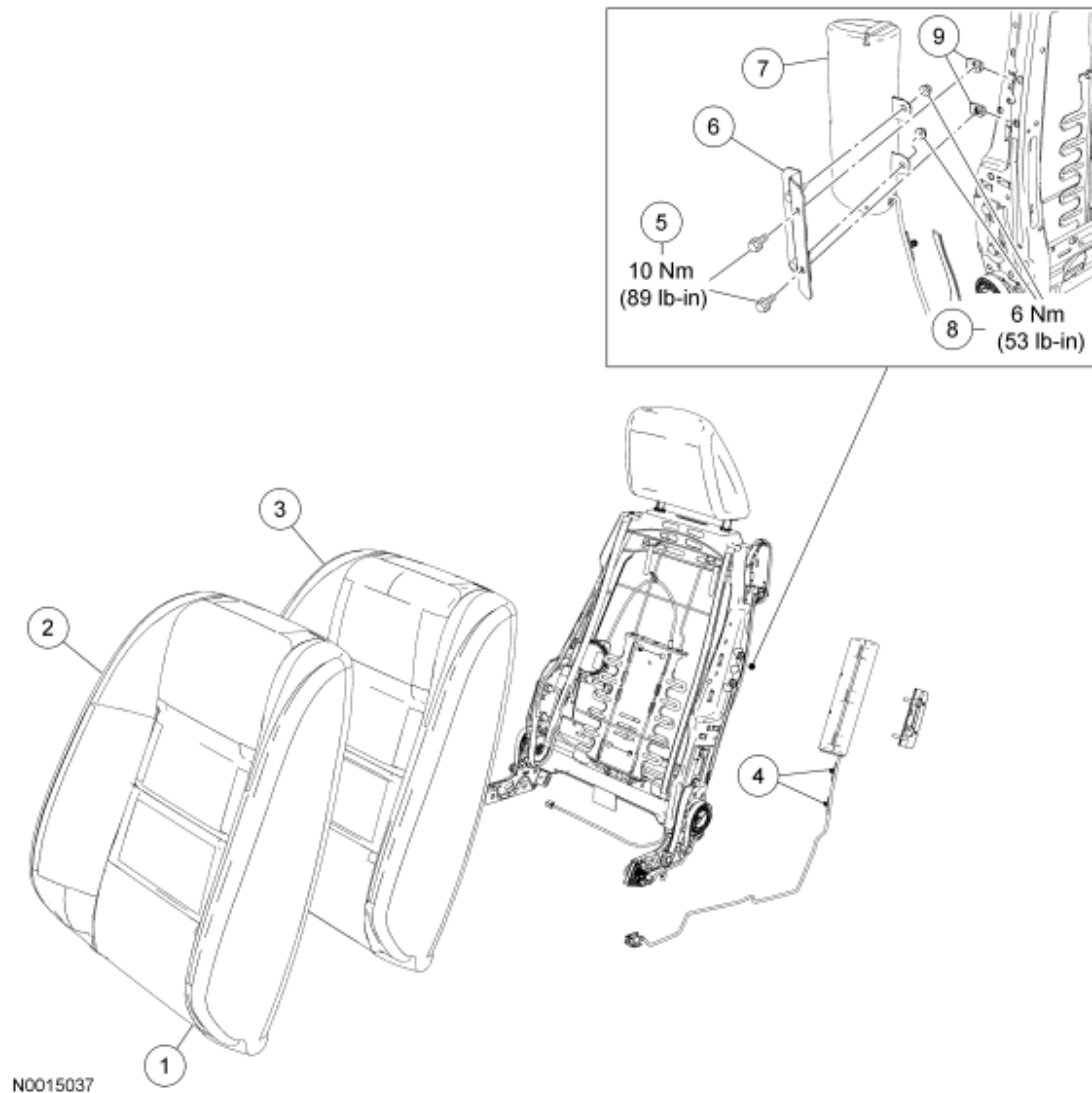


Fig. 186: Exploded View Of Side Air Bag Module With Torque Specifications
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	-	Seat back trim cover J-clip and pin-type retainer (part of 64417)
2	64417	Seat back trim cover
3	64810	Seat back foam pad
4	-	Side air bag module electrical wiring clips (part of 611D10)
5	N605892	Side air bag module bolts (2 required)
6	611D79	Side air bag module bracket
7	611D10	Side air bag module
8	-	Side air bag module-to-bracket nuts (part of 611D10)

		(2 required)
9	W520822	U-nuts

REMOVAL

WARNING: Always carry or place a live air bag module with the air bag and deployment door/trim cover/tear seam pointed away from the body. Do not set a live air bag module down with the deployment door/trim cover/tear seam face down. Failure to follow these instructions may result in serious personal injury in the event of an accidental deployment.

WARNING: Never probe the electrical connectors on air bag, safety canopy or side air curtain modules. Failure to follow this instruction may result in the accidental deployment of these modules, which increases the risk of serious personal injury or death.

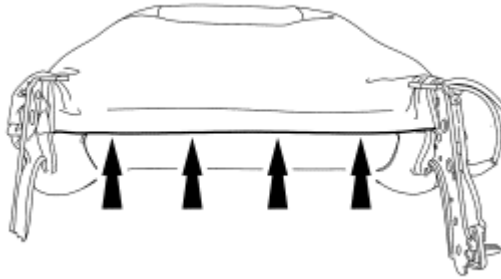
WARNING: If the seat side air bag cover has been damaged or separated from its mounting, or if the air bag material has been exposed, install a new seat side air bag module. Never try to repair the seat side air bag module. Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

WARNING: Front seat backrest trim covers installed on seats equipped with seat side air bags cannot be repaired. A new trim cover must be installed. Cleaning is permissible. Failure to follow these instructions may result in the seat side air bag module deploying incorrectly and increase the risk of serious personal injury or death in a crash.

- NOTE:
If a side air bag deployment took place, a new seat back foam pad, trim cover, side air bag module, bracket and nuts, U-nuts and bolts must be installed. The seat back frame should be replaced if necessary.
- NOTE:
The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.
- NOTE:
The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

- Depower the SRS. For additional information, refer to Supplemental Restraint System (SRS) Depowering and Repowering.
- Remove the front seat. For additional information, refer to SEATING article.
- Remove the front seat backrest. For additional information, refer to SEATING article.

4. Remove the plastic rivets attaching the backrest trim cover to the inboard and outboard recliners.
5. Release the front seat backrest trim cover J-clip.



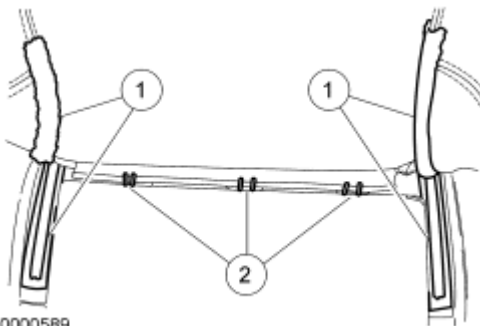
N0000588

Fig. 187: Locating Front Seat Backrest Trim Cover J-Clip
Courtesy of FORD MOTOR CO.

6. Remove the seat backrest trim cover inner J-clip.

NOTE: Use care when separating the seat cushion trim cover from the hook-and-loop strips. The hook-and-loop strips may be torn from the seat cushion foam.

7. Invert the seat backrest trim cover up.
 1. Place a hand between the seat backrest trim cover and foam pad and carefully separate the hook-and-loop strips.
 2. Remove the hog rings.



N0000589

Fig. 188: Locating Hog Rings
Courtesy of FORD MOTOR CO.

8. Position the seat back foam pad aside.

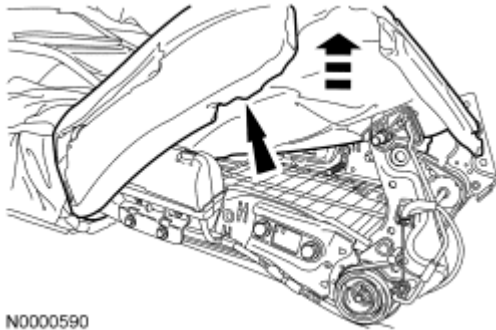


Fig. 189: Locating Seat Back Foam Pad
Courtesy of FORD MOTOR CO.

NOTE: Note the position of the wiring harness, to aid installation. An incorrectly routed wiring harness may become damaged when the seat is moved.

9. Detach the wiring pin-type retainers from seat backrest frame.

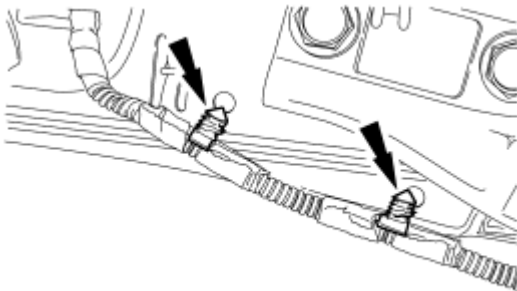


Fig. 190: Locating Wiring Pin-Type Retainers From Seat Backrest Frame
Courtesy of FORD MOTOR CO.

10. Remove the bolts and side air bag module.

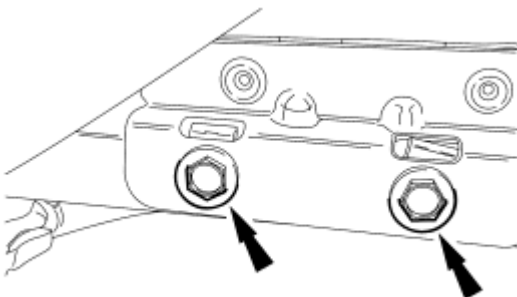


Fig. 191: Locating Side Air Bag Module Bolts
Courtesy of FORD MOTOR CO.

Seats installing a new side air bag module

NOTE: When installing a new side air bag module after deployment, install a new module, module bracket, module-to-bracket nuts, U-nuts-to-backrest frame and module and bracket-to-backrest frame bolts.

1. Install the side air bag module bracket on the side air bag module and install the 2 nuts.
 - Tighten the nuts to 6 Nm (53 lb-in).

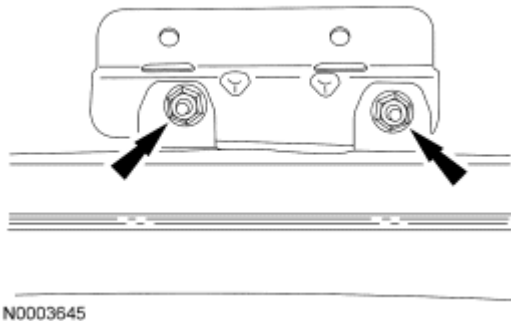


Fig. 192: Locating Side Air Bag Module Bracket Nuts
Courtesy of FORD MOTOR CO.

All seats

WARNING: Before installing the seat side air bag module/deployment chute assembly:

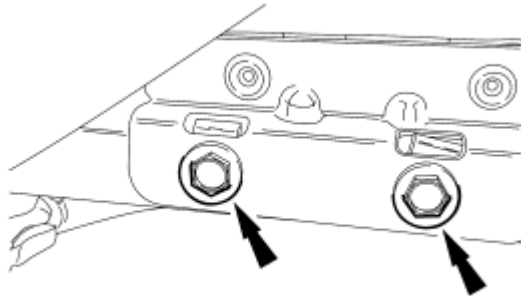
- Inspect the side air bag module and mounting surfaces for any damage or foreign material.
- Remove any foreign material from the mounting surfaces of the deployment chute, the seat backrest frame mounting bracket and the air bag module cavity in the seat backrest foam pad.
- Install new parts if damaged.

Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

WARNING: If the seat side air bag cover has been damaged or separated from its mounting, or if the air bag material has been exposed, install a new seat side air bag module. Never try to repair the seat side air bag module. Failure to follow these instructions may result in the seat side air bag deploying incorrectly, which increases the risk of serious personal injury or death in a crash.

NOTE: Make sure the side air bag module wiring harness is not pinched between the side air bag module and the mounting bracket.

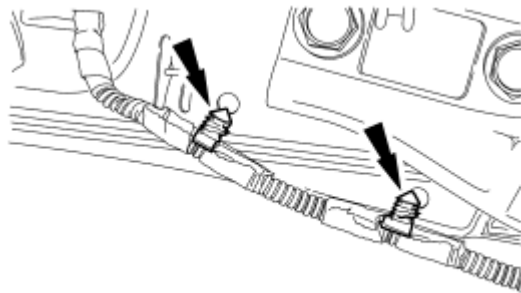
2. Install the side air bag module and bolts.
 - Tighten the bolts to 10 Nm (89 lb-in).



N0000592

Fig. 193: Locating Side Air Bag Module Bolts
Courtesy of FORD MOTOR CO.

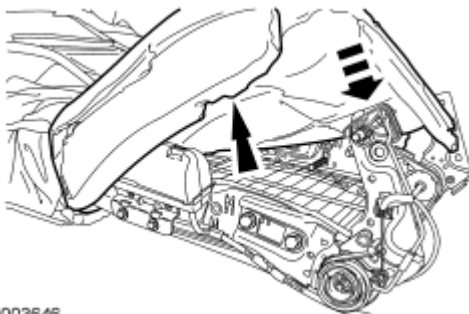
3. Attach the wiring pin-type retainers to the seat backrest frame.



N0000591

Fig. 194: Locating Wiring Pin-Type Retainers From Seat Backrest Frame
Courtesy of FORD MOTOR CO.

4. Reposition the seat back foam pad to the seat backrest frame.



N0003646

Fig. 195: Locating Side Air Bag Module Bracket Nuts

Courtesy of FORD MOTOR CO.

WARNING: To correctly retain the backrest trim cover, always install 2 hog rings when attaching the backrest trim cover wire to the listing wire in each foam pad window. Failure to follow this instruction may result in the seat side air bag module deploying incorrectly and increases the risk of serious personal injury or death in a crash.

5. Install the seat backrest trim cover.
 1. Install the 2 hog rings per window as shown.
 2. Attach the hook-and-loop strips.

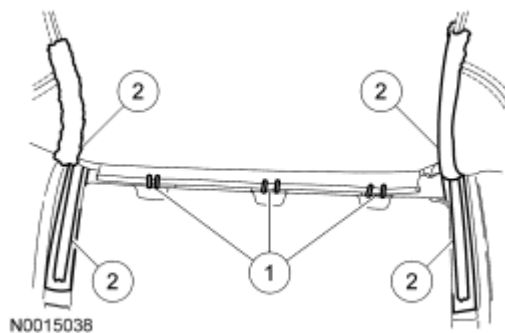


Fig. 196: Locating Hook, Loop Strips And Hog Rings
Courtesy of FORD MOTOR CO.

6. Attach the seat backrest trim cover inner J-clip.
7. Attach the front seat backrest trim cover J-clip.

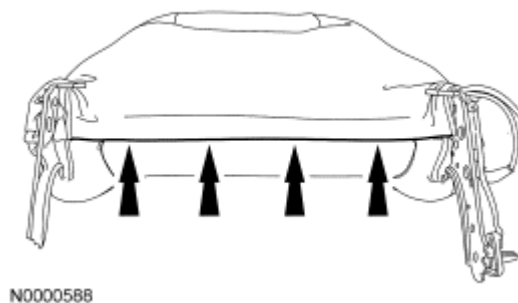


Fig. 197: Locating Front Seat Backrest Trim Cover J-Clip
Courtesy of FORD MOTOR CO.

8. Fold the backrest trim cover over on each side of the inboard and outboard recliner. Install the plastic rivets attaching the backrest trim cover to the inboard and outboard recliners.
9. Install the front seat backrest. For additional information, refer to **SEATING** article.
10. Install the front seat. For additional information, refer to **SEATING** article.

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11. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering**.

WARNING: Make sure the front passenger seat repair is complete, the seat and all attached components (head restraint, seat side shield, etc.) are correctly assembled, and the seat is correctly installed to the vehicle before carrying out the System Reset. Failure to follow these instructions may result in incorrect operation of the occupant classification sensor (OCS) system and increases the risk of serious personal injury or death in a crash.

NOTE: To prevent system failure, the following precautions must be taken before carrying out the Occupant Classification Sensor (OCS) system reset:

- Make sure the voltage to the Occupant Classification System Module (OCSM) is above 8.0 volts and less than 18.0 volts.
 - Make sure the OCS system is not at a temperature below 6°C (42°F) or above 36°C (97°F) when initiating the OCS reset procedure. 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, 6°C to 36°C (42°F to 97°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 carrying out the OCS system reset process.
12. For passenger seat, Carry out the OCS system reset. **If the system reset was successful, proceed to Step 16, otherwise proceed to Step 13.**
 13. If the first system reset attempt was unsuccessful, carry out a thorough visual inspection of the following:
 - OCS system wiring
 - Check the pressure sensor hose for kinks and/or damage
 - Related seat wiring harness, body wiring harness terminals and connectors
 14. If the damage is found, repair and/or install new components as necessary.
 15. Carry out a second OCS system reset. If the second attempt is unsuccessful, install a new OCS system service kit.

NOTE: The ignition switch must be cycled after the OCS system reset.

16. Prove out the SRS as follows:

Turn the ignition switch from ON to OFF. Wait 10 seconds, then turn the ignition switch back to ON and

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visually monitor the air bag warning indicator with the air bag modules installed. The air bag warning indicator will light continuously for approximately 6 seconds and then turn off. If an air bag SRS fault is present, the air bag warning indicator will:

- fail to light.
- remain lit continuously.
- flash at a 5Hz rate (RCM not configured).

The air bag warning indicator might not light 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 warning 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 warning indicator and any SRS fault discovered must be diagnosed and repaired.

Clear all continuous DTCs from the RCM using a scan tool.

NOTE: **A prepaid return postcard is provided with a new OCS system service kit. The serial number for the new part and the Vehicle Identification Number (VIN) must be recorded and sent to Ford Motor Company.**

17. If a new OCS system service kit was installed, fill out the necessary information on the OCS system traceability card and return it along with the complete inoperative OCS system to Ford Motor Company.
 - When returning the inoperative OCS system include: seat cushion foam pad, bladder, OCSM, pressure sensor (transducer), hose, electrical connectors and wire harness (service part OCS only).

SIDE IMPACT SENSOR

NOTE: **LH side shown, RH similar.**

2008 Ford Mustang

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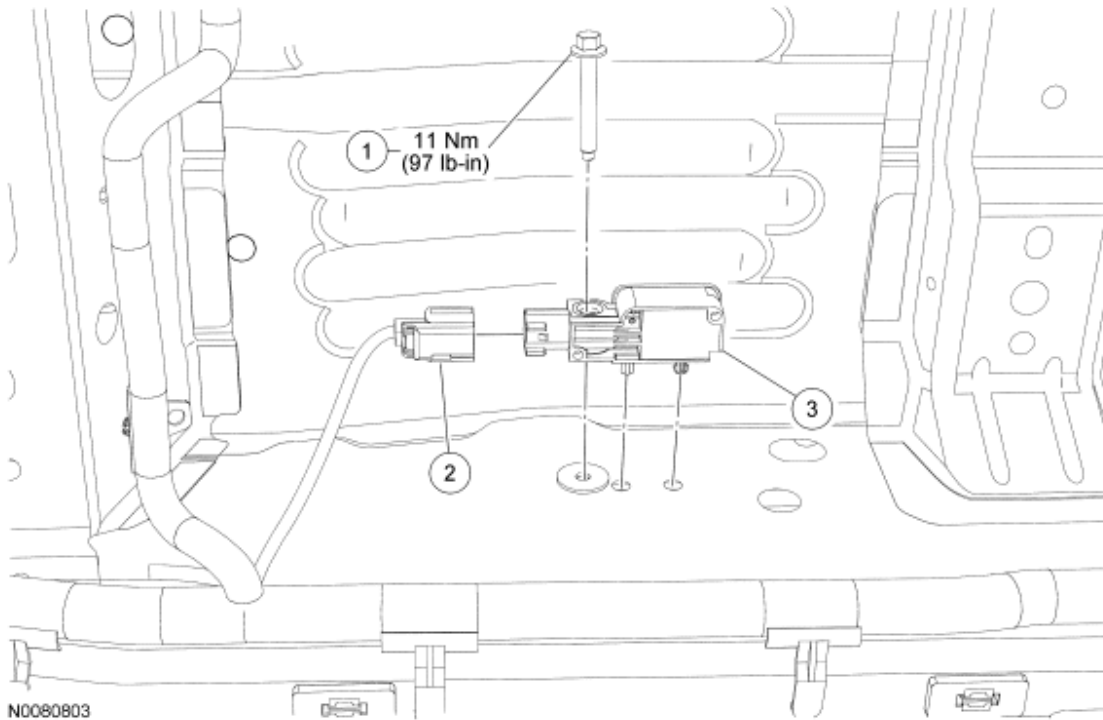


Fig. 198: Exploded View Of Side Impact Sensor With Torque Specification
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	-	Side impact sensor bolt (part of 14B345)
2	-	Side impact sensor electrical connector (part of 14A005)
3	14B345	Side impact sensor

REMOVAL AND INSTALLATION

WARNING: If a vehicle has been in a crash, inspect the restraints control module (RCM) and the impact sensor (if equipped) mounting areas for deformation. If damaged, restore the mounting areas to the original production configuration. A new RCM and sensors must be installed whether or not the air bags have deployed. Failure to follow these instructions may result in serious personal injury or death in a crash.

NOTE: The air bag warning indicator illuminates when the correct Restraints Control Module (RCM) fuse is removed and the ignition switch is ON.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

1. Depower the SRS. For additional information, refer to **Supplemental Restraint System (SRS)**

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Depowering and Repowering.

2. Remove the door scuff plate. For additional information, refer to **INTERIOR TRIM AND ORNAMENTATION** article.
3. Position the carpet aside.
4. Disconnect the side impact sensor electrical connector.
5. Remove the bolt and side impact sensor.
 - To install, tighten to 11 Nm (97 lb-in).

WARNING: Always tighten the fasteners of the restraints control module (RCM) and impact sensor (if equipped) to the specified torque. Failure to do so may result in incorrect restraint system operation, which increases the risk of personal injury or death in a crash.

NOTE: Before installation, make sure the side impact severity sensor mating surfaces are clean and free of corrosion and dirt.

6. To install, reverse the removal procedure.
7. Repower the SRS. For additional information, refer to **Supplemental Restraint System (SRS) Depowering and Repowering.**