

2006 RESTRAINTS

SIR - Rendezvous

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

| Application                                                        | Specification |          |
|--------------------------------------------------------------------|---------------|----------|
|                                                                    | Metric        | English  |
| Inflatable Restraint Instrument Panel Module Bolts                 | 10 N.m        | 89 lb in |
| Inflatable Restraint Front End Discriminating Sensor Bolts         | 8 N.m         | 71 lb in |
| Inflatable Restraint Sensing and Diagnostic Module (SDM) Fasteners | 10 N.m        | 89 lb in |
| Inflatable Restraint Side Impact Sensor (SIS) Fasteners            | 10 N.m        | 89 lb in |
| Inflatable Restraint Side Impact Module Fasteners                  | 5 N.m         | 45 lb in |

SCHEMATIC AND ROUTING DIAGRAMS

SIR SCHEMATIC ICONS

SIR Schematic Icons

| Icon | Icon Definition                                                                                                                                                                                                                                                                                                               |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | <p><b>CAUTION:</b></p> <p>When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Refer to SIR Disabling and Enabling Zones. Failure to observe the correct procedure could cause deployment of the SIR components, personal injury, or unnecessary SIR system repairs.</p> |

**IMPORTANT:**

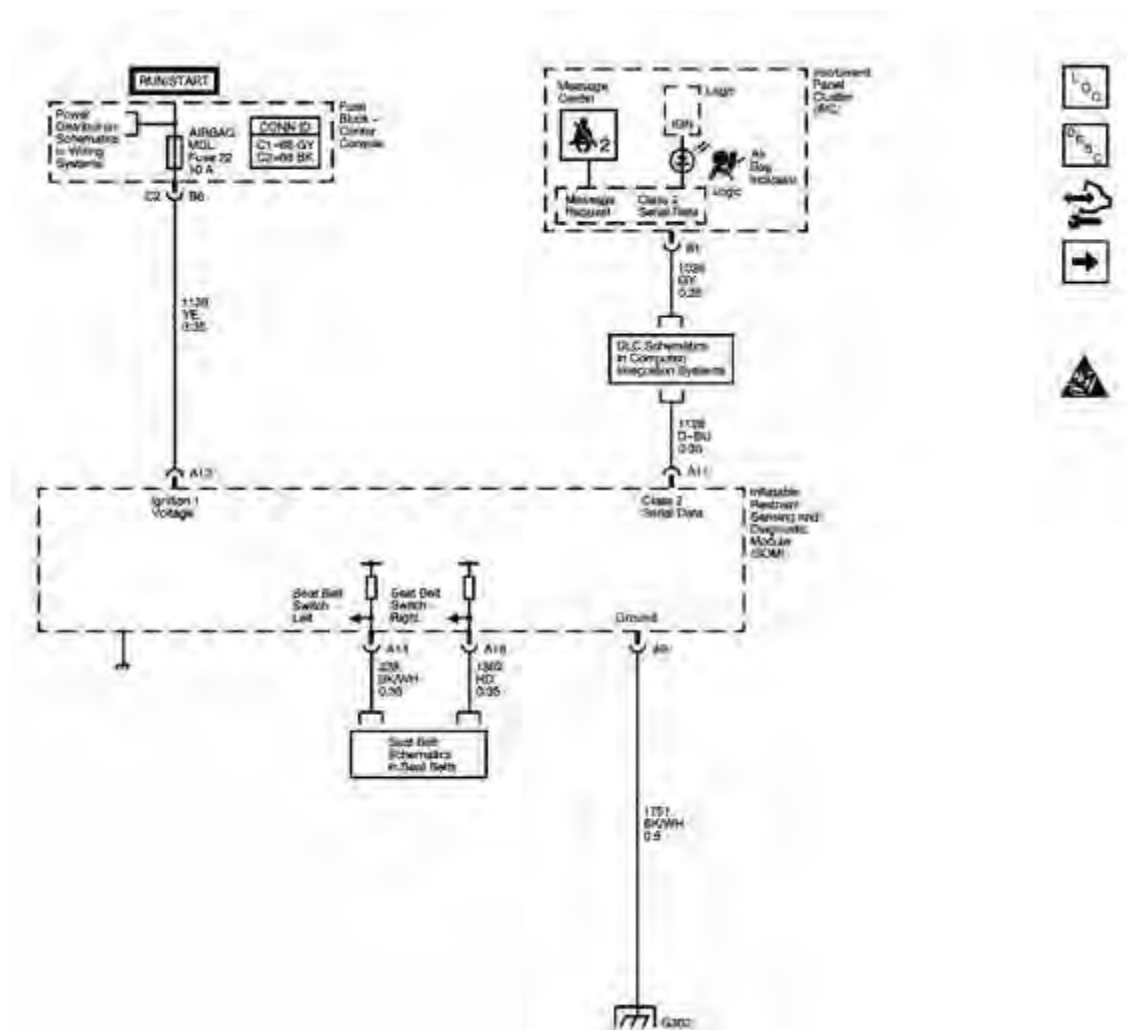
- In order to prevent accidental deployment, the shorting bars close in order to short the connectors when the connectors are separated.
- Twisted-pair wires provide an effective shield that helps protect sensitive electronic components from electrical interference. If the wires were covered with shielding, install new shielding.

In order to prevent electrical interference from degrading the performance of the connected components, you must maintain the proper specification when making any repairs to the twisted-pair wires shown :

- The wires must be twisted a minimum of 9 turns per 31 cm (12 in) as measured anywhere along the length of the wires
- The outside diameter of the twisted wires must not exceed 6.0

mm (0.25 in)

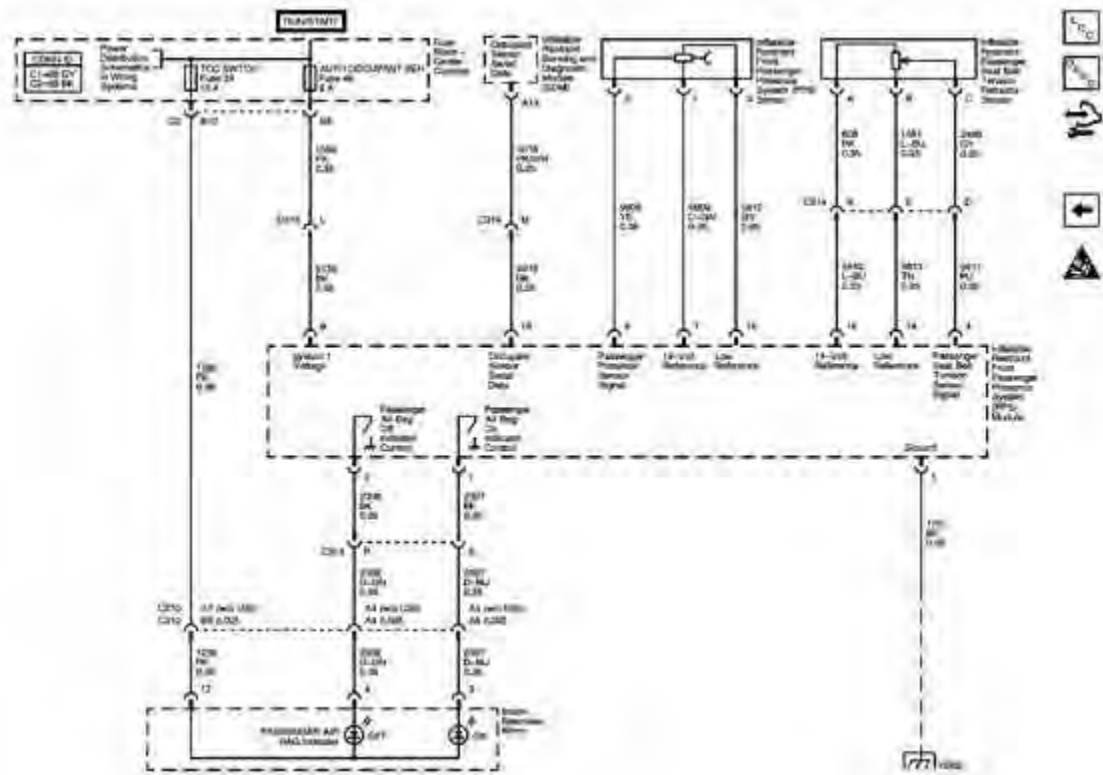
## SIR SCHEMATICS



**Fig. 1: Ground, Power, and Serial Data**  
**Courtesy of GENERAL MOTORS CORP.**



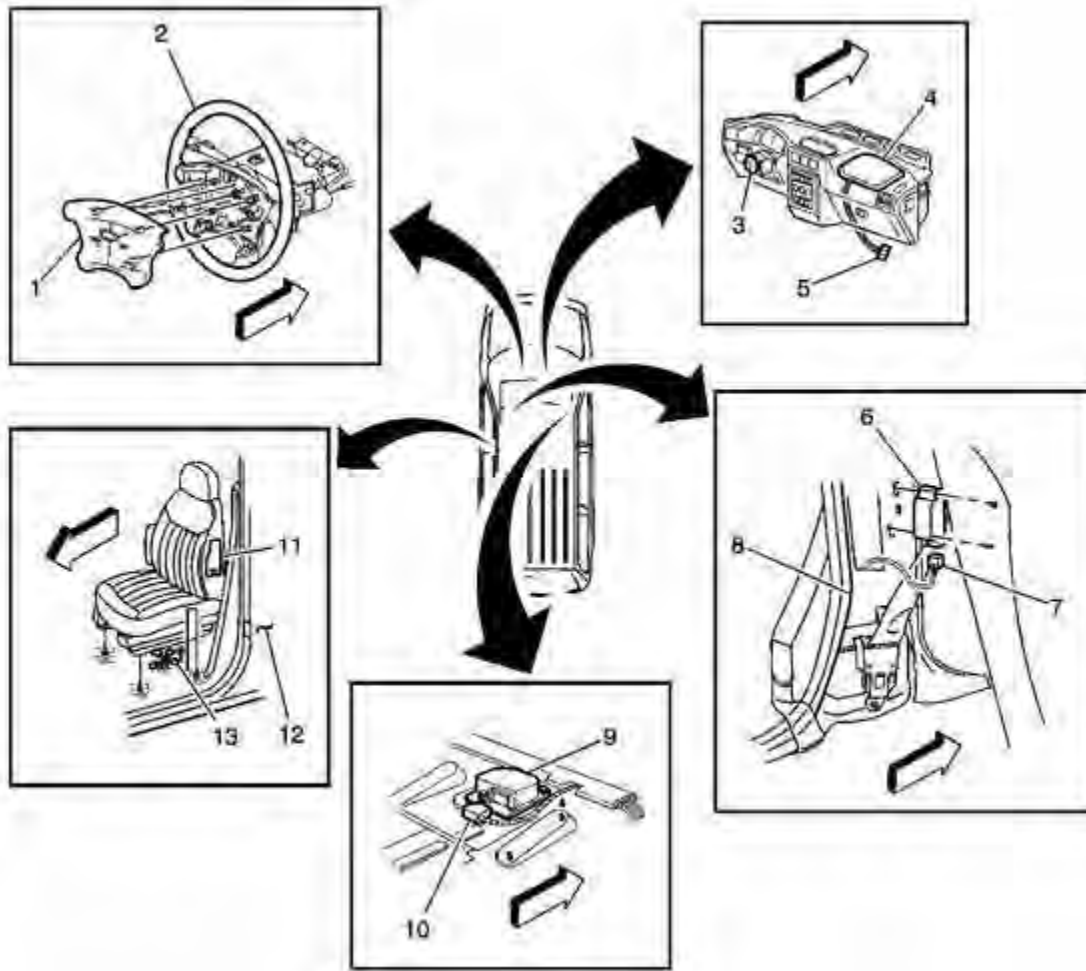
**Fig. 3: Impact Modules and Pretensioners**  
 Courtesy of GENERAL MOTORS CORP.



**Fig. 4: Passenger Presence System**  
 Courtesy of GENERAL MOTORS CORP.

## COMPONENT LOCATOR

### SIR COMPONENT VIEWS



**Fig. 5: Inflatable Restraint Components - Typical**  
**Courtesy of GENERAL MOTORS CORP.**

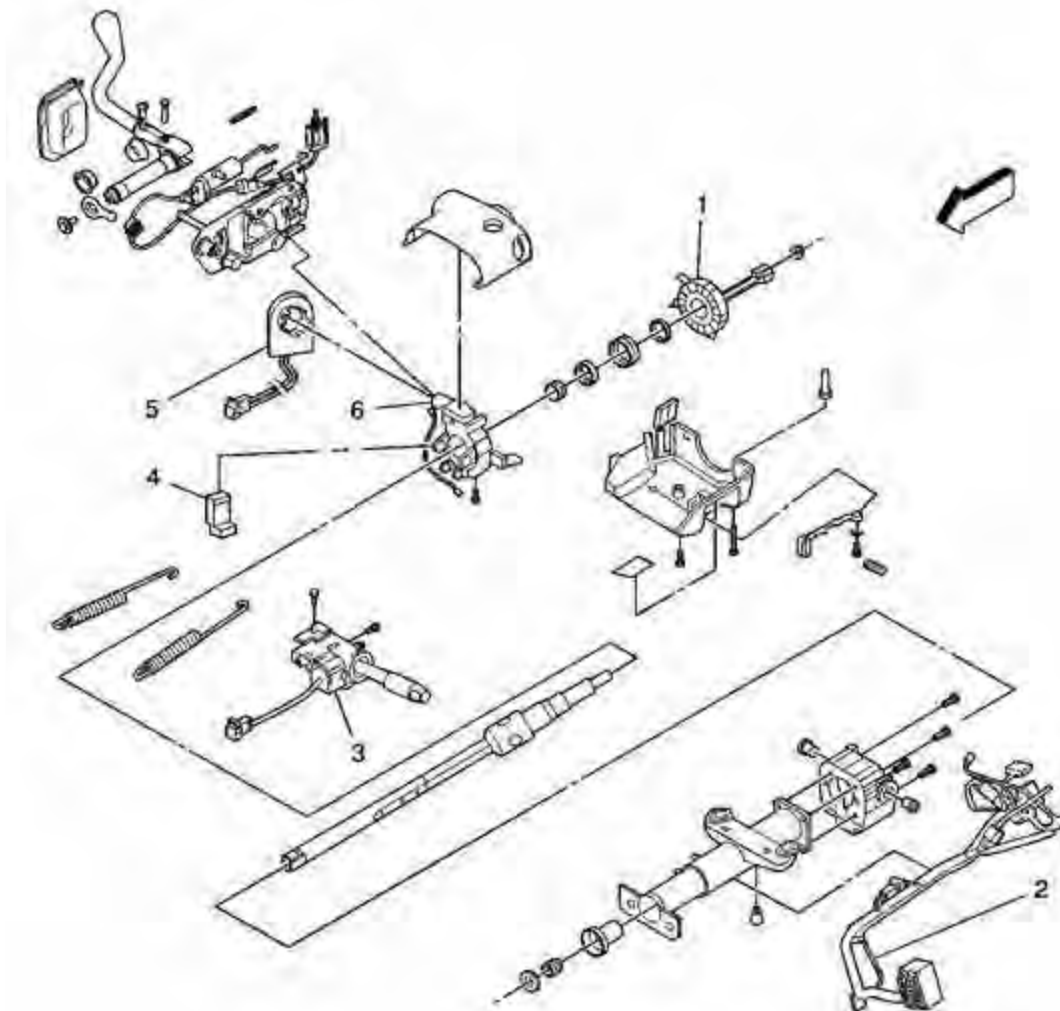
#### Callouts For Fig. 5

| Callout | Component Name                                                      |
|---------|---------------------------------------------------------------------|
| 1       | Inflatable Restraint Steering Wheel Module                          |
| 2       | Steering Wheel                                                      |
| 3       | Steering Column                                                     |
| 4       | Inflatable Restraint IP Module                                      |
| 5       | Inflatable Restraint IP Module Connector                            |
| 6       | Inflatable Restraint Side Impact Sensor - LH (RH Similar)           |
| 7       | Inflatable Restraint Side Impact Sensor - LH Connector (RH Similar) |
| 8       | LH "B" Pillar                                                       |
| 9       | Inflatable Restraint Sensing and Diagnostic Module (SDM)            |

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|    |                                                                      |
|----|----------------------------------------------------------------------|
| 10 | SDM Wiring Harness Connector - RH (LH Similar)                       |
| 11 | Inflatable Restraint Side Impact Module - LH (RH Similar)            |
| 12 | Seat Belt Retractor Pretensioner (inside B-Pillar) - LH (RH Similar) |
| 13 | Inflatable Restraint Side Impact Module - LH Connector (RH Similar)  |



**Fig. 6: Steering Column Disassembled View Component View**  
**Courtesy of GENERAL MOTORS CORP.**

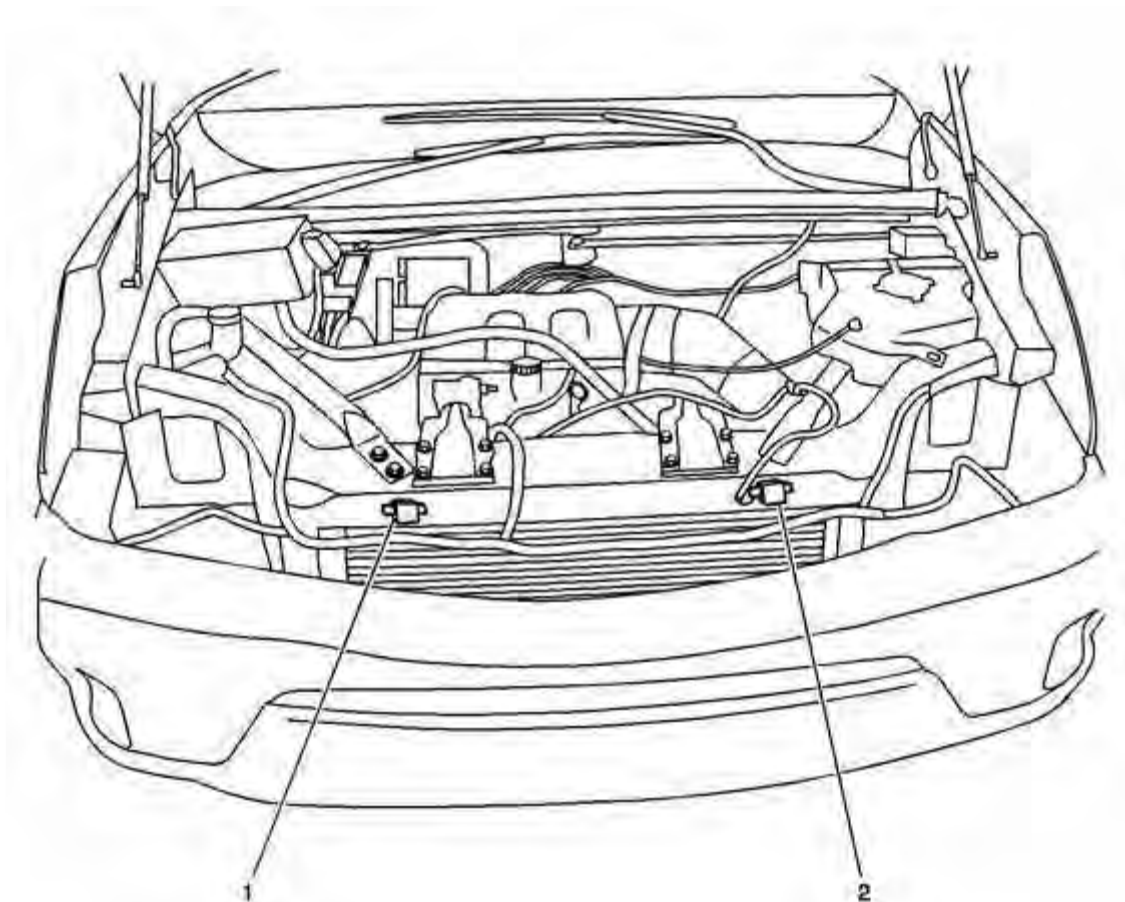
### Callouts For Fig. 6

| Callout | Component Name                           |
|---------|------------------------------------------|
| 1       | Inflatable Restraint Steering Wheel Coil |

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|   |                        |
|---|------------------------|
| 2 | Wire Harness Assembly  |
| 3 | Multifunction Switch   |
| 4 | Ignition Switch        |
| 5 | Theft Deterrent Module |
| 6 | Ignition Key Alarm     |



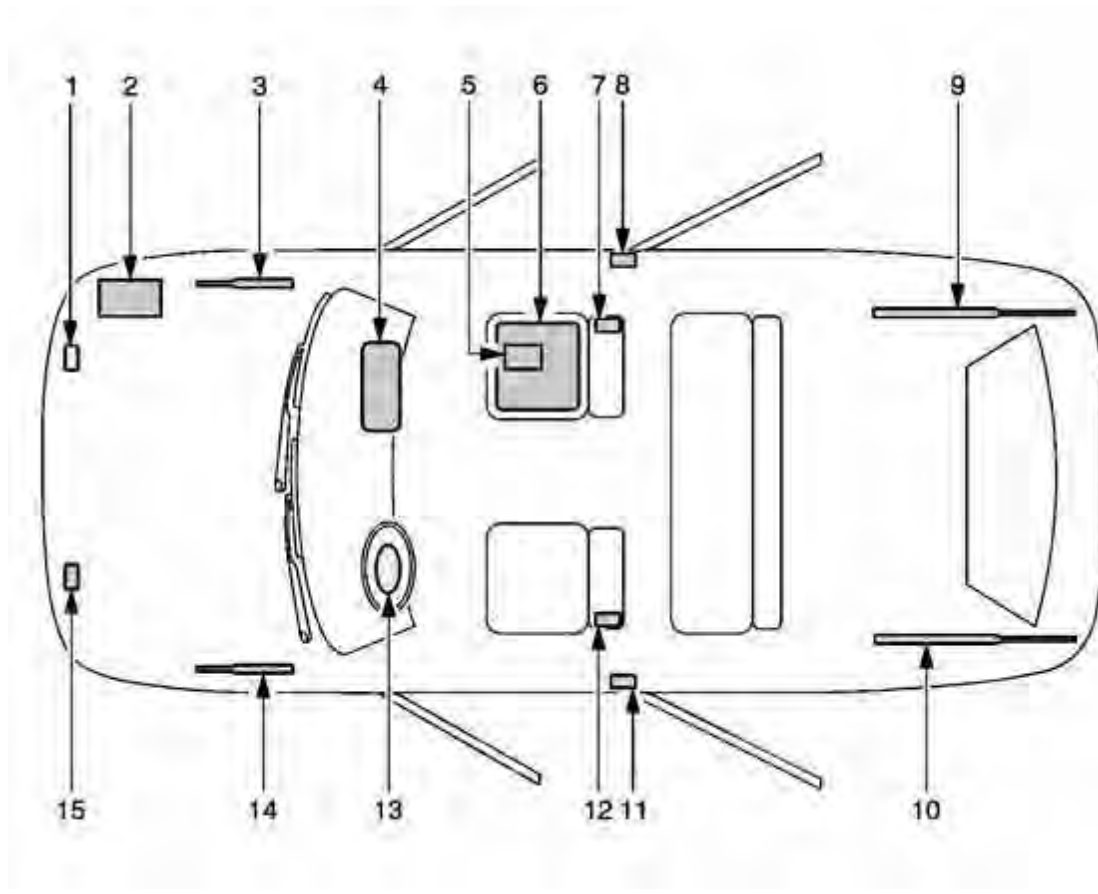
**Fig. 7: Forward Discriminating Sensors Component View**  
Courtesy of GENERAL MOTORS CORP.

### Callouts For Fig. 7

| Callout | Component Name                                           |
|---------|----------------------------------------------------------|
| 1       | Inflatable Restraint Forward Discriminating Sensor-Right |
| 2       | Inflatable Restraint Forward Discriminating Sensor-Left  |

### SIR ZONE IDENTIFICATION VIEWS

The SIR Zone Identification Views shown below illustrate the approximate location of all SIR components available for the vehicle. This will assist in determining the appropriate SIR disabling and enabling zones for a given service procedure. Refer to **SIR Disabling and Enabling Zones**.



**Fig. 8: SIR Zone Identification Views**  
 Courtesy of GENERAL MOTORS CORP.

#### Callouts For Fig. 8

| Callout | Component Name                                                                         |
|---------|----------------------------------------------------------------------------------------|
| 1       | Right Front End Sensor - Located on the front of the vehicle in the engine compartment |
| 2       | Vehicle Battery - Located under the hood on the right side                             |
| 3       | Front Hood Assist Rod - A gas shock located under the front hood on the passenger side |
| 4       | I/P Air Bag - Located at the top right under the instrument panel                      |
| 5       | Sensing and Diagnostic Module (SDM) - Located underneath the passenger front seat      |

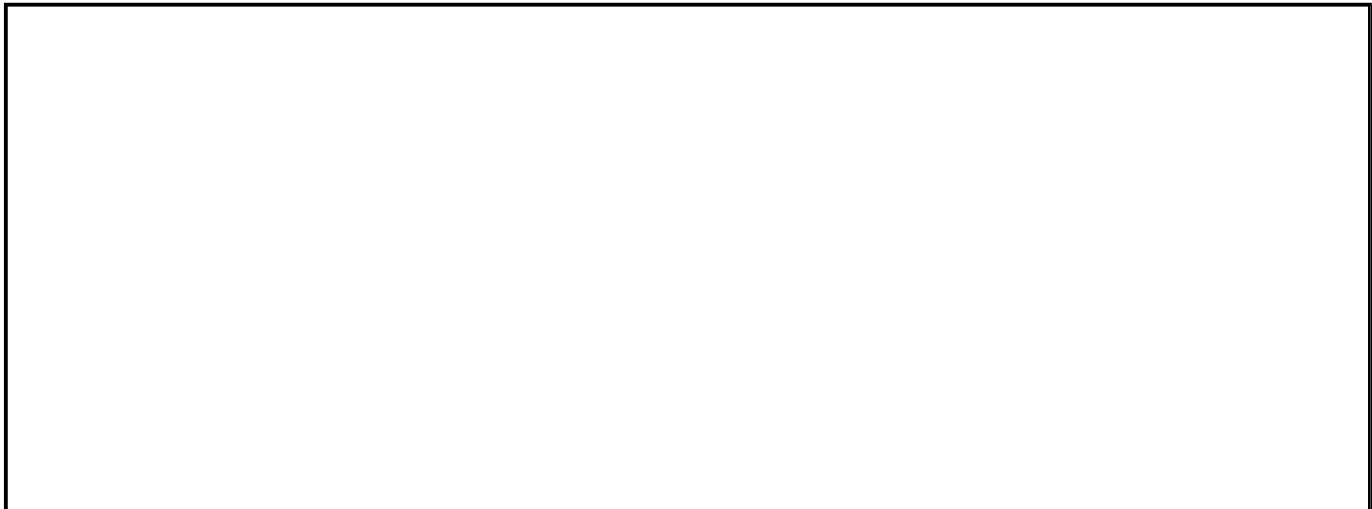
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|    |                                                                                                                                                                                                                                            |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6  | Passenger Presence System (PPS) - Located on the passenger front seat underneath the seat bottom trim                                                                                                                                      |
| 7  | RF Side Impact Air Bag - Located on the seat back of the passenger front seat                                                                                                                                                              |
| 8  | Side Impact Sensor (SIS) and Right Seat Belt Retractor Pretensioner - The right SIS is located under the center pillar trim near the bottom and the seat belt retractor pretensioner is located above the SIS on passenger side of vehicle |
| 9  | Rear Compartment Lid Assist Rod - A gas shock is located under the rear trunk lid on the passenger side                                                                                                                                    |
| 10 | Rear Compartment Lid Assist Rod - A gas shock is located under the rear trunk lid on the driver side                                                                                                                                       |
| 11 | Side Impact Sensor (SIS) and Left Seat Belt Retractor Pretensioner - The left SIS is located under the center pillar trim near the bottom and the seat belt retractor pretensioner is located above the SIS on driver side of vehicle      |
| 12 | LF Side Impact Air Bag - Located on the seat back of the driver front seat                                                                                                                                                                 |
| 13 | Steering Wheel Air Bag - Located on the steering wheel                                                                                                                                                                                     |
| 14 | Front Hood Assist Rod - A gas shock located under the front hood on the driver side                                                                                                                                                        |
| 15 | Left Front End Sensor - Located on the front of the vehicle in the engine compartment                                                                                                                                                      |

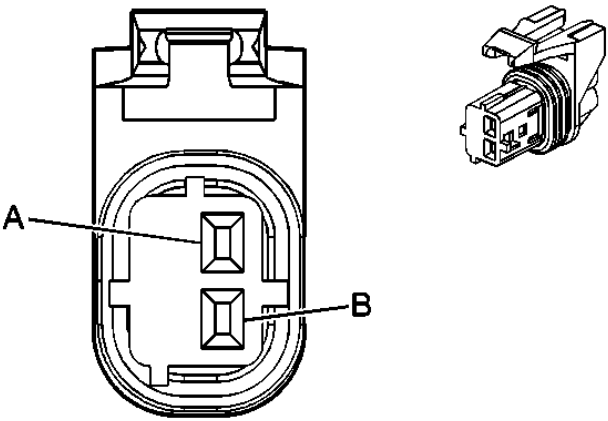
## SIR CONNECTOR END VIEWS

### Inflatable Restraint Front End Sensor - Left



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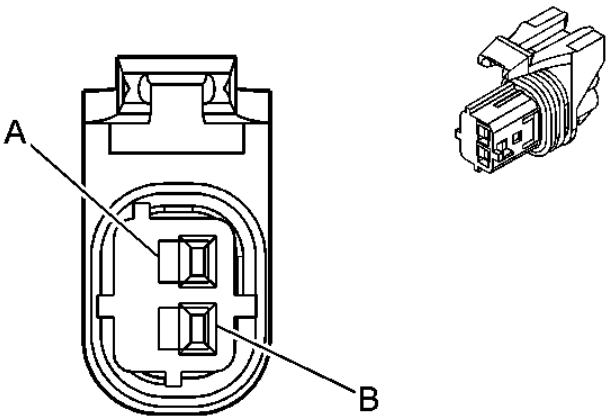


Connector Part Information

- 15356722
- 2-Way F GT 150 Series Sealed (YE)

| Pin | Wire Color | Circuit No. | Function                                               |
|-----|------------|-------------|--------------------------------------------------------|
| A   | YE         | 9901        | Inflatable Restraint Front End Sensor - Left - Signal  |
| B   | GY         | 9904        | Inflatable Restraint Front End Sensor - Left - Voltage |

Inflatable Restraint Front End Sensor - Right



Connector Part Information

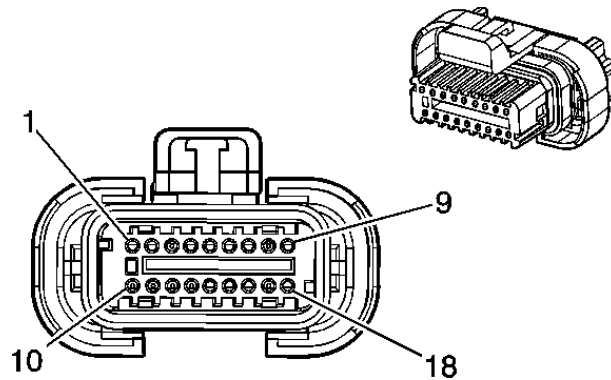
- 15356724
- 2-Way F GT 150 Series Sealed (YE)

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| Pin | Wire Color | Circuit No. | Function                                                |
|-----|------------|-------------|---------------------------------------------------------|
| A   | BK         | 9906        | Inflatable Restraint Front End Sensor - Right - Signal  |
| B   | OG         | 9902        | Inflatable Restraint Front End Sensor - Right - Voltage |

### Inflatable Restraint Front Passenger Presence System (PPS) Module



#### Connector Part Information

- 15431682
- 11-Way F Micro-Pack 100W Series Sealed (BK)

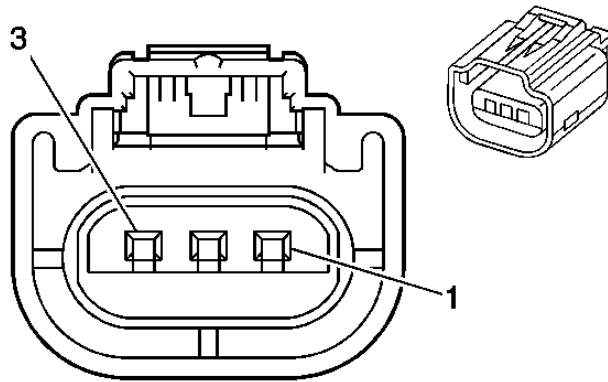
| Pin   | Wire Color | Circuit No. | Function                                              |
|-------|------------|-------------|-------------------------------------------------------|
| 1     | BK         | 2307        | Passenger Air Bag On Indicator Control                |
| 2     | BK         | 2308        | Passenger Air Bag Off Indicator Control               |
| 3     | -          | -           | Not Available                                         |
| 4     | PU         | 5611        | Passenger Seat Belt Tension Retractor Sensor - Signal |
| 5     | BK         | 1751        | Ground                                                |
| 6     | YE         | 5608        | PPS Sensor Signal                                     |
| 7     | D-GN       | 5609        | PPS Sensor - 5-Volt Reference                         |
| 8     | -          | -           | Not Available                                         |
| 9     | BK         | 9139        | Ignition 1 Voltage                                    |
| 10-13 | -          | -           | Not Available                                         |
|       |            |             |                                                       |

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|    |      |      |                                                                 |
|----|------|------|-----------------------------------------------------------------|
| 14 | TN   | 5613 | Passenger Seat Belt Tension Retractor Sensor - Low Reference    |
| 15 | GY   | 5610 | PPS Sensor - Low Reference                                      |
| 16 | L-BU | 5612 | Passenger Seat Belt Tension Retractor Sensor - 5-Volt Reference |
| 17 | -    | -    | Not Available                                                   |
| 18 | BK   | 5018 | Passenger Presence Class 2 Serial Data                          |

### Inflatable Restraint Front Passenger Presence System (PPS) Sensor



#### Connector Part Information

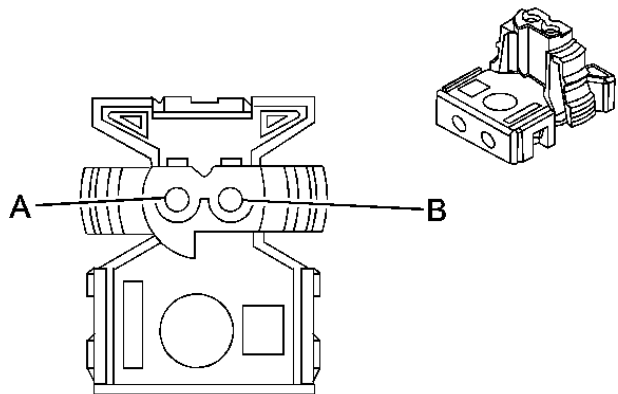
- 15439374
- 3-Way F 1.5 Series Sealed (GY)

| Pin | Wire Color | Circuit No. | Function                      |
|-----|------------|-------------|-------------------------------|
| 1   | D-GN       | 5609        | PPS Sensor - Low Reference    |
| 2   | YE         | 5608        | PPS Sensor Signal             |
| 3   | GY         | 5610        | PPS Sensor - 5-Volt Reference |

### Inflatable Restraint I/P Module C1

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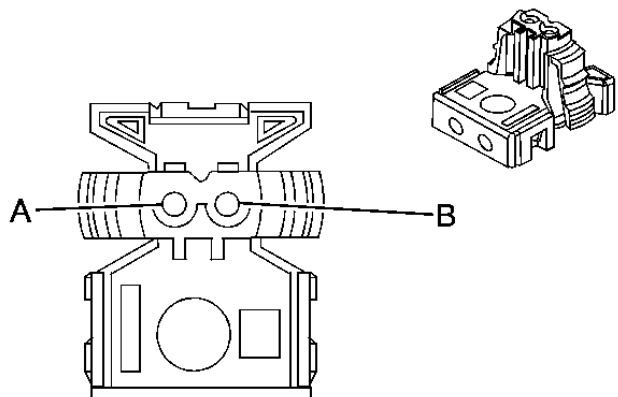


Connector Part Information

- 54550267
- 2-Way F ABX-3 Code B (WH)

| Pin | Wire Color | Circuit No. | Function                            |
|-----|------------|-------------|-------------------------------------|
| A   | YE         | 3025        | I/P Module - Stage 1 - High Control |
| B   | OG         | 3024        | I/P Module - Stage 1 - Low Control  |

Inflatable Restraint I/P Module C2



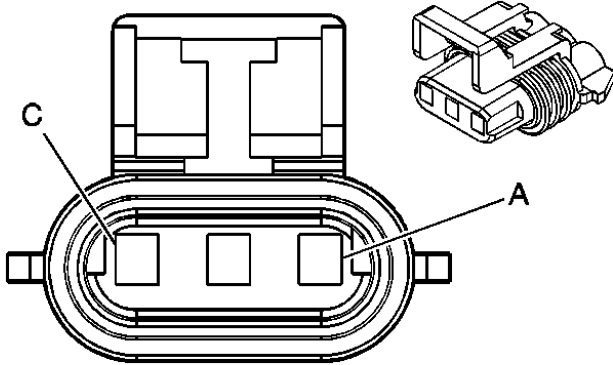
Connector Part Information

- 54550271
- 2-Way F ABX-3 Code G (WH)

| Pin | Wire Color | Circuit No. | Function                            |
|-----|------------|-------------|-------------------------------------|
| A   | GY         | 3027        | I/P Module - Stage 2 - High Control |
|     |            |             |                                     |

|   |    |      |                                    |
|---|----|------|------------------------------------|
| B | PU | 3026 | I/P Module - Stage 2 - Low Control |
|---|----|------|------------------------------------|

**Inflatable Restraint Passenger Seat Belt Tension Retractor Sensor**



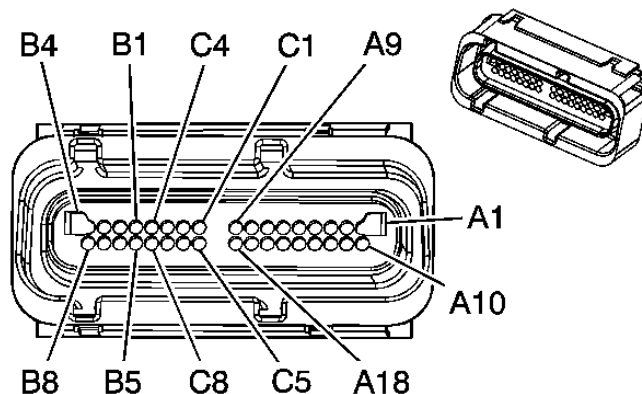
|                                   |                   |                                                                                                                |                                                                 |
|-----------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Connector Part Information</b> |                   | <ul style="list-style-type: none"><li>• 12110293</li><li>• 3-Way F Metri-Pack 150 Series Sealed (BK)</li></ul> |                                                                 |
| <b>Pin</b>                        | <b>Wire Color</b> | <b>Circuit No.</b>                                                                                             | <b>Function</b>                                                 |
| A                                 | PK                | 608                                                                                                            | Passenger Seat Belt Tension Retractor Sensor - 5-Volt Reference |
| B                                 | L-BU              | 1361                                                                                                           | Passenger Seat Belt Tension Retractor Sensor - Low Reference    |
| C                                 | GY                | 2488                                                                                                           | Passenger Seat Belt Tension Retractor Sensor - Signal           |

**Inflatable Restraint Sensing and Diagnostic Module (SDM)**

|  |
|--|
|  |
|--|

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### Connector Part Information

- 15357038
- 34-Way F Micro-Pack 100A (YE)

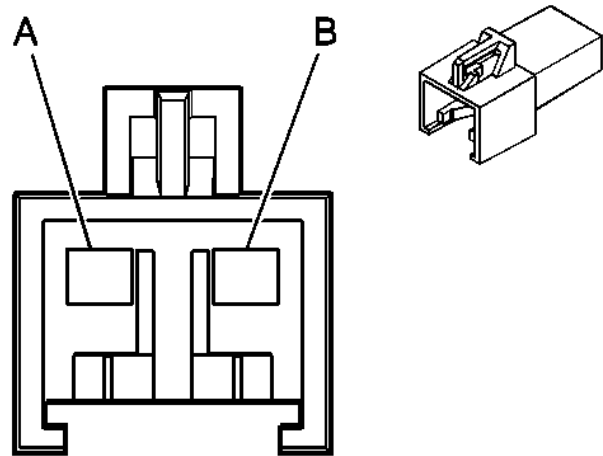
| Pin | Wire Color | Circuit No. | Function                                      |
|-----|------------|-------------|-----------------------------------------------|
| A1  | TN         | 3021        | Steering Wheel Module Stage 1 High Control    |
| A2  | BN         | 3020        | Steering Wheel Module Stage 1 Low Control     |
| A3  | OG         | 3024        | Passenger I/P Module Stage 1 Low Control      |
| A4  | YE         | 3025        | Passenger I/P Module Stage 1 High Control     |
| A5  | BK/WH      | 2118        | Driver Seat Belt Pretensioner High Control    |
| A6  | OG/BK      | 2119        | Driver Seat Belt Pretensioner Low Control     |
| A7  | OG         | 2117        | Passenger Seat Belt Pretensioner Low Control  |
| A8  | L-GN       | 2116        | Passenger Seat Belt Pretensioner High Control |
| A9  | BK/WH      | 1751        | Ground                                        |
| A10 | YE         | 1139        | Ignition 1 Voltage                            |
| A11 | D-BU       | 1128        | SDM Class 2 Serial Data                       |
| A12 | -          | -           | Not Used                                      |
| A13 | PK/WH      | 5018        | Passenger Presence Class 2 Serial Data        |

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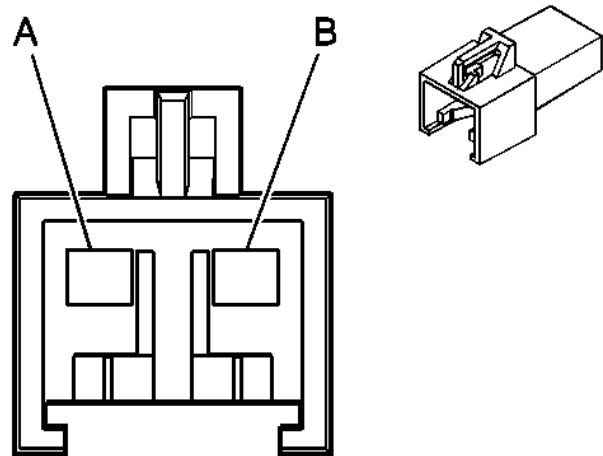
|         |       |      |                                                                        |
|---------|-------|------|------------------------------------------------------------------------|
| A14     | BK/WH | 238  | Driver Seat Belt Switch Signal                                         |
| A15     | -     | -    | Not Used                                                               |
| A16     | RD    | 1362 | Passenger Seat Belt Switch Signal                                      |
| A17-A18 | -     | -    | Not Used                                                               |
| B1      | WH    | 3023 | Steering Wheel Module Stage 2 High Control                             |
| B2      | PK    | 3022 | Steering Wheel Module Stage 2 Low Control                              |
| B3      | PU    | 3026 | Passenger I/P Module Stage 2 Low Control                               |
| B4      | GY    | 3027 | Passenger I/P Module Stage 2 High Control                              |
| B5      | BN    | 9904 | Inflatable Restraint Front End Discriminating Sensor - Left - Voltage  |
| B6      | RD    | 9901 | Inflatable Restraint Front End Discriminating Sensor - Left - Signal   |
| B7      | PU    | 9906 | Inflatable Restraint Front End Discriminating Sensor - Right - Signal  |
| B8      | RD    | 9902 | Inflatable Restraint Front End Discriminating Sensor - Right - Voltage |
| C1      | YE/BK | 2138 | Side Impact Module - LF High Control (AJ7)                             |
| C2      | BN    | 2137 | Side Impact Module - LF Low Control (AJ7)                              |
| C3      | BK/WH | 2135 | Side Impact Module - RF High Control (AJ7)                             |
| C4      | L-GN  | 2136 | Side Impact Module - RF Low Control (AJ7)                              |
| C5      | YE    | 2131 | Side Impact Sensing Module - Left Voltage (AJ7)                        |
| C6      | WH    | 2132 | Side Impact Sensing Module - Left Signal (AJ7)                         |
| C7      | D-GN  | 2134 | Side Impact Sensing Module - Right Signal (AJ7)                        |
| C8      | TN    | 2133 | Side Impact Sensing Module - Right Voltage (AJ7)                       |

Inflatable Restraint Side Impact Module - Left (AJ7)



| Connector Part Information |            | <ul style="list-style-type: none"><li>• 12186799</li><li>• 2-Way M 280 Series (YE)</li></ul> |                                      |
|----------------------------|------------|----------------------------------------------------------------------------------------------|--------------------------------------|
| Pin                        | Wire Color | Circuit No.                                                                                  | Function                             |
| A                          | BN         | 2137                                                                                         | Side Impact Module - LF High Control |
| B                          | YE/BK      | 2138                                                                                         | Side Impact Module - LF Low Control  |

Inflatable Restraint Side Impact Module - Right (AJ7)



# 2006 Buick Rendezvous CX

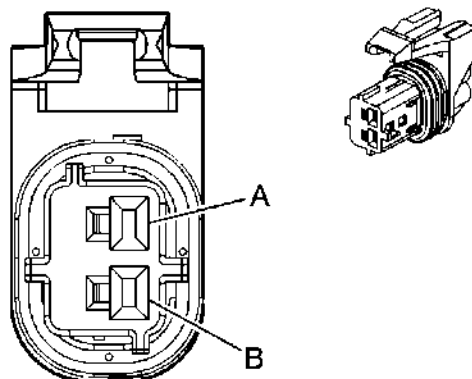
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## Connector Part Information

- 12186799
- 2-Way M 280 Series (YE)

| Pin | Wire Color | Circuit No. | Function                             |
|-----|------------|-------------|--------------------------------------|
| A   | BK/WH      | 2135        | Side Impact Module - RF High Control |
| B   | L-GN       | 2136        | Side Impact Module - RF Low Control  |

## Inflatable Restraint Side Impact Sensor - Left (AJ7)

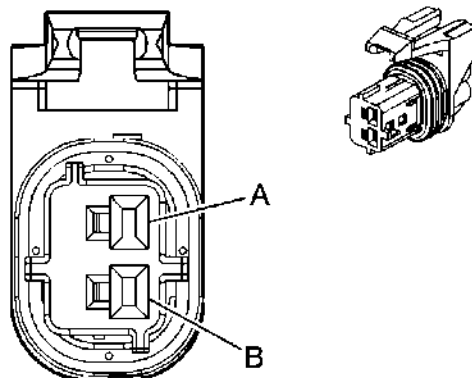


## Connector Part Information

- 15356727
- 2-Way F GT 150 Series Sealed 4.0 (YE)

| Pin | Wire Color | Circuit No. | Function                                    |
|-----|------------|-------------|---------------------------------------------|
| A   | WH         | 2132        | Side Impact Sensing Module - Left - Signal  |
| B   | YE         | 2131        | Side Impact Sensing Module - Left - Voltage |

## Inflatable Restraint Side Impact Sensor - Right (AJ7)



## Connector Part Information

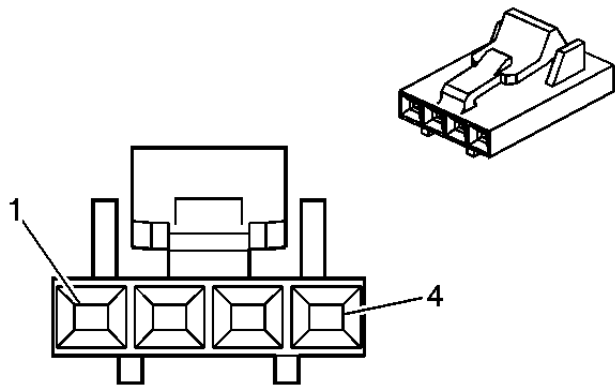
- 15356727

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|     |            | • 2-Way F GT 150 Series Sealed 4.0 (YE) |                                              |
|-----|------------|-----------------------------------------|----------------------------------------------|
| Pin | Wire Color | Circuit No.                             | Function                                     |
| A   | D-GN       | 2134                                    | Side Impact Sensing Module - Right - Signal  |
| B   | TN         | 2133                                    | Side Impact Sensing Module - Right - Voltage |

Inflatable Restraint Steering Wheel Module Coil (UK3)

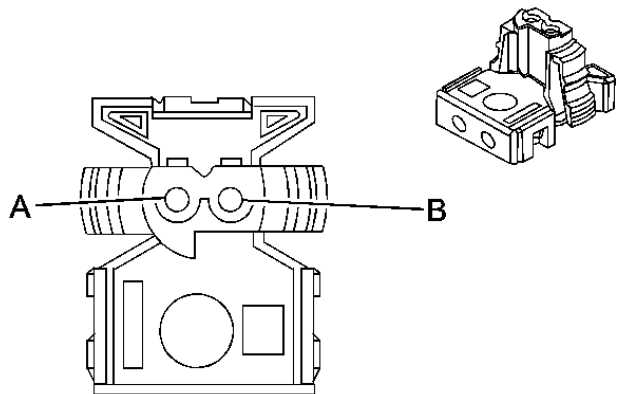


| Connector Part Information |            | • 16198556<br>• 4-Way F MODU Series IV (BK) |                                       |
|----------------------------|------------|---------------------------------------------|---------------------------------------|
| Pin                        | Wire Color | Circuit No.                                 | Function                              |
| 1                          | PU         | 1375                                        | Remote Radio Control Supply Voltage   |
| 2                          | GY/BK      | 1458                                        | Instrument Panel Lamps Supply Voltage |
| 3                          | D-BU       | 1796                                        | Steering Wheel Controls Signal        |
| 4                          | BK         | 1450                                        | Ground                                |

Inflatable Restraint Steering Wheel Module C1

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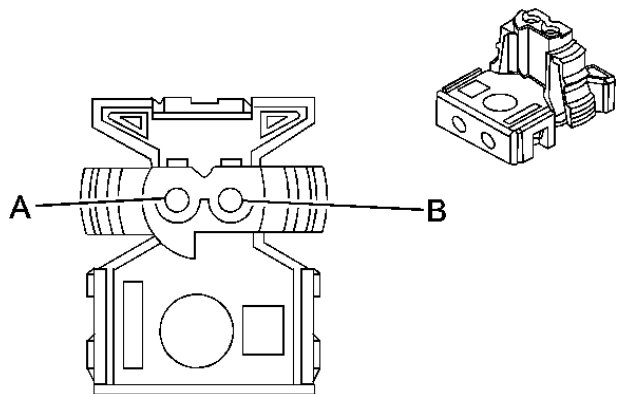


Connector Part Information

- 54560208
- 2-Way F ABX-3 Code B (GY)

| Pin | Wire Color | Circuit No. | Function                                       |
|-----|------------|-------------|------------------------------------------------|
| A   | TN         | 3021        | Steering Wheel Module - Stage 1 - High Control |
| B   | BN         | 3020        | Steering Wheel Module - Stage 1 - Low Control  |

Inflatable Restraint Steering Wheel Module C2



Connector Part Information

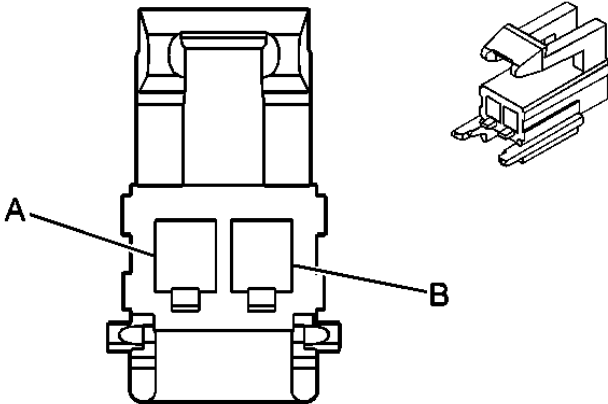
- 54560208
- 2-Way F ABX-3 Code B (PU)

| Pin | Wire Color | Circuit No. | Function |
|-----|------------|-------------|----------|
|     |            |             |          |

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|----------------------------------|--|--|--|
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|   |    |      |                                               |
|---|----|------|-----------------------------------------------|
| A | WH | 3023 | Steering Wheel Module - Stage 2- High Control |
| B | PK | 3022 | Steering Wheel Module - Stage 2- Low Control  |

### Seat Belt Pretensioner - Left



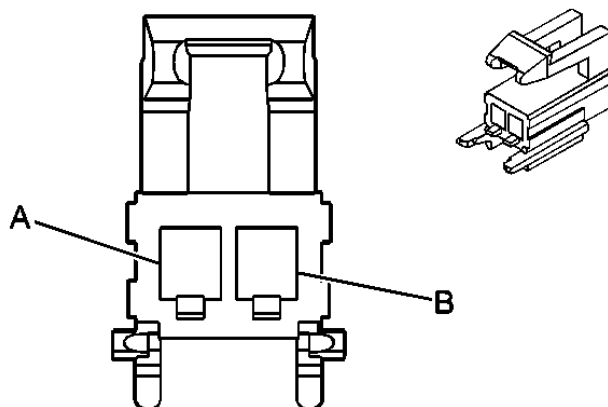
| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 12110505</li> <li>• 2-Way F Metri-Pack 150 Series (YE)</li> </ul> |                                              |
|----------------------------|------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Pin                        | Wire Color | Circuit No.                                                                                                | Function                                     |
| A                          | BK/WH      | 2118                                                                                                       | Seat Belt Pretensioner - Left - High Control |
| B                          | OG/BK      | 2119                                                                                                       | Seat Belt Pretensioner - Left - Low Control  |

### Seat Belt Pretensioner - Right

|                                                                 |  |  |  |
|-----------------------------------------------------------------|--|--|--|
| Empty space for Right Seat Belt Pretensioner wiring information |  |  |  |
|-----------------------------------------------------------------|--|--|--|

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| Connector Part Information |            | <ul style="list-style-type: none"> <li>• 12110505</li> <li>• 2-Way F Metri-Pack 150 Series (YE)</li> </ul> |                                               |
|----------------------------|------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Pin                        | Wire Color | Circuit No.                                                                                                | Function                                      |
| A                          | L-GN       | 2116                                                                                                       | Seat Belt Pretensioner - Right - High Control |
| B                          | OG         | 2117                                                                                                       | Seat Belt Pretensioner - Right - Low Control  |

## DIAGNOSTIC INFORMATION AND PROCEDURES

### DIAGNOSTIC CODE INDEX

### DIAGNOSTIC CODE INDEX

| DTC                                                    | Description                                 |
|--------------------------------------------------------|---------------------------------------------|
| <u>DTC B0012, B0013, B0014, B0016, B0017, or B0018</u> | ** MULTIPLE VALUES **                       |
| <u>DTC B0022, B0024, B0026, B0042, B0043, or B0044</u> | ** MULTIPLE VALUES **                       |
| <u>DTC B0028, B0029, or B0030</u>                      | ** MULTIPLE VALUES **                       |
| <u>DTC B0040, B0041, or B0045</u>                      | ** MULTIPLE VALUES **                       |
| <u>DTC B0051</u>                                       | Deployment Commanded                        |
| <u>DTC B0053</u>                                       | Deployment Commanded with Loop DTCs Present |
| <u>DTC B0057, B0058, or B0059</u>                      | ** MULTIPLE VALUES **                       |
| <u>DTC B0064, B0065, or B0066</u>                      | ** MULTIPLE VALUES **                       |
| <u>DTC B0077, B0078, B0079, B0080, B0081, or B0082</u> | ** MULTIPLE VALUES **                       |

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|                                                               |                                                  |
|---------------------------------------------------------------|--------------------------------------------------|
| <b><u>DTC B0092</u></b>                                       | Passenger Presence System<br>Performance         |
| <b><u>DTC B0098</u></b>                                       | Passenger Presence System<br>Configuration Error |
| <b><u>DTC B0100, B0101, B0102, B0103, B0104, or B0105</u></b> | ** MULTIPLE VALUES **                            |
| <b><u>DTC B1001</u></b>                                       | Option Configuration Error                       |
| <b><u>DTC U1241</u></b>                                       | Lost Communication With Scan<br>Tool             |

### DIAGNOSTIC STARTING POINT - SIR

Begin the system diagnosis with the **Diagnostic System Check - Vehicle** in Vehicle DTC Information. The Diagnostic System Check will provide the following information:

- The identification of the control module which commands the system
- The ability of the control module to communicate through the serial data circuit
- The identification of any stored diagnostic trouble codes (DTCs) and their status

The use of **Diagnostic System Check - Vehicle** in Vehicle DTC Information, will identify the correct procedure for diagnosing the system and where the procedure is located.

### PASSENGER PRESENCE SYSTEM FLASH CODE PROCEDURES

#### Description

When the ignition is turned ON, the inflatable restraint sensing and diagnostic module (SDM) performs tests to diagnose critical malfunctions within itself. When the SDM has completed the power-up mode, the SDM will establish communication with the passenger presence system (PPS). The PPS will respond by performing diagnostic tests to check for proper circuit continuity and for shorts to ground and voltage within the PPS. If the PPS detects a malfunction, the PPS will set a DTC, communicate with the SDM that a malfunction has occurred, and request the SDM to disable the instrument panel (I/P) module deployment loop. The SDM will respond by disabling the I/P module deployment loop, setting either DTC B0092 or B0098 and commanding the AIR BAG indicator ON. The SDM sets either DTC B0092 or B0098 to notify the driver of a PPS malfunction. The DTCs that the PPS set are non-class 2 and have to be flashed through the PASSENGER AIR BAG ON/OFF indicators located on the inside rearview mirror. The procedures below are designed to assist in the flashing of these codes. Before you start, read these procedures carefully and completely. For further information regarding the PPS, refer to **SIR System Description and Operation**.

**Passenger Presence System (PPS) Flash Code Procedure**

**IMPORTANT:** When flashing PPS codes, the instrument panel cluster (IPC) and dash lights will begin dimming ON and OFF. This is normal operation during the flashing procedure and does not indicate additional system faults.

1. Empty the front outboard passenger seat.
2. Install a scan tool.
3. Turn ON the ignition, with the engine OFF.
4. With a scan tool, request the PPS to flash DTCs.
5. When the PPS receives a valid request to flash DTCs, the PPS will perform the following:
  1. Illuminate both PASSENGER AIR BAG ON and OFF indicators located on the inside rear view mirror for 1 second.
  2. Turn OFF both PASSENGER AIR BAG ON and OFF indicators for 1 second.
  3. Flash the first number of the DTC using the OFF indicator. Count the number of times the OFF indicator flashes to obtain the first number of the DTC.
  4. Flash the second number of the DTC using the ON indicator. Count the number of times the ON indicator flashes to obtain the second number of the DTC.
  5. When the flashing procedure is initiated, the PPS will flash all current and history DTCs that are stored. After all DTCs have been flashed, to determine if the DTCs are current or history, the PPS will reflash the DTCs that are stored as current only. Any DTC that is not reflashed is stored as a history DTC.
6. If the flashing procedure was unsuccessful repeat this procedure. Due to the communication status between the SDM and the PPS module, this procedure may have to be repeated until a successful flashing attempt has been achieved.
7. Refer to the **Diagnostic Trouble Code (DTC) List - Vehicle** in Vehicle DTC Information to diagnose the DTCs you have obtained.

**SCAN TOOL DATA LIST**

The SIR Scan Tool Data List contains all the restraint system related parameters that are available on the scan tool. The parameters in the list are arranged in alphabetical order. The column, "Data List," indicates the location of the parameter within the scan tool menu selections.

Use the SIR Scan Tool Data List as directed by a diagnostic table or in order to supplement the diagnostic procedures. Begin all of the diagnostic procedures with the SIR Diagnostic System Check. Use the SIR Scan Tool Data List after the following are determined:

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- There is no published DTC procedure nor published symptom procedure for the customer concern.
- The DTC or symptom diagnostic procedure indicated by the diagnostic system check does not resolve the customer concern.

The Typical Data Values are obtained from a properly operating vehicle under the conditions specified in the first row of the Scan Tool Data List table. Comparison of the parameter values from the suspect vehicle with the Typical Data Values may reveal the source of the customer concern.

**SIR Scan Tool Data List**

| Scan Tool Parameter                                         | Data List            | Units Displayed   | Typical Data Value |
|-------------------------------------------------------------|----------------------|-------------------|--------------------|
| <b>Ignition ON/Engine OFF/Only Driver Seat Belt Buckled</b> |                      |                   |                    |
| 8 - Digit GM Part Number                                    | Module 2 Information | 8 - digit number  | Varies             |
| Calibration ID                                              | Module 1 Information | 4 - digit number  | Varies             |
| Component Serial                                            | Module 2 Information | 4 - digit number  | Varies             |
| Driver Seat Belt Status                                     | Data                 | Buckled/Unbuckled | Buckled            |
| Driver Side Impact Sensor ID                                | Module 1 Information | 2 - digit number  | Varies             |
| Front End Sensor 1 ID                                       | Module 1 Information | 2 - digit number  | Varies             |
| Front End Sensor 2 ID                                       | Module 1 Information | 2 - digit number  | Varies             |
| Ignition Voltage                                            | Data                 | Volts             | 12 volts           |
| Julian Date of Build                                        | Module 1 Information | 4 - digit number  | Varies             |
| Passenger Seat Belt Status                                  | Data                 | Buckled/Unbuckled | Unbuckled          |
| Passenger Side Impact Sensor ID                             | Module 1 Information | 2 - digit number  | Varies             |
| PROM ID                                                     | Module 1 Information | 4 - digit number  | Varies             |
| VIN Information                                             | VIN Information      | Number            | Varies             |
| Year Module Built                                           | Module 1             | 4 - digit number  | Varies             |

## SCAN TOOL DATA DEFINITIONS

The SIR scan tool data definitions contain a brief description of all SIR related parameters available on the scan tool. The parameters that are available on the scan tool are listed below in alphabetical order.

### 8 - Digit GM Part Number

The scan tool displays an 8 - digit part number. This number is the GM part number that is stored within the SDM memory.

### Calibration ID

The scan tool displays a 4 - digit number. This calibration ID is the check sum of the SDM read only memory contents.

### Component Serial

The scan tool displays the SDM serial number.

### Driver Seat Belt Status

The scan tool displays Buckled or Unbuckled. The signal from the drivers seat belt switch indicates whether the driver seat is buckled or unbuckled.

### Driver Side Impact Sensor ID

The scan tool displays a 2 - digit ID number. The ID signal sent to the SDM from the Driver SIS.

### Front End Sensor 1 ID

The scan tool displays a 2 - digit ID number. The ID signal sent to the SDM from the front end sensor.

### Front End Sensor 2 ID

The scan tool displays a 2 - digit ID number. The ID signal sent to the SDM from the front end sensor.

**Ignition Voltage**

The scan tool displays 0 - 20 volts. The Ignition represents the system voltage measured by the SDM at its ignition feed.

**Julian Date of Build**

This displays the day of the year the module was built.

**Passenger Seat Belt Status**

The scan tool displays Buckled or Unbuckled. The signal from the passengers seat belt switch indicates whether the passenger seat is buckled or unbuckled, for Rendezvous only.

**Passenger Side Impact Sensor ID**

The scan tool displays a 2 - digit ID number. The ID signal sent to the SDM from the Passenger SIS.

**PROM ID**

The scan tool displays a 4 - digit number. This number is the programmable read-only memory (PROM) ID.

**VIN Information**

The scan tool displays a list. The Body Control Module (BCM) is programmed in the assembly plant with the last four digits of SDM part number and the VIN of the vehicle.

**Year Module Built**

The scan tool displays what year the module was built.

**DTC 023****Circuit Description**

The inflatable restraint seat belt tension sensor is a 3-wire potentiometer mounted on the retractor or buckle side of the seat belt and provides an input to the passenger presence system (PPS). When an infant car seat is properly restrained on the front passenger seat, the seat belt is tightly secured through the car seat. The seat belt pulls on the tension sensor and changes the voltage signal to the PPS module. The PPS monitors the seat belt tension sensor circuit and if a fault is

detected, DTC 023 will be set. When the PPS detects this DTC within the PPS, it will notify the customer of the enable/disable status by turning ON the OFF indicator on the PASSENGER AIR BAG ON/OFF indicators. Then the PPS will communicate to the sensing and diagnostic module (SDM) through a non-class 2 communications circuit that a PPS fault is present. The SDM will then turn the AIR BAG indicator ON, and set DTC B0092 indicating a problem within the PPS and will suppress the deployment of the instrument panel (I/P) module.

**DTC Descriptor**

This diagnostic procedure supports the following DTC:

DTC 023 Seat Belt Tension Sensor Circuit Out of Range

**Conditions for Running the DTC**

Ignition 1 voltage is within the normal operating voltage range.

**Conditions for Setting the DTC**

- The PPS detects the voltage at the passenger seat belt tension retractor sensor signal is less than 0.05 volts or greater than 4.5 volts for 500 milliseconds.
- The PPS detects the voltage at the passenger seat belt tension retractor sensor 5-volt reference is less than 4.5 volts or greater than 9.1 volts for 500 milliseconds.
- The PPS detects the amperage at the passenger seat belt tension retractor sensor low reference is 25 ma or greater for 500 milliseconds.

**Action Taken When the DTC Sets**

- The PPS will set a DTC 023, then communicate with the SDM via non-class 2 circuit.
- The SDM will set DTC B0092.
- The SDM disables the I/P module deployment loop.
- The PPS will turn ON the passenger air bag status OFF indicator.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.

**Conditions for Clearing the DTC**

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

The following can cause an intermittent condition:

- A short between the passenger seat belt tension retractor sensor signal, 5-volt reference, and low reference circuits
- An open or high resistance between the passenger seat belt tension retractor sensor signal, 5-volt reference, and low reference circuits
- Inspect the passenger seat belt tension retractor sensor signal, 5-volt reference, and low reference circuits carefully for cutting and/or chafing.

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**5:** This step tests for a short to ground, a high resistance, or an open in the seat belt tension retractor sensor signal circuit.

**6:** This step tests for a short to ground, a high resistance, or an open in the seat belt tension retractor sensor 5-volt reference circuit.

**7:** This step tests for a short to ground, a high resistance, or an open in the seat belt tension retractor sensor low reference circuit.

**8:** This step tests for a short to voltage in the seat belt tension retractor sensor signal circuit.

**9:** This step tests the seat belt tension retractor sensor signal circuit input voltage range.

**10:** This step tests for a short to voltage in the seat belt tension retractor sensor 5-volt reference circuit.

**11:** This step tests for a short to voltage in the seat belt tension retractor sensor low reference circuit.

#### DTC 023

| Step                                                                | Action                                                 | Value(s) | Yes | No                                    |
|---------------------------------------------------------------------|--------------------------------------------------------|----------|-----|---------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u>                   |                                                        |          |     |                                       |
| <b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                        |          |     |                                       |
|                                                                     | Did you perform the Diagnostic System Check - Vehicle? |          |     | Go to <b><u>Diagnostic System</u></b> |

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| 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - | Go to <b>Step 2</b>  | <u>Check -<br/>Vehicle</u> in<br>Vehicle DTC<br>Information |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------|-------------------------------------------------------------|
| 2 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the seat belt tension retractor sensor connector.</li> <li>3. Inspect the seat belt tension retractor sensor terminals and harness connector for damage or corrosion.</li> </ol> <p>Does the seat belt tension retractor sensor terminals or harness connector exhibit any signs of damage or corrosion?</p>                                                         | - | Go to <b>Step 3</b>  | Go to <b>Step 4</b>                                         |
| 3 | <ol style="list-style-type: none"> <li>1. If the seat belt tension retractor sensor terminals are damaged, replace the seat belt tension retractor sensor. Refer to <b><u>REPAIR INSTRUCTIONS</u></b> in Seat Belts.</li> <li>2. If the seat belt tension retractor sensor harness connector is damaged, replace the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you complete the replacement?</p>              | - | Go to <b>Step 15</b> | -                                                           |
| 4 | <ol style="list-style-type: none"> <li>1. Disconnect the passenger presence system (PPS) module connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>2. Inspect the PPS module connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> | - | Go to <b>Step</b>    |                                                             |

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|    |                                                                                                                                                                                                                                                                |            |                      |                      |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------|----------------------|
|    | Did you find and correct the condition?                                                                                                                                                                                                                        |            | 15                   | Go to <b>Step 5</b>  |
| 5  | Test the seat belt tension retractor sensor signal circuit for high resistance, an open, or short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                           | -          | Go to <b>Step 15</b> | Go to <b>Step 6</b>  |
| 6  | Test the seat belt tension retractor sensor 5-volt reference circuit for high resistance, an open, or short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                 | -          | Go to <b>Step 15</b> | Go to <b>Step 7</b>  |
| 7  | Test the seat belt tension retractor sensor low reference circuit for high resistance, an open, or short to ground. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                    | -          | Go to <b>Step 15</b> | Go to <b>Step 8</b>  |
| 8  | 1. Turn ON the ignition, with the engine OFF.<br>2. Test the seat belt tension retractor sensor signal circuit for a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br>Did you find and correct the condition? | -          | Go to <b>Step 15</b> | Go to <b>Step 9</b>  |
| 9  | Test the seat belt tension retractor sensor signal circuit input voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br>Does the voltage measure within the specified range ?                                                | 0.05-4.5 V | Go to <b>Step 10</b> | Go to <b>Step 12</b> |
| 10 | Test the seat belt tension retractor sensor 5-volt reference circuit for a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br>Did you find and correct the condition?                                           | -          | Go to <b>Step 15</b> | Go to <b>Step 11</b> |

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |               |               |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------|---------------|
| 11 | <p>Test the seat belt tension retractor sensor low reference circuit for a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                                                             | - | Go to Step 15 | Go to Step 12 |
| 12 | <p><b>IMPORTANT:</b><br/>The seat belt tension retractor sensor is not service separately.</p> <p>Replace the seat belt tension retractor sensor. Refer to <b>Seat Belt Retractor Pretensioner Replacement - Right Front</b>. Did you complete the replacement?</p>                                                                                                                                                                                                      | - | Go to Step 13 | -             |
| 13 | <ol style="list-style-type: none"> <li>1. Reconnect all supplemental inflatable restraint (SIR) and PPS system components.</li> <li>2. Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol> <p>Does the DTC reset?</p> | - | Go to Step 14 | System OK     |
| 14 | <p>Replace the PPS. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                                                                                      | - | Go to Step 15 | -             |
|    | <ol style="list-style-type: none"> <li>1. Reconnect all SIR and PPS system components.</li> <li>2. Verify that all components, connectors and CPAs are properly mounted.</li> <li>3. Use the scan tool in order to clear the</li> </ol>                                                                                                                                                                                                                                  |   |               |               |

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|                     |                                                                                                                                                                                                                                                                                                      |   |                     |           |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------|-----------|
| 15                  | SIR and PPS DTCs.                                                                                                                                                                                                                                                                                    | - |                     |           |
|                     | <ol style="list-style-type: none"><li>Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li><li>Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li></ol> |   |                     |           |
| Does the DTC reset? |                                                                                                                                                                                                                                                                                                      |   | Go to <b>Step 2</b> | System OK |

## DTC 024

### Circuit Description

The inflatable restraints passenger presence system (PPS) module has an ignition 1 voltage input. The PPS continually monitors itself for faults. If the voltage on this circuit falls below a certain threshold, the PPS will set DTC 024. When the PPS detects this DTC within the PPS it will notify the customer of the enable/disable status by turning ON the OFF indicator on the PASSENGER AIR BAG ON/OFF indicators. Then the PPS will communicate to the sensing and diagnostic module (SDM) through a non-class 2 communications circuit that a PPS fault is present. The SDM will then turn the AIR BAG indicator ON, and set DTC B0092 or B0098 indicating a problem within the PPS and will suppress the deployment of the instrument panel (I/P) module.

### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC 024 PPS Ignition 1 Voltage Performance

### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

### Conditions for Setting the DTC

The PPS detects ignition 1 voltage is less than 8 volts for 500 milliseconds.

### Action Taken When the DTC Sets

- The PPS will set a DTC 024, then communicate with the SDM via non-class 2 circuit.

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- The SDM will set DTC B0092 or B0098.
- The SDM disables the I/P module deployment loop.
- The PPS will turn ON the passenger air bag status OFF indicator.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

#### Diagnostic Aids

The following can cause an intermittent condition:

- A short in the ignition 1 voltage circuit
- An open or high resistance in the ignition 1 voltage circuit

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

The PPS will set DTC 024 as a history code only, when the ignition voltage has fallen below 8 volts. This is a normal condition for DTC 024 and it should be diagnosed as a current DTC.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

- 2: This step inspects the PPS module connector.
- 3: This step inspects the main seat harness connector.
- 4: This step tests the PPS ground circuit for an open or high resistance.
- 5: This step tests the PPS ignition 1 voltage circuit for a short to ground, an open, or high resistance.

#### DTC 024

| Step                                | Action | Yes | No |
|-------------------------------------|--------|-----|----|
| Schematic Reference: SIR Schematics |        |     |    |

**Connector End View Reference: SIR Connector End Views**

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                                                                                  |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| 1 | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the passenger presence system (PPS) module connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>3. Inspect the PPS module connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p> | Go to <b>Step 7</b> | Go to <b>Step 3</b>                                                              |
| 3 | <ol style="list-style-type: none"> <li>1. Disconnect the main seat harness connector located under the RF seat. Refer to <b><u>Power Seat Systems Connector End Views</u></b> in Seats.</li> <li>2. Inspect both halves of the connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                                                             | Go to <b>Step 7</b> | Go to <b>Step 4</b>                                                              |
| 4 | <p>Test the PPS ground circuit for an open or high resistance. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                                                                                                                                                   | Go to <b>Step 7</b> | Go to <b>Step 5</b>                                                              |
| 5 | Test the PPS ignition 1 voltage circuit for a short to ground, an open, or high resistance. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.                                                                                                                                                                                                                                                                                                                                                         |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                     |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
|   | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Go to <b>Step 7</b> | Go to <b>Step 6</b> |
| 6 | Replace the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 7</b> | -                   |
| 7 | <ol style="list-style-type: none"> <li>1. Reconnect all supplemental inflatable restraint (SIR) and PPS system components.</li> <li>2. Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>4. Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>5. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol><br>Does the DTC reset? | Go to <b>Step 2</b> | System OK           |

## DTC 063

### Circuit Description

The inflatable restraint passenger presence system (PPS) is used to monitor the weight of an occupant in the front passenger seat. The PPS is calibrated at the seat assembly plant and cannot be recalibrated at a service center and must be replaced. The PPS continuously monitors itself and if the system becomes out of calibration, DTC 063 will be set. When the PPS detects this DTC within the PPS, it will notify the customer of the enable/disable status by turning ON the OFF indicator on the PASSENGER AIR BAG ON/OFF indicators. Then the PPS will communicate to the sensing and diagnostic module (SDM) through a non-class 2 communications circuit that a PPS fault is present. The SDM will then turn the AIR BAG indicator ON, and set DTC B0092 indicating a problem within the PPS and will suppress the deployment of the instrument panel (I/P) module.

### DTC Descriptor

This diagnostic procedure supports the following DTC:

### DTC 063 PPS Out of Calibration

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Action Taken When the DTC Sets

- The PPS will set a DTC 063, then communicate with the SDM via non-class 2 circuit.
- The SDM will set DTC B0092.
- The SDM disables the I/P module deployment loop.
- The PPS will turn ON the passenger air bag status OFF indicator.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.

#### Conditions for Clearing the DTC

DTC 063 is an indication that the PPS is out of calibration. You cannot recalibrate the PPS. Replace the PPS after following the instructions in the diagnostic table bellow.

#### Diagnostic Aids

The presence of current or history DTCs while attempting to rezero the PPS will cause the PPS module to set DTC 063. Verify that all supplemental inflatable restraint (SIR) and PPS DTCs have been cleared before rezeroing the PPS.

### DTC 063

| Step | Action                                                                                                                                                                                                                                                             | Yes                 | No                                                                               |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| 1    | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                             | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
|      | <ol style="list-style-type: none"><li>1. Install a scan tool.</li><li>2. Turn ON the ignition, with the engine OFF.</li><li>3. Use the scan tool in order to clear the supplemental inflatable restraint (SIR) and passenger presence system (PPS) DTCs.</li></ol> |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                  |                                                                                  |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 2 | <p>4. Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>5. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</p> <p>Does the DTC reset?</p>                                                                                                                                                                                                                                                     | Go to <b>Step 3</b>                                                              | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 3 | <p>Replace the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                                                                                                                                                      | Go to <b>Step 4</b>                                                              | -                                                                                |
| 4 | <p>1. Reconnect all SIR and PPS system components.</p> <p>2. Verify that all components, connectors and connector position assurances (CPAs) are properly mounted.</p> <p>3. Use the scan tool in order to clear the SIR and PPS DTCs.</p> <p>4. Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>5. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</p> <p>Did you complete the repair?</p> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information | -                                                                                |

#### DTC 064

#### Circuit Description

The inflatable restraint passenger presence system (PPS) communicates over a non-class 2 communication circuit to the inflatable restraint sensing and diagnostic module (SDM). When the ignition is turned ON, the inflatable restraint PPS module will check to make sure the PPS verification ID matches that stored in the SDM. If the SDM cannot communicate with the PPS, the SDM will set DTC B0092 and request the instrument panel cluster (IPC) to turn the AIR

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BAG indicator ON. If the SDM can communicate to the PPS but the verification ID does not match, the PPS will set DTC 033 and notify the SDM that a fault has occurred, and in turn the SDM will set DTC B0098 and request the IPC to turn the AIR BAG indicator ON.

#### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC 064 PPS Communication/ID Performance

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

- The PPS has lost communications with the SDM.
- The PPS verification ID does not match the ID that is stored in the SDM.

#### Action Taken When the DTC Sets

- The PPS will set a DTC 023, then communicate with the SDM via non-class 2 circuit.
- The SDM will set DTC B0092 or B0098.
- The SDM disables the instrument panel (I/P) module deployment loop.
- The PPS will turn ON the passenger air bag status OFF indicator.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

#### Diagnostic Aids

DTC B0098 is an indication that the SDM has received an incorrect PPS verification ID. The SDM will continue to request the verification ID from the PPS for 5 seconds. If the SDM does not receive the correct verification ID from the PPS within 5 seconds, the SDM will set DTC B0098 as current. If DTC B0092 is set, then the SDM cannot communicate with the PPS.

#### Test Description

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The numbers below refer to the step numbers on the diagnostic table.

**2:** This step tests for current PPS DTCs.

**8:** This step tests for a short to ground, a high resistance, or an open in the PPS class 2 serial data circuit.

**9:** This step tests for a short to voltage in the PPS class 2 serial data circuit.

### DTC 064

| Step                                                                                                                     | Action                                                                                                                                                                                                                                                                                     | Yes                           | No                                                                               |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference: <u>SIR Schematics</u></b><br><b>Connector End View Reference: <u>SIR Connector End Views</u></b> |                                                                                                                                                                                                                                                                                            |                               |                                                                                  |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                     | Go to <b>Step 2</b>           | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                                                                        | 1. Install a scan tool.<br>2. Turn ON the ignition, with the engine OFF.<br>3. With a scan tool, request the passenger presence system (PPS) to flash DTCs. Refer to <b><u>Passenger Presence System Flash Code Procedures</u></b> .<br><br>Does the PPS indicate that DTC 064 is current? | Go to <b>Step 3</b>           | Go to <b>Step 13</b>                                                             |
| 3                                                                                                                        | With the scan tool request the supplemental inflatable restraint (SIR) DTCs.<br>Does the scan tool indicate that DTC B0098 is current?                                                                                                                                                     | Go to <b><u>DTC B0098</u></b> | Go to <b>Step 4</b>                                                              |
| 4                                                                                                                        | 1. Turn OFF the ignition.<br>2. Disconnect the PPS module connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>3. Inspect the PPS module terminals and harness connector for damage or corrosion.       |                               |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
|   | Does the PPS module terminals or harness connector exhibit any signs of damage or corrosion?                                                                                                                                                                                                                                                                                                                                                                                                      | Go to <b>Step 5</b>  | Go to <b>Step 6</b> |
| 5 | <ol style="list-style-type: none"> <li>1. If the PPS module terminals are damaged, replace the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>2. If the PPS harness connector is damaged, replace the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you complete the replacement?</p>                                                                         | Go to <b>Step 13</b> | -                   |
| 6 | <ol style="list-style-type: none"> <li>1. Disconnect the main seat harness connector located under the RF seat. Refer to <b><u>Power Seat Systems Connector End Views</u></b> in Seats.</li> <li>2. Inspect both halves of the connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                | Go to <b>Step 13</b> | Go to <b>Step 7</b> |
| 7 | <ol style="list-style-type: none"> <li>1. Disconnect the sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>2. Inspect the SDM connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p> | Go to <b>Step 13</b> | Go to <b>Step 8</b> |
| 8 | <p>Test the PPS class 2 serial data circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                                                                   | Go to <b>Step 13</b> | Go to <b>Step 9</b> |

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                      |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 9  | <ol style="list-style-type: none"> <li>1. Turn ON the ignition, with the engine OFF.</li> <li>2. Test the PPS class 2 serial data circuit for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                                                                                     | Go to <b>Step 13</b> | Go to <b>Step 10</b> |
| 10 | <p>Replace the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 11</b> | -                    |
| 11 | <ol style="list-style-type: none"> <li>1. Reconnect all SIR and PPS system components.</li> <li>2. Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>4. Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>5. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol> <p>Does the DTC reset?</p> | Go to <b>Step 12</b> | System OK            |
| 12 | <p>Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 13</b> | -                    |
| 13 | <ol style="list-style-type: none"> <li>1. Reconnect all SIR and PPS system components.</li> <li>2. Verify that all components, connectors, and CPAs are properly mounted.</li> <li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>4. Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems</li> </ol>                                                                                                                                                                                                                    |                      |                      |

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|  |                                                                                                                                                   |                     |           |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
|  | for replacement, setup, and programming.<br>5. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. |                     |           |
|  | Does the DTC reset?                                                                                                                               | Go to <b>Step 2</b> | System OK |

## DTC 065

### Circuit Description

The inflatable restraint passenger presence system (PPS) uses a silicone filled sensor pad located underneath the passenger seat foam cushion and is connected by a hose clamp to a pressure sensor. The weight of the occupant sitting in the front passenger seat is measured as a pressure change within the bladder by the pressure sensor. The pressure sensor is a 3-wire sensor consisting of a power, ground, and signal circuit. The PPS continually monitors itself and if a fault in this circuit occurs, DTC 065 will set. When the PPS detects this DTC within the PPS, it will notify the customer of the enable/disable status by turning ON the OFF indicator on the PASSENGER AIR BAG ON/OFF indicators. Then the PPS will communicate to the sensing and diagnostic module (SDM) through a non-class 2 communications circuit that a PPS fault is present. The SDM will then turn the AIR BAG indicator ON, and set DTC B0092 indicating a problem within the PPS and will suppress the deployment of the instrument panel (I/P) module.

### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC 065 PPS Sensor Circuit Out of Range

### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

### Conditions for Setting the DTC

- The PPS detects the voltage at the PPS sensor signal is less than 0.05 volts or greater than 4.5 volts for 500 milliseconds.
- The PPS detects the voltage at the PPS sensor 5-volt reference is less than 4.5 volts or greater than 9.1 volts for 500 milliseconds.
- The PPS detects the amperage at the PPS sensor low reference is 25 ma or greater for 500 milliseconds.

**Action Taken When the DTC Sets**

- The PPS will set a DTC 065, then communicate with the SDM via non-class 2 circuit.
- The SDM will set DTC B0092.
- The SDM disables the I/P module deployment loop.
- The PPS will turn ON the passenger air bag status OFF indicator.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.

**Conditions for Clearing the DTC**

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

The following can cause an intermittent condition:

- A short between the PPS sensor signal, 5-volt reference, and low reference circuits
- An open or high resistance between the PPS sensor signal, 5-volt reference, and low reference circuits
- Inspect the PPS sensor signal, 5-volt reference, and low reference circuits carefully for cutting and/or chafing.

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

**Test Description**

The numbers below refer to the step numbers on the diagnostic table.

- 2:** This step inspects the PPS pressure sensor connector.
- 5:** This step tests for a short to ground, a high resistance, or an open in the PPS sensor signal circuit.
- 6:** This step tests for a short to ground, a high resistance, or an open in the PPS sensor 5-volt reference circuit.
- 7:** This step tests for a short to ground, a high resistance, or an open in the PPS sensor low

reference circuit.

**8:** This step tests for a short to voltage in the PPS sensor signal circuit.

**9:** This step tests the PPS sensor signal circuit input voltage range.

**10:** This step tests for a short to voltage in the PPS sensor 5-volt reference circuit.

**11:** This step tests for a short to voltage in the PPS sensor low reference circuit.

### DTC 065

| Step                                                                                                                     | Action                                                                                                                                                                                                                                                                                                                                                                                                                                      | Value(s) | Yes          | No                                                                               |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u><br><b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |              |                                                                                  |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                                                                                                      | -        | Go to Step 2 | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                                                                        | 1. Turn OFF the ignition.<br>2. Disconnect the passenger presence system (PPS) pressure sensor connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>3. Inspect the pressure sensor terminals and harness connector for damage or corrosion.<br><br>Does the PPS pressure sensor terminals or harness connector exhibit any signs of damage or corrosion? | -        | Go to Step 3 | Go to Step 4                                                                     |
| 3                                                                                                                        | 1. If the PPS pressure sensor terminals are damaged, replace the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>2. If the PPS pressure sensor harness                                                                                                                                                                                                    | -        |              |                                                                                  |

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|   |                                                                                                                                                                                                                                                |   |               |              |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------|--------------|
|   | connector is damaged, replace the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.                                                                                                                                       |   | Go to Step 13 | -            |
|   | Did you complete the replacement?                                                                                                                                                                                                              |   |               |              |
| 4 | 1. Disconnect the PPS module connector.<br>2. Inspect the PPS module connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems. | - | Go to Step 13 | Go to Step 5 |
|   | Did you find and correct the condition?                                                                                                                                                                                                        |   |               |              |
| 5 | Test the PPS sensor signal circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.                                                            | - | Go to Step 13 | Go to Step 6 |
|   | Did you find and correct the condition?                                                                                                                                                                                                        |   |               |              |
| 6 | Test the PPS sensor 5-volt reference circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.                                                  | - | Go to Step 13 | Go to Step 7 |
|   | Did you find and correct the condition?                                                                                                                                                                                                        |   |               |              |
| 7 | Test the PPS sensor low reference circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.                                                     | - | Go to Step 13 | Go to Step 8 |
|   | Did you find and correct the condition?                                                                                                                                                                                                        |   |               |              |
| 8 | 1. Turn ON the ignition, with the engine OFF.<br>2. Test the PPS sensor signal circuit for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.                                      | - | Go to Step 13 | Go to Step 9 |
|   | Did you find and correct the condition?                                                                                                                                                                                                        |   |               |              |

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |               |               |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|---------------|
| 9  | Test the PPS sensor signal circuit input voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Does the voltage measure within the specified range?                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.05-4.5 V | Go to Step 10 | Go to Step 12 |
| 10 | Test the PPS sensor 5-volt reference circuit for a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                               | -          | Go to Step 13 | Go to Step 11 |
| 11 | Test the PPS sensor low reference circuit for a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                  | -          | Go to Step 13 | Go to Step 12 |
| 12 | Replace the PPS. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -          | Go to Step 13 | -             |
| 13 | <ol style="list-style-type: none"> <li>1. Reconnect all supplemental inflatable restraint (SIR) and PPS system components.</li> <li>2. Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>4. Rezero the PPS. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>5. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol> <p>Does the DTC reset?</p> | -          | Go to Step 2  | System OK     |

**DTC B0012, B0013, B0014, B0016, B0017, OR B0018****Circuit Description**

The passenger frontal deployment loop consists of the following components:

- A dual stage inflatable restraint instrument panel (I/P) module
- The I/P module high circuits for both stages 1 and 2
- The I/P module low circuits for both stages 1 and 2

There are 2 shorting bars used within the I/P module connector which will short together both I/P module stage 1 high and low circuits, and both I/P module stage 2 high and low circuits, when the connector is disconnected. This will help to prevent unwanted deployment of the inflator module during servicing. During a frontal crash of sufficient force, the inflatable restraint sensing and diagnostic module (SDM) will allow current to flow through the deployment loop, in order to deploy the I/P module. The SDM performs continuous diagnostic tests on the deployment loops to check for proper circuit continuity and for shorts to ground or voltage. If a malfunction is detected, a DTC will be stored in memory.

**DTC Descriptors**

This diagnostic procedure supports the following DTCs:

- DTC B0012 Passenger Frontal Deployment Loop (Stage 2) Resistance Low
- DTC B0013 Passenger Frontal Deployment Loop (Stage 2) Open
- DTC B0014 Passenger Frontal Deployment Loop (Stage 2) Voltage Out of Range
- DTC B0016 Passenger Frontal Deployment Loop (Single Stage or Stage 1) Resistance Low
- DTC B0017 Passenger Frontal Deployment Loop (Single Stage or Stage 1) Open
- DTC B0018 Passenger Frontal Deployment Loop (Single Stage or Stage 1) Voltage Out of Range

**Conditions for Running the DTC**

Ignition 1 voltage is within the normal operating voltage range.

**Conditions for Setting the DTC**

- DTC B0012 stage 2 or B0016 stage 1 will set when the I/P module deployment loop resistance is less than 1.3 ohms for 500 milliseconds.
- DTC B0013 stage 2 or B0017 stage 1 will set when one of the following conditions occur:

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- The I/P module high circuit is less than 2.4 volts and the I/P module deployment loop is more than 6 ohms for 500 milliseconds.
- The I/P module deployment loop resistance is more than 4.8 ohms for 500 milliseconds.
- DTC B0014 stage 2 or B0018 stage 1 will set when one of the following conditions occur:
  - The I/P module high and/or low circuits is short to ground or short to voltage for 500 milliseconds.
  - The I/P module high circuit is less than 2.4 volts and I/P module deployment loop resistance is less than 6 ohms for 500 milliseconds.

#### Action Taken When the DTC Sets

The SDM commands the AIR BAG indicator ON via class 2 serial data.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

#### Diagnostic Aids

The following are possible causes of the malfunction:

- A short between the I/P module stage 1 or stage 2, high and low circuits
- An open or a high resistance in the I/P module stage 1 or stage 2, high or low circuits
- A short to ground or a short to voltage in the I/P module stage 1 or stage 2, high or low circuits
- The I/P module connector
- The SDM connector
- A malfunctioning I/P module
- A malfunctioning SDM

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**4:** This step tests to see if the malfunction is caused by the I/P module.

**6:** This step tests to see what DTCs are present. If DTC B0012 or B0016 is present, test the I/P module for a short between high and low circuits in stage 1 or stage 2. If DTC B0013 or B0017 is present, test the I/P module high and low circuits for an open and for high resistance in stage 1 or stage 2. If DTC B0014 or B0018 is present, test the I/P module high and low circuits for a short to ground and for a short to voltage in stage 1 or stage 2.

### DTC B0012, B0013, B0014, B0016, B0017, or B0018

| Step                                                                                                                     | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                 | No                                                                               |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u><br><b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                                                                                  |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                                                                        | 1. Turn OFF the ignition.<br>2. Disconnect instrument panel (I/P) module in-line connector. Refer to <b><u>Inflatable Restraint Instrument Panel Module Replacement</u></b> .<br>3. Inspect the component and harness sides of the in-line connector for the I/P module for damage or corrosion that may cause the malfunction. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.<br><br>Does connector exhibits any signs of damage or corrosion? | Go to <b>Step 3</b> | Go to <b>Step 4</b>                                                              |
| 3                                                                                                                        | 1. If the in-line connector for the I/P module is damaged, the I/P module must be replaced. Refer to <b><u>Inflatable Restraint Instrument Panel Module Replacement</u></b> .<br>2. If the wiring harness side of the I/P module                                                                                                                                                                                                                                                                                                        |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                     |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
|   | connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                     |
|   | Did you complete the repair?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Go to <b>Step 9</b> | -                   |
| 4 | <p><b>IMPORTANT:</b><br/>If scan tool displays multiple codes, diagnose the open code first.</p> <ol style="list-style-type: none"> <li>1. Use J 38715-80 adapter to connect the <b>J 38715-A</b> SIR Driver/Passenger Load Tool to the harness side of the I/P module in-line connector. See <b><u>Special Tools</u></b>. Use base of column and passenger inflator connectors.</li> <li>2. Turn ON the ignition, with the engine OFF.</li> <li>3. With the scan tool, request the SIR DTC display.</li> </ol> <p>Does the scan tool indicate that DTC B0012, B0013, B0014, B0016, B0017, or B0018 are current?</p>                                                                                            | Go to <b>Step 5</b> | Go to <b>Step 7</b> |
| 5 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect and remove both the <b>J 38715-A</b> and adapter. See <b><u>Special Tools</u></b>.</li> <li>3. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>4. Inspect the SDM connector for damage or corrosion that may cause a malfunction in the I/P module stage 1 or stage 2 high and/or low circuits. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> |                     |                     |

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|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Go to <b>Step 9</b> | Go to <b>Step 6</b> |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| <b>6</b> | <ol style="list-style-type: none"> <li>1. If DTC B0012 or B0016 is present, test the I/P module circuits for a short between the high and low circuits in stage 1 or stage 2.</li> <li>2. If DTC B0013 or B0017 is present, test the I/P module high and low circuits for an open and for high resistance in stage 1 or stage 2.</li> <li>3. If DTC B0014 or B0018 is present, test the I/P module high and low circuits for a short to ground and for a short to voltage in stage 1 or stage 2.</li> <li>4. All the above conditions refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> |                     |                     |
|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Go to <b>Step 9</b> | Go to <b>Step 8</b> |
| <b>7</b> | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the I/P module. Refer to <b><u>Inflatable Restraint Instrument Panel Module Replacement</u></b>.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                     |
|          | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Go to <b>Step 9</b> | -                   |
| <b>8</b> | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                     |
|          | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Go to <b>Step 9</b> | -                   |
| <b>9</b> | <ol style="list-style-type: none"> <li>1. Connect all SIR components.</li> <li>2. Turn ON the ignition, with the engine OFF.</li> <li>3. Use the scan tool in order to clear the DTCs.</li> <li>4. Operate the vehicle within the Conditions</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |

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|                                                          |                     |                     |           |
|----------------------------------------------------------|---------------------|---------------------|-----------|
| for Running the DTC as specified in the supporting text. |                     |                     |           |
|                                                          | Does the DTC reset? | Go to <b>Step 2</b> | System OK |

### DTC B0022, B0024, B0026, B0042, B0043, OR B0044

#### Circuit Description

The driver frontal deployment loop consists of the following components:

- A dual stage inflatable restraint steering wheel module
- The inflatable restraint steering wheel module coil
- The steering wheel module high circuits for both stages 1 and 2
- The steering wheel module low circuits for both stages 1 and 2

There are 2 shorting bars used within the steering wheel module coil connector which will short together both steering wheel module stage 1 high circuit and steering wheel module stage 1 low circuit, and both steering wheel module stage 2 high circuit and steering wheel module stage 2 low circuit, when the connector is disconnected. This will help to prevent unwanted deployment of the inflator module during servicing. During a frontal crash of sufficient force, the inflatable restraint sensing and diagnostic module (SDM) will allow current to flow through the deployment loop, in order to deploy the steering wheel module. The SDM performs continuous diagnostic tests on the deployment loops to check for proper circuit continuity and for shorts to ground or voltage. If a malfunction is detected, a DTC will be stored in memory.

#### DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B0022 Driver Frontal Deployment Loop (Single Stage or Stage 1) Resistance Low
- DTC B0024 Driver Frontal Deployment Loop (Single Stage or Stage 1) Voltage Out of Range
- DTC B0026 Driver Frontal Deployment Loop (Single Stage or Stage 1) Open
- DTC B0042 Driver Frontal Deployment Loop (Stage 2) Resistance Low
- DTC B0043 Driver Frontal Deployment Loop (Stage 2) Voltage Out of Range
- DTC B0044 Driver Frontal Deployment Loop (Stage 2) Open

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

**Conditions for Setting the DTC**

- DTC B0022 stage 1 or B0042 stage 2 will set when the steering wheel module deployment loop resistance is less than 1.3 ohms for 500 milliseconds.
- DTC B0024 stage 1 or B0043 stage 2 will set when one of the following conditions occur:
  - The steering wheel module high and/or low circuits are short to ground or short to voltage for 500 milliseconds.
  - The steering wheel module high circuit is less than 2.4 volts and the steering wheel module deployment loop resistance is less than 6 ohms for 500 milliseconds.
- DTC B0026 stage 1 or B0044 stage 2 will set when one of the following conditions occurs:
  - The steering wheel module high circuit is less than 2.4 volts and the steering wheel module deployment loop is more than 6 ohms for 500 milliseconds.
  - The steering wheel module deployment loop resistance is more than 4.8 ohms for 500 milliseconds.

**Action Taken When the DTC Sets**

The SDM commands the AIR BAG indicator ON via class 2 serial data.

**Conditions for Clearing the DTC**

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- A history DTC will clear once 255 malfunction-free ignition cycles have occurred.

**Diagnostic Aids**

The following are possible causes of the malfunction:

- A short between the steering wheel module stage 1 or stage 2, high and low circuits
- An open or a high resistance in the steering wheel module stage 1 or stage 2, high or low circuits
- A short to ground or a short to voltage in the steering wheel module stage 1 or stage 2, high or low circuits
- The steering wheel module coil connector
- The SDM connector
- A malfunctioning steering wheel module

- A malfunctioning steering wheel module coil
- A malfunctioning SDM

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

5: This step tests to see if the malfunction is caused by the steering wheel module or by the steering wheel module coil.

7: This step tests to see what DTCs are present. If DTC B0022 or B0042 is present, test the steering wheel module for a short between high and low circuits in stage 1 or stage 2. If DTC B0024 or B0043 is present, test the steering wheel module high and low circuits for an open and for high resistance in stage 1 or stage 2. If DTC B0026 or B0044 is present, test the steering wheel module high and low circuits for an open and for high resistance in stage 1 or stage 2.

DTC B0022, B0024, B0026, B0042, B0043, or B0044

| Step                                                                | Action                                                                                                                                                                                                                                                                                                                   | Yes                 | No                                                                               |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| Schematic Reference: <b><u>SIR Schematics</u></b>                   |                                                                                                                                                                                                                                                                                                                          |                     |                                                                                  |
| Connector End View Reference: <b><u>SIR Connector End Views</u></b> |                                                                                                                                                                                                                                                                                                                          |                     |                                                                                  |
| 1                                                                   | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                   | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                   | 1. Turn OFF the ignition.<br>2. Disconnect the steering wheel module coil in-line connector. Refer to <b><u>Inflatable Restraint Steering Wheel Module Coil Replacement</u></b> .<br>3. Inspect the component and harness sides of the in-line connector for the steering wheel module coil for damage or corrosion that |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
|   | <p>may cause the malfunction. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Does connector exhibits any signs of damage or corrosion?</p>                                                                                                                                                                                                                                                                                                                                                                                        | Go to <b>Step 3</b>  | Go to <b>Step 4</b> |
| 3 | <ol style="list-style-type: none"> <li>1. If the in-line connector for the steering wheel module coil is damaged, the steering wheel module coil must be replaced. Refer to <b><u>Inflatable Restraint Steering Wheel Module Coil Replacement</u></b>.</li> <li>2. If the wiring harness side of steering wheel module coil in-line connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you complete the repair?</p>                                                                                                                  | Go to <b>Step 11</b> | -                   |
| 4 | <p><b>IMPORTANT:</b><br/>If scan tool displays multiple codes, diagnose the open code first.</p> <ol style="list-style-type: none"> <li>1. Use J 38715-80 adapter to connect the <b>J 38715-A</b> SIR Driver/Passenger Load Tool to the harness side of the steering wheel module coil connector. See <b><u>Special Tools</u></b>. Use the base of column and passenger inflator connectors.</li> <li>2. Turn ON the ignition, with the engine OFF.</li> <li>3. Use the scan tool to request SIR DTCs displayed.</li> </ol> <p>Does the scan tool indicate that DTC B0022, B0024, B0026, B0042, B0043, or B0044 are current?</p> | Go to <b>Step 6</b>  | Go to <b>Step 5</b> |
|   | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                     |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 5 | <ol style="list-style-type: none"> <li>2. Disconnect and remove both the <b>J 38715-A</b> and adapter. See <b><u>Special Tools</u></b>.</li> <li>3. Connect the steering wheel module coil in-line connector.</li> <li>4. Remove the steering wheel module. Refer to <b><u>Inflatable Restraint Steering Wheel Module Replacement</u></b>.</li> <li>5. Use the J 38715-120 adapter to connect the <b>J 38715-A</b> to the upper steering wheel module coil connector on top of the steering column. See <b><u>Special Tools</u></b>. Use the steering column and passenger inflator connectors.</li> <li>6. Turn ON the ignition, with the engine OFF.</li> <li>7. Use the scan tool to request SIR DTCs displayed.</li> </ol> <p>Does the scan tool indicate that DTC B0022, B0024, B0026, B0042, B0043, or B0044 are current?</p> | Go to <b>Step 9</b> | Go to <b>Step 8</b> |
| 6 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect and remove both the <b>J 38715-A</b> and adapter. See <b><u>Special Tools</u></b>.</li> <li>3. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>4. Inspect the SDM connector for damage or corrosion that may cause a malfunction in the steering wheel module stage 1 or stage 2 high and/or low circuits. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol>                                                                                                          |                     |                     |

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|    | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Go to <b>Step 11</b> | Go to <b>Step 7</b>  |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 7  | <ol style="list-style-type: none"> <li>1. If DTC B0022 or B0042 is present, test the steering wheel module circuits for a short between the high and low circuits in stage 1 or stage 2.</li> <li>2. If DTC B0024 or B0043 is present, test the steering wheel module high and low circuits for a short to ground and for a short to voltage in stage 1 or stage 2.</li> <li>3. If DTC B0026 or B0044 is present, test the steering wheel module high and low circuits for an open and for high resistance in stage 1 or stage 2.</li> <li>4. All the above conditions refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> |                      |                      |
|    | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Go to <b>Step 11</b> | Go to <b>Step 10</b> |
| 8  | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the steering wheel module. Refer to <b><u>Inflatable Restraint Steering Wheel Module Replacement</u></b>.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                      |
|    | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 11</b> | -                    |
| 9  | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the steering wheel module coil. Refer to <b><u>Inflatable Restraint Steering Wheel Module Coil Replacement</u></b>.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                      |
|    | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 11</b> | -                    |
| 10 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                      |
|    | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 11</b> | -                    |

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|    |                                                                                                                                                                                                                                                                                                             |                     |           |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
| 11 | <ol style="list-style-type: none"><li>1. Connect all SIR components.</li><li>2. Turn ON the ignition, with the engine OFF.</li><li>3. Use the scan tool in order to clear the DTCs.</li><li>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li></ol> |                     |           |
|    | Does the DTC reset?                                                                                                                                                                                                                                                                                         | Go to <b>Step 2</b> | System OK |

#### DTC B0028, B0029, OR B0030

##### Circuit Description

The passenger side deployment loop consists the following components:

- An inflatable restraint side impact module RF
- The side impact module RF high circuits
- The side impact module RF low circuits

A shorting bar is used within the side impact module RF connector. The shorting bar will short together the side impact module RF high circuit, and the side impact module RF low circuit when the connector is disconnected. This helps prevent unwanted deployment of the inflator module during servicing. During a side or frontal crash of sufficient force, the inflatable restraint sensing and diagnostic module (SDM) will allow current to flow through the deployment loop. This flow of current will deploy the side impact module RF. The SDM performs continuous diagnostic tests on the deployment loops to check for proper circuit continuity and for shorts to ground or voltage. If a malfunction is detected, a DTC will be stored in memory.

##### DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B0028 Right Front Side Deployment Loop Resistance Low
- DTC B0029 Right Front Side Deployment Loop Open
- DTC B0030 Right Front Side Deployment Loop Voltage Out of Range

##### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

**Conditions for Setting the DTC**

- DTC B0028 will set when the side impact module RF deployment loop resistance is less than 1.3 ohms for 500 milliseconds.
- DTC B0029 will set when one of the following conditions occurs:
  - The side impact module RF high circuit is less than 2.4 volts and the side impact module RF deployment loop is more than 6 ohms for 500 milliseconds.
  - The side impact module RF deployment loop resistance is more than 4.8 ohms for 500 milliseconds.
- DTC B0030 will set when one of the following conditions occur:
  - The side impact module RF high and/or low circuits are short to ground or short to voltage for 500 milliseconds.
  - The side impact module RF high circuit is less than 2.4 volts and the side impact module RF deployment loop resistance is less than 6 ohms for 500 milliseconds.

**Action Taken When the DTC Sets**

The SDM commands the AIR BAG indicator ON via class 2 serial data.

**Conditions for Clearing the DTC**

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

The following are possible causes of the malfunction:

- A short between the side impact module RF high and low circuits
- An open or a high resistance in the side impact module RF high or low circuits
- A short to ground or a short to voltage in the side impact module RF high or low circuits
- The side impact module RF connector
- The SDM connector
- A malfunctioning side impact module RF
- A malfunctioning SDM

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Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

### Test Description

The number below refers to the step number on the diagnostic table.

**7:** This step tests to see what DTCs are present. If DTC B0028 is present, test the side impact module RF for a short between high and low circuits. If DTC B0029 is present, test the side impact module RF high and low circuits for an open and for high resistance. If DTC B0030 is present, test the side impact module RF high and low circuits for a short to ground or a short to voltage.

### DTC B0028, B0029, or B0030

| Step                                                                                                                     | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes                 | No                                                                               |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u><br><b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                                                                                  |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                                                                        | <ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Disconnect the side impact module RF connector. Refer to <b><u>Inflatable Restraint Side Impact Module Replacement - RH</u></b>.</li><li>3. Inspect the component and harness sides of the side impact module RF connector for damage or corrosion that may cause the malfunction. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li></ol> <p>Does connector exhibit any signs of damage or corrosion?</p> | Go to <b>Step 3</b> | Go to <b>Step 4</b>                                                              |
|                                                                                                                          | <ol style="list-style-type: none"><li>1. If the component side of the side impact</li></ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                     |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 3 | <p>module RF connector is damaged, the side impact module RF must be replaced. Refer to <b><u>Inflatable Restraint Side Impact Module Replacement - RH.</u></b></p> <p>2. If the harness side of side impact module RF connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                                                                                                  | Go to <b>Step 9</b> | -                   |
| 4 | <p><b>IMPORTANT:</b><br/>If the scan tool displays multiple codes, diagnose the open code first.</p> <p>1. Connect the <b>J 38715-A</b> SIR Driver/Passenger Load Tool to the harness side of the side impact module RF wiring harness connector. See <b><u>Special Tools</u></b>. Use the PASSENGER INFLATOR connector.</p> <p>2. Turn ON the ignition, with the engine OFF.</p> <p>3. Use the scan tool to request SIR DTCs displayed.</p> <p>Does the scan tool indicate that DTC B0028, B0029, or B0030 are current?</p> | Go to <b>Step 6</b> | Go to <b>Step 5</b> |
| 5 | <p>1. Turn OFF the ignition.</p> <p>2. Disconnect and remove the <b>J 38715-A</b> . See <b><u>Special Tools</u></b>.</p> <p>3. Replace the side impact module RF. Refer to <b><u>Inflatable Restraint Side Impact Module Replacement - RH.</u></b></p> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                              | Go to <b>Step 9</b> | -                   |
|   | <p>1. Turn OFF the ignition.</p> <p>2. Disconnect and remove the <b>J 38715-A</b> . See <b><u>Special Tools</u></b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                     |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 6 | <ol style="list-style-type: none"> <li>3. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>4. Inspect the SDM connector for damage or corrosion that may cause a malfunction in the side impact module RF high and/or low circuits. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                      | Go to <b>Step 9</b> | Go to <b>Step 7</b> |
| 7 | <ol style="list-style-type: none"> <li>1. If DTC B0028 is present, test the side impact module RF circuits for a short between the high and low circuits.</li> <li>2. If DTC B0029 is present, test the side impact module RF high and low circuits for an open and for high resistance.</li> <li>3. If DTC B0030 is present, test the side impact module RF high and low circuits for a short to ground and for a short to voltage.</li> <li>4. All the above conditions refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p> | Go to <b>Step 9</b> | Go to <b>Step 8</b> |
| 8 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> </ol> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                                                                                                                                                    | Go to <b>Step 9</b> | -                   |
|   | <ol style="list-style-type: none"> <li>1. Connect all SIR components.</li> <li>2. Turn ON the ignition, with the engine</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |                     |

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|   |                                                                                                       |                     |           |
|---|-------------------------------------------------------------------------------------------------------|---------------------|-----------|
| 9 | OFF.                                                                                                  |                     |           |
|   | 3. Use the scan tool in order to clear the DTCs.                                                      |                     |           |
|   | 4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. |                     |           |
|   | Does the DTC reset?                                                                                   | Go to <b>Step 2</b> | System OK |

### DTC B0040, B0041, OR B0045

#### Circuit Description

The driver side deployment loop consists the following components:

- An inflatable restraint side impact module LF
- The side impact module LF high circuits
- The side impact module LF low circuits

A shorting bar is used within the side impact module LF connector. The shorting bar will short together the side impact module LF high circuit and the side impact module LF low circuit when the connector is disconnected. This helps prevent unwanted deployment of the inflator module during servicing. During a side or frontal crash of sufficient force, the inflatable restraint sensing and diagnostic module (SDM) will allow current to flow through the deployment loop. This flow of current will deploy the side impact module LF. The SDM performs continuous diagnostic tests on the deployment loops to check for proper circuit continuity and for shorts to ground or voltage. If a malfunction is detected, a DTC will be stored in memory.

#### DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B0040 Left Front Side Deployment Loop Resistance Low
- DTC B0041 Left Front Side Deployment Loop Open
- DTC B0045 Left Front Side Deployment Loop Voltage Out of Range

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

- DTC B0040 will set when the SDM detects the LF side impact module deployment loop resistance is less than 1.3 ohms for 500 milliseconds.
- DTC B0041 will set when one of the following conditions occurs:
  - The SDM detects the LF side impact module deployment loop resistance is greater than 4.8 ohms for 500 milliseconds.
  - The SDM detects the voltage at the LF side impact module high control is less than 2.4 volts and LF side impact module deployment loop resistance is 6 ohms or greater for 500 milliseconds.
- DTC B0045 will set when one of the following conditions occurs:
  - The SDM detects the voltage at the LF side impact module high control is greater than 6 volts for 500 milliseconds.
  - The SDM detects the voltage at the LF side impact module high control is less than 2.4 volts and the LF side impact module deployment loop resistance is less than 6 ohms for 500 milliseconds.

#### Action Taken When the DTC Sets

The SDM commands ON the AIR BAG indicator via class 2 serial data.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC is no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction-free ignition cycles have occurred.

#### Diagnostic Aids

The following are possible causes of the malfunction:

- A short between the side impact module LF high and low circuits
- An open or a high resistance in the side impact module LF high or low circuits
- A short to ground or a short to voltage in the side impact module LF high or low circuits
- The side impact module LF connector
- The SDM connector
- A malfunctioning side impact module LF
- A malfunctioning SDM

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the

connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The number below refers to the step number on the diagnostic table.

**6:** This step tests to see what DTCs are present. If DTC B0040 is present, test the side impact module LF for a short between high and low circuits. If DTC B0041 is present, test the side impact module LF high and low circuits for an open and for high resistance. If DTC B0045 is present, test the side impact module LF high and low circuits for a short to ground or a short to voltage.

#### DTC B0040, B0041, or B0045

| Step                                                                | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes                 | No                                                                               |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| Schematic Reference: <b><u>SIR Schematics</u></b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |                                                                                  |
| Connector End View Reference: <b><u>SIR Connector End Views</u></b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |                                                                                  |
| 1                                                                   | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                   | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the LF side impact module in-line connector. Refer to <b><u>Inflatable Restraint Side Impact Module Replacement - LH</u></b>.</li> <li>3. Inspect the component and harness sides of the in-line connector for the side impact module LF for damage or corrosion that may cause the malfunction. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Does connector exhibits any signs of damage or corrosion?</p> | Go to <b>Step 3</b> | Go to <b>Step 4</b>                                                              |
|                                                                     | <ol style="list-style-type: none"> <li>1. If the LF side impact module harness</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                     |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 3 | <p>connector exhibits any of the above conditions, replace the side impact module wiring harness. Refer to <b><u>Inflatable Restraint Side Impact Module Replacement - LH.</u></b></p> <p>2. Replace the harness side of the LF side impact module in-line connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the replacement?</p>                                                                                                                                        | Go to <b>Step 9</b> | -                   |
| 4 | <p><b>IMPORTANT:</b><br/>If the scan tool displays multiple codes, diagnose the open code first.</p> <p>1. Install the <b>J 38715-A</b> SIR Driver/Passenger Load Tool to the harness side of the side impact module LF in-line connector. See <b><u>Special Tools</u></b>. Use PASSENGER INFLATOR connector.</p> <p>2. Turn ON the ignition, with the engine OFF.</p> <p>3. With a scan tool, request the SIR DTC display.</p> <p>Does the scan tool indicate that either DTC B0040, B0041, or B0045 is current?</p> | Go to <b>Step 5</b> | Go to <b>Step 7</b> |
| 5 | <p>1. Turn OFF the ignition.</p> <p>2. Remove the <b>J 38715-A</b> . See <b><u>Special Tools</u></b>.</p> <p>3. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>4. Inspect the SDM connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in</p>  |                     |                     |

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| Wiring Systems. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
|                 | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 9</b> | Go to <b>Step 6</b> |
| <b>6</b>        | <ol style="list-style-type: none"> <li>1. If DTC B0040 is present, test the side impact module LF circuits for a short between the high and low circuits.</li> <li>2. If DTC B0041 is present, test the side impact module LF high and low circuits for an open and for high resistance.</li> <li>3. If DTC B0045 is present, test the side impact module LF high and low circuits for a short to ground and for a short to voltage.</li> <li>4. All the above conditions refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> |                     |                     |
|                 | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 9</b> | Go to <b>Step 8</b> |
| <b>7</b>        | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the side impact module LF. Refer to <b><u>Inflatable Restraint Side Impact Module Replacement - LH.</u></b></li> </ol>                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |
|                 | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Go to <b>Step 9</b> | -                   |
| <b>8</b>        | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> </ol>                                                                                                                                                                                                                                                                                                                                              |                     |                     |
|                 | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Go to <b>Step 9</b> | -                   |
| <b>9</b>        | <ol style="list-style-type: none"> <li>1. Reconnect all SIR system components.</li> <li>2. Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>3. Use the scan tool in order to clear the DTCs.</li> <li>4. Operate the vehicle within the Conditions</li> </ol>                                                                                                                                                                                                                                                    |                     |                     |

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|  |                                                          |                     |           |
|--|----------------------------------------------------------|---------------------|-----------|
|  | for Running the DTC as specified in the supporting text. |                     |           |
|  | Does the DTC reset?                                      | Go to <b>Step 2</b> | System OK |

#### DTC B0051

##### Circuit Description

The inflatable restraint sensing and diagnostic module (SDM) contains sensing devices that convert vehicle velocity changes to electrical signals. The SDM processes the generated electrical signals and compares them to values stored in memory. When the generated signals exceed the stored values, the SDM performs additional signal processing and compares the generated signals to signals stored in memory. When 2 of the generated signals exceed the stored values, the SDM will cause current to flow through the inflator modules, deploying the inflator modules, and causing DTC B0051 to set.

##### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B0051 Deployment Commanded

##### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

##### Conditions for Setting the DTC

The DTC will set if one of the following conditions occur:

- The SDM detects a frontal crash of sufficient force to warrant deployment of the frontal inflator modules.
- The SDM detects a side impact crash of sufficient force to warrant deployment of a side inflator module.

##### Action Taken When the DTC Sets

- The SDM commands the AIR BAG indicator ON via class 2 serial data.
- The SDM records crash data.

##### Conditions for Clearing the DTC

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DTC B0051 is a latched code. You cannot clear a latched code. Replace the SDM after following the instructions in the diagnostic table.

#### DTC B0051

| Step                                              | Action                                                                                                                                                                                                                                                                                                                                              | Yes                 | No                                                                               |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference: <u>SIR Schematics</u></b> |                                                                                                                                                                                                                                                                                                                                                     |                     |                                                                                  |
| 1                                                 | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                              | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                 | 1. Turn OFF the ignition.<br>2. Inspect the vehicle for signs of inflator module deployment.<br><br>Does the vehicle show any signs of inflator module deployment?                                                                                                                                                                                  | Go to <b>Step 5</b> | Go to <b>Step 3</b>                                                              |
| 3                                                 | Inspect the front of the vehicle and undercarriage for signs of impact/collision. Does the vehicle show any signs of impact/collision?                                                                                                                                                                                                              | Go to <b>Step 5</b> | Go to <b>Step 4</b>                                                              |
| 4                                                 | Replace the inflatable restraint sensing and diagnostic module (SDM). Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>Did you complete the replacement?                                                                                                                | Go to <b>Step 6</b> | -                                                                                |
| 5                                                 | 1. Install a scan tool.<br>2. With a scan tool, observe the SIR DTC display.<br>3. If a history DTC exists, refer to Diagnostic Aids for that specific DTC and diagnose the problem.<br>4. Replace components and perform inspections as required following an accident. Refer to <b><u>Repairs and Inspections Required After a Collision.</u></b> |                     |                                                                                  |

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|   | Did you complete the action?                                                                                                                                                                                                                             | Go to <b>Step 6</b> | -         |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
| 6 | <ol style="list-style-type: none"><li>1. Reconnect all SIR components.</li><li>2. Use the scan tool in order to clear the DTCs.</li><li>3. Operate the vehicle within the Conditions for Running the DTC, as specified in the supporting text.</li></ol> |                     |           |
|   | Does the DTC reset?                                                                                                                                                                                                                                      | Go to <b>Step 2</b> | System OK |

### DTC B0053

#### Circuit Description

The inflatable restraint sensing and diagnostic module (SDM) contains sensing devices that converts vehicle velocity changes to electrical signals. The SDM processes the generated electrical signals and compares them to values stored in memory. When the generated signals exceed the stored values, the SDM performs additional signal processing and compares the generated signals to signals stored in memory. When 2 of the generated signals exceed the stored values, the SDM will cause current to flow through the inflator modules, deploying the inflator modules. DTC B0053 will set along with DTC B0051 when a deployment occurs while a circuit malfunction is present in any one of the deployment loops.

#### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B0053 Deployment Commanded with Loop DTCs Present

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

The DTC will set if one of the following conditions occur:

- The SDM detects a frontal crash of sufficient force to warrant deployment of the frontal inflator modules.
- The SDM detects a side impact crash of sufficient force to warrant deployment of a side inflator module.

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#### Action Taken When the DTC Sets

- The SDM commands the AIR BAG indicator ON via class 2 serial data.
- The SDM records crash data.

#### Conditions for Clearing the DTC

DTC B0053 is a latched code. You cannot clear a latched code. Replace the SDM after following the instructions in the diagnostic table.

#### Diagnostic Aids

DTC B0053 will be accompanied by another DTC, other than DTC B1000 and DTC B0051. Repair the malfunction causing the other DTCs before installing a new SDM.

#### DTC B0053

| Step                                              | Action                                                                                                                                                                                                                               | Yes                 | No                                                                               |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference: <u>SIR Schematics</u></b> |                                                                                                                                                                                                                                      |                     |                                                                                  |
| 1                                                 | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                               | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                 | 1. Turn OFF the ignition.<br>2. Inspect the vehicle for signs of inflator module deployment.<br><br>Does the vehicle show any signs of inflator module deployment?                                                                   | Go to <b>Step 5</b> | Go to <b>Step 3</b>                                                              |
| 3                                                 | Inspect the front of the vehicle and undercarriage for signs of impact/collision. Does the vehicle show any signs of impact/collision?                                                                                               | Go to <b>Step 5</b> | Go to <b>Step 4</b>                                                              |
| 4                                                 | Replace the inflatable restraint sensing and diagnostic module (SDM). Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>Did you complete the replacement? | Go to <b>Step 6</b> | -                                                                                |
|                                                   |                                                                                                                                                                                                                                      |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |           |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
| 5 | <ol style="list-style-type: none"><li>1. Install a scan tool.</li><li>2. With a scan tool, observe the SIR DTC display.</li><li>3. If a history DTC exists, refer to Diagnostic Aids for that specific DTC and diagnose the problem.</li><li>4. Replace components and perform inspections as required following an accident. Refer to <b><u>Repairs and Inspections Required After a Collision.</u></b></li></ol> <p>Did you complete the action?</p> | Go to <b>Step 6</b> | -         |
| 6 | <ol style="list-style-type: none"><li>1. Reconnect all SIR components.</li><li>2. Use the scan tool in order to clear the DTCs.</li><li>3. Operate the vehicle within the Conditions for Running the DTC, as specified in the supporting text.</li></ol> <p>Does the DTC reset?</p>                                                                                                                                                                    | Go to <b>Step 2</b> | System OK |

#### DTC B0057, B0058, OR B0059

##### Circuit Description

The passenger seat belt retractor pretensioner deployment loop consists the following components:

- An inflatable restraint seat belt retractor pretensioner RF
- The seat belt retractor pretensioner RF high circuits
- The seat belt retractor pretensioner RF low circuits

A shorting bar used within the seat belt retractor pretensioner connector will short together both seat belt pretensioner high and low circuits when the connector is disconnected. This will help to prevent unwanted deployment of the pretensioner during servicing. During a frontal crash of sufficient force, the inflatable restraint sensing and diagnostic module (SDM) will allow current to flow through the deployment loop in order to deploy the seat belt pretensioner. The SDM performs continuous diagnostic tests on the deployment loops to check for proper circuit continuity and for shorts to ground or voltage. If a malfunction is detected, a DTC will be stored

in memory.

### **DTC Descriptors**

This diagnostic procedure supports the following DTCs:

- DTC B0057 Right Front Pretensioner Deployment Loop Resistance Low
- DTC B0058 Right Front Pretensioner Deployment Loop Open
- DTC B0059 Right Front Pretensioner Deployment Loop Voltage Out of Range

### **Conditions for Running the DTC**

Ignition 1 voltage is within the normal operating voltage range.

### **Conditions for Setting the DTC**

- DTC B0057 will set when the seat belt pretensioner RF deployment loop resistance is less than 1.3 ohms for 500 milliseconds.
- DTC B0058 will set when one of the following conditions occurs:
  - The seat belt pretensioner RF high circuit is less than 2.4 volts and the seat belt pretensioner RF deployment loop is more than 6 ohms for 500 milliseconds.
  - The seat belt pretensioner RF deployment loop resistance is more than 4.8 ohms for 500 milliseconds.
- DTC B0059 when one of the following conditions occur:
  - The seat belt pretensioner RF high and/or low circuits are short to ground or short to voltage for 500 milliseconds.
  - The seat belt pretensioner RF high circuit is less than 2.4 volts and the seat belt pretensioner RF deployment loop resistance is less than 6 ohms for 500 milliseconds.

### **Action Taken When the DTC Sets**

The SDM commands the AIR BAG indicator ON via class 2 serial data.

### **Conditions for Clearing the DTC**

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

### **Diagnostic Aids**

The following are possible causes of the malfunction:

- A short between the seat belt pretensioner RF high and low circuits
- An open or a high resistance in the seat belt pretensioner RF high or low circuits
- A short to ground or a short to voltage in the seat belt pretensioner RF high or low circuits
- The seat belt pretensioner RF connector
- The SDM connector
- A malfunctioning seat belt pretensioner
- A malfunctioning SDM

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**4:** This step tests to see if the malfunction is caused by the seat belt pretensioner RF.

**6:** This step tests to see what DTCs are present. If DTC B0057 is present, test the seat belt pretensioner RF for a short between high and low circuits. If DTC B0058 is present, test the seat belt pretensioner RF high and low circuits for an open and for high resistance. If DTC B0059 is present, test the seat belt pretensioner RF high and low circuits for a short to ground and for a short to voltage.

#### DTC B0057, B0058, or B0059

| Step                                                                                                                     | Action                                                                                                                   | Yes                 | No                                                                               |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference: <u>SIR Schematics</u></b><br><b>Connector End View Reference: <u>SIR Connector End Views</u></b> |                                                                                                                          |                     |                                                                                  |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                   | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
|                                                                                                                          | 1. Turn OFF the ignition.<br>2. Disconnect seat belt pretensioner RF in-line connector. Refer to <b><u>Seat Belt</u></b> |                     |                                                                                  |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     |                     |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 2 | <p><b><u>Retractor Pretensioner Replacement - Right Front.</u></b></p> <p>3. Inspect the component and harness sides of the in-line connector for the seat belt pretensioner for damage or corrosion that may cause the malfunction. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Does the connector exhibit any signs of damage or corrosion?</p>                                                           | Go to <b>Step 3</b> | Go to <b>Step 4</b> |
| 3 | <p>1. If the in-line connector for the seat belt pretensioner RF is damaged, the seat belt pretensioner must be replaced. Refer to <b><u>Seat Belt Retractor Pretensioner Replacement - Right Front.</u></b></p> <p>2. If the wiring harness side of the seat belt pretensioner connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                          | Go to <b>Step 9</b> | -                   |
| 4 | <p><b>IMPORTANT:</b><br/>If the scan tool displays multiple codes, diagnose the open code first.</p> <p>1. Connect the <b>J 38715-A</b> SIR Driver/Passenger Load Tool to the harness side of the seat belt pretensioner RF connector. See <b><u>Special Tools</u></b>. Use PASSENGER INFLATOR connector.</p> <p>2. Turn ON the ignition, with the engine OFF.</p> <p>3. With the scan tool, request the SIR DTC display.</p> <p>Does the scan tool indicate that DTC B0057, B0058, or B0059 are current?</p> | Go to <b>Step 5</b> | Go to <b>Step 7</b> |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                     |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 5 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect and remove the <b>J 38715-A</b> .<br/>See <b><u>Special Tools</u></b>.</li> <li>3. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>4. Inspect the SDM connector for damage or corrosion that may cause a malfunction in the seat belt pretensioner RF high and/or low circuits. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p> | Go to <b>Step 9</b> | Go to <b>Step 6</b> |
| 6 | <ol style="list-style-type: none"> <li>1. If DTC B0057 is present, test the seat belt pretensioner RF for a short between the high and low circuits.</li> <li>2. If DTC B0058 is present, test the seat belt pretensioner RF high and low circuits for an open and for high resistance.</li> <li>3. If DTC B0059 is present, test the seat belt pretensioner RF high and low circuits for a short to ground and for a short to voltage.</li> <li>4. All the above conditions refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                                                                                              | Go to <b>Step 9</b> | Go to <b>Step 8</b> |
| 7 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the seat belt pretensioner RF. Refer to <b><u>Seat Belt Retractor Pretensioner Replacement - Right Front</u></b>.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                     |

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|   |                                                                                                                                                                                                                                                                                                             |                     |           |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
|   | Did you complete the replacement?                                                                                                                                                                                                                                                                           | Go to <b>Step 9</b> | -         |
| 8 | <ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li></ol>                                                                             |                     |           |
|   | Did you complete the replacement?                                                                                                                                                                                                                                                                           | Go to <b>Step 9</b> | -         |
| 9 | <ol style="list-style-type: none"><li>1. Connect all SIR components.</li><li>2. Turn ON the ignition, with the engine OFF.</li><li>3. Use the scan tool in order to clear the DTCs.</li><li>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li></ol> |                     |           |
|   | Does the DTC reset?                                                                                                                                                                                                                                                                                         | Go to <b>Step 2</b> | System OK |

**DTC B0064, B0065, OR B0066****Circuit Description**

The driver seat belt retractor pretensioner LF deployment loop consists the following components:

- An inflatable restraint seat belt retractor pretensioner LF
- The seat belt retractor pretensioner LF high circuits
- The seat belt retractor pretensioner LF low circuits

A shorting bar used within the seat belt retractor pretensioner connector will short together both seat belt pretensioner high and low circuits when the connector is disconnected, this will help to prevent unwanted deployment of the pretensioner during servicing. During a frontal crash of sufficient force, the inflatable restraint sensing and diagnostic module (SDM) will allow current to flow through the deployment loop in order to deploy the seat belt pretensioner. The SDM performs continuous diagnostic tests on the deployment loops to check for proper circuit continuity and for shorts to ground or voltage. If a malfunction is detected, a DTC will be stored in memory.

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#### DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B0064 Left Front Pretensioner Deployment Loop Resistance Low
- DTC B0065 Left Front Pretensioner Deployment Loop Open
- DTC B0066 Left Front Pretensioner Deployment Loop Voltage Out of Range

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

- DTC B0064 will set when the seat belt pretensioner LF deployment loop resistance is less than 1.3 ohms for 500 milliseconds.
- DTC B0065 will set when one of the following conditions occurs:
  - The seat belt pretensioner LF high circuit is less than 2.4 volts and the seat belt pretensioner LF deployment loop is more than 6 ohms for 500 milliseconds.
  - The seat belt pretensioner LF deployment loop resistance is more than 4.8 ohms for 500 milliseconds.
- DTC B0066 when one of the following conditions occur:
  - The seat belt pretensioner LF high and/or low circuits is short to ground or short to voltage for 500 milliseconds.
  - The seat belt pretensioner LF high circuit is less than 2.4 volts and the seat belt pretensioner LF deployment loop resistance is less than 6 ohms for 500 milliseconds.

#### Action Taken When the DTC Sets

The SDM commands the AIR BAG indicator ON via class 2 serial data.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

#### Diagnostic Aids

The following are possible causes of the malfunction:

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- A short between the seat belt pretensioner LF high and low circuits
- An open or a high resistance in the seat belt pretensioner LF high or low circuits
- A short to ground or a short to voltage in the seat belt pretensioner LF high or low circuits
- The seat belt pretensioner LF connector
- The SDM connector
- A malfunctioning seat belt pretensioner
- A malfunctioning SDM

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**4:** This step tests to see if the malfunction is caused by the seat belt pretensioner LF.

**6:** This step tests to see what DTCs are present. If DTC B0064 is present, test the seat belt pretensioner LF for a short between high and low circuits. If DTC B0065 is present, test the seat belt pretensioner LF high and low circuits for an open and for high resistance. If DTC B0066 is present, test the seat belt pretensioner LF high and low circuits for a short to ground and for a short to voltage.

#### DTC B0064, B0065, or B0066

| Step                                                                | Action                                                                                                                                                        | Yes                 | No                                                                               |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u>                   |                                                                                                                                                               |                     |                                                                                  |
| <b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                               |                     |                                                                                  |
| 1                                                                   | Did you perform the Diagnostic System Check - Vehicle?                                                                                                        | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
|                                                                     | 1. Turn OFF the ignition.<br>2. Disconnect seat belt pretensioner LF in-line connector. Refer to <b><u>Seat Belt Retractor Pretensioner Replacement -</u></b> |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                     |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 2 | <p><b><u>Left Front.</u></b></p> <p>3. Inspect the component and harness sides of the in-line connector for the seat belt pretensioner for damage or corrosion that may cause the malfunction. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Does the connector exhibit any signs of damage or corrosion?</p>                                                                                                     | Go to <b>Step 3</b> | Go to <b>Step 4</b> |
| 3 | <p>1. If the in-line connector for the seat belt pretensioner LF is damaged, the seat belt pretensioner must be replaced. Refer to <b><u>Seat Belt Retractor Pretensioner Replacement - Left Front.</u></b></p> <p>2. If the wiring harness side of the seat belt pretensioner connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                               | Go to <b>Step 9</b> | -                   |
| 4 | <p><b>IMPORTANT:</b><br/>If the scan tool displays multiple codes, diagnose the open code first.</p> <p>1. Connect the <b>J 38715-A</b> SIR Driver/Passenger Load Tool to the harness side of the seat belt pretensioner LF connector. See <b><u>Special Tools</u></b>. Use the PASSENGER INFLATOR connector.</p> <p>2. Turn ON the ignition, with the engine OFF.</p> <p>3. With the scan tool, request the SIR DTC display.</p> <p>Does the scan tool indicate that DTC B0064, B0065, or B0066 are current?</p> | Go to <b>Step 5</b> | Go to <b>Step 7</b> |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                     |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 5 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect and remove the <b>J 38715-A</b> .<br/>See <b><u>Special Tools</u></b>.</li> <li>3. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>4. Inspect the SDM connector for damage or corrosion that may cause a malfunction in the seat belt pretensioner LF high and/or low circuits. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p> | Go to <b>Step 9</b> | Go to <b>Step 6</b> |
| 6 | <ol style="list-style-type: none"> <li>1. If DTC B0064 is present, test the seat belt pretensioner LF for a short between the high and low circuits.</li> <li>2. If DTC B0065 is present, test the seat belt pretensioner LF high and low circuits for an open and for high resistance.</li> <li>3. If DTC B0066 is present, test the seat belt pretensioner LF high and low circuits for a short to ground and for a short to voltage.</li> <li>4. All the above conditions refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                                                                                              | Go to <b>Step 9</b> | Go to <b>Step 8</b> |
| 7 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Replace the seat belt pretensioner LF.<br/>Refer to <b><u>Seat Belt Retractor Pretensioner Replacement - Left Front</u></b>.</li> </ol> <p>Did you complete the replacement?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Go to <b>Step 9</b> | -                   |

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|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
| 8 | <ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li></ol> <p>Did you complete the replacement?</p>                                                               | Go to <b>Step 9</b> | -         |
| 9 | <ol style="list-style-type: none"><li>1. Connect all SIR components.</li><li>2. Turn ON the ignition, with the engine OFF.</li><li>3. Use the scan tool in order to clear the DTCs.</li><li>4. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li></ol> <p>Does the DTC reset?</p> | Go to <b>Step 2</b> | System OK |

#### DTC B0077, B0078, B0079, B0080, B0081, OR B0082

##### Circuit Description

The inflatable restraint side impact sensor (SIS) utilizes a unidirectional 2-wire circuit. The SIS modulates current on the interface to send ID, State of Health, and deployment commands to the inflatable restraint sensing and diagnostic module (SDM). The SDM serves as a power source and a ground for the SIS. When the ignition is turned on and input power from the SDM is first detected, the SIS responds by performing internal diagnostics and sending an ID to the SDM. The SDM considers the ID to be valid if the response time is less than 5 seconds. The SIS continually communicates status messages to the SDM, which determines if a fault is present in the SIS circuit. When a fault is detected, the SDM resets the SIS twice by removing and reapplying power to it. If the fault is still present, the SDM will set a diagnostic trouble code (DTC).

##### DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B0077 Driver Side Impact Sensor (SIS) Performance
- DTC B0078 Passenger Side Impact Sensor (SIS) Performance
- DTC B0079 Incorrect Driver Side Impact Sensor (SIS) Installed

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- DTC B0080 Discard Driver Side Impact Sensor (SIS)
- DTC B0081 Incorrect Passenger Side Impact Sensor (SIS) Installed
- DTC B0082 Discard Passenger Side Impact Sensor (SIS)

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

- DTC B0077 for the SIS - LF or B0078 for the SIS - RF will set when one of the following conditions occur:
  - A valid ID message is not received within 5 seconds of the SIS being powered up.
  - Status message is not received.
  - The SDM has reset the SIS twice without detecting a valid ID message.
- DTC B0079 for the SIS - LF or B0081 for the SIS - RF will set when one of the following conditions occur:
  - The SDM has received an ID message from the SIS which does not match the ID stored in the SDM memory.
  - The SDM has reset the SIS twice without detecting a correct ID message.
- DTC B0080 for the SIS - LF or B0082 for the SIS - RF will set when the SDM has received a NOK message from the SIS.

#### Action Taken When the DTC Sets

The SDM commands ON the AIR BAG warning lamp via class 2 serial data.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists and the scan tool Clear DTCs function is used.
- A history DTC will clear once 255 malfunction-free ignition cycles have occurred.

#### Diagnostic Aids

The following are conditions that may cause the malfunction:

- A short to ground or voltage in the SIS circuit
- High or low resistance in the SIS circuit

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- Improper SIS installed on vehicle

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and connectors may result in misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**7:** This step tests the SIS signal and SIS voltage circuits for an open or high resistance.

**8:** This step tests between the SIS signal and SIS voltage circuits for continuity.

**9:** This step tests the SIS signal and SIS voltage circuits for a short to voltage.

#### DTC B0077, B0078, B0079, B0080, B0081, or B0082

| Step                                                                                                                     | Action                                                                                                                                                                                                                                                           | Yes                  | No                                                                               |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u><br><b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                                                                                                                                  |                      |                                                                                  |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                           | Go to <b>Step 2</b>  | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                                                                        | 1. Install a scan tool.<br>2. Turn ON the ignition, with the engine OFF.<br>3. Use the scan tool to request SIR DTCs displayed.<br><br>Does the scan tool indicate that DTC B0079, B0080, B0081, or B0082 is current?                                            | Go to <b>Step 10</b> | Go to <b>Step 3</b>                                                              |
|                                                                                                                          | 1. Turn OFF the ignition.<br>2. If DTC B0077 is current, disconnect the inflatable restraint side impact sensor (SIS) - LF connector. If DTC B0078 is current, disconnect the SIS - RF connector. Refer to <b><u>Inflatable Restraint Side Impact Sensor</u></b> |                      |                                                                                  |

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| 3 | <p><b><u>Replacement.</u></b></p> <p>3. Inspect both the component and harness sides of the connector for damage or corrosion. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> in Wiring Systems.</p> <p>Does the connector exhibit any signs of damage or corrosion?</p>                                                                                                                                                                                                                           | Go to <b>Step 4</b>  | Go to <b>Step 5</b> |
| 4 | <p>1. If the component side of the SIS connector is damaged, the SIS must be replaced. Refer to <b><u>Inflatable Restraint Side Impact Sensor Replacement.</u></b></p> <p>2. If the harness side of the SIS connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                                                                                                                    | Go to <b>Step 11</b> | -                   |
| 5 | <p>1. Turn OFF the ignition.</p> <p>2. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>3. Inspect both the component and harness sides of the SDM connector for damage or corrosion. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> in Wiring Systems.</p> <p>Does the connector exhibit any signs of damage or corrosion?</p> | Go to <b>Step 6</b>  | Go to <b>Step 7</b> |
|   | <p>1. If the component side of the SDM connector is damaged, the SDM must be replaced. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p>                                                                                                                                                                                                                                                                                                                |                      |                     |

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                      |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| 6  | <p>2. If the harness side of the SDM connector is damaged, replace the harness side of the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                               | Go to <b>Step 11</b> | -                    |
| 7  | <p>1. If DTC B0077 is current, disconnect the SIS - LF connector. If DTC B0078 is current, disconnect the SIS - RF connector.</p> <p>2. Test both the SIS signal and SIS voltage circuits for an open or high resistance between the SDM connector and the SIS connector. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p> | Go to <b>Step 11</b> | Go to <b>Step 8</b>  |
| 8  | <p>Test for continuity between the SIS signal circuit and the SIS voltage circuit on the SDM connector. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                   | Go to <b>Step 11</b> | Go to <b>Step 9</b>  |
| 9  | <p>1. Turn ON the ignition, with the engine OFF.</p> <p>2. Test both SIS signal and SIS voltage circuits for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</p> <p>Did you find and correct the condition?</p>                                                                                                                                          | Go to <b>Step 11</b> | Go to <b>Step 10</b> |
| 10 | <p>1. Turn OFF the ignition.</p> <p>2. If DTC B0077, B0079, or B0080 was current, replace the SIS - LF. If DTC B0078, B0081, or B0082 was current, replace the SIS - RF. Refer to <b><u>Inflatable Restraint Side Impact Sensor Replacement</u></b>.</p> <p>Did you complete the replacement?</p>                                                                                                                       | Go to <b>Step 11</b> | -                    |
|    | <p>1. Reconnect all SIR components.</p>                                                                                                                                                                                                                                                                                                                                                                                 |                      |                      |

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|    |                                                                                                                                                                                                                                                                                      |                      |           |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------|
| 11 | <ol style="list-style-type: none"><li>2. Use the scan tool in order to clear the DTCs.</li><li>3. Operate the vehicle within the Conditions for Running the DTC as specified in the text.</li></ol> <p>Does the DTC reset?</p>                                                       | Go to <b>Step 12</b> | System OK |
| 12 | <ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li></ol> <p>Did you complete the replacement?</p>             | Go to <b>Step 13</b> | -         |
| 13 | <ol style="list-style-type: none"><li>1. Turn ON the ignition, with the engine OFF.</li><li>2. Use the scan tool in order to clear the DTCs.</li><li>3. Operate the vehicle within the Conditions for Running the DTC as specified in the text.</li></ol> <p>Does the DTC reset?</p> | Go to <b>Step 2</b>  | System OK |

## DTC B0092

### Circuit Description

When the ignition is turned ON, the inflatable restraint sensing and diagnostic module (SDM) performs tests to diagnose critical malfunctions within itself. When the SDM has completed the power-up mode, the SDM will establish communication with the passenger presence system (PPS). The PPS will respond by commanding both the PASSENGER AIR BAG ON/OFF indicators located in the rearview mirror ON for 5 seconds. The SDM will transmit a request message to the PPS to receive the PPS verification ID. The PPS will transmit the verification ID to the SDM and the SDM will compare the ID received to data stored in memory. The SDM will also set DTC B0092 to notify the driver that the PPS has a current malfunction present. When the SDM detects that the PPS has set any one of the following DTCs 023, 024, 063, 064, or 065, the SDM will disable the instrument panel (I/P) module deployment loop, set DTC B0092, and command the AIR BAG indicator ON.

### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B0092 Passenger Presence System Performance

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#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Action Taken When the DTC Sets

- The SDM disables the I/P module deployment loop.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.
- The PPS will turn ON the PASSENGER AIR BAG OFF indicator.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

#### Diagnostic Aids

DTC B0092 is an indication that the SDM has no or loss communication with the PPS or the PPS has internal faults/DTCs. The SDM will communicate to request the verification ID from the PPS for 5 seconds. If the SDM does not receive the verification ID from the PPS within 5 seconds the SDM will set the DTC as current, illuminate the AIR BAG indicator, and disable the I/P module deployment loop.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

- 2: This step checks the PPS for any current or history DTCs.
- 5: Test the occupant sensor serial data circuit for an open or high resistance.
- 6: Test the PPS ignition 1 voltage circuit for a short to ground, a high resistance, or an open.
- 7: Test the PPS ground circuit for an open or high resistance.
- 8: Test the PPS ground circuit for a short to voltage.

#### DTC B0092

| Step                                                                | Action                                                 | Yes | No                                     |
|---------------------------------------------------------------------|--------------------------------------------------------|-----|----------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u>                   |                                                        |     |                                        |
| <b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                        |     |                                        |
|                                                                     | Did you perform the Diagnostic System Check - Vehicle? |     | Go to <b>Diagnostic System Check -</b> |

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| 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 2</b>                                                                               | <b>Vehicle</b> in<br>Vehicle DTC<br>Information |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 2 | <ol style="list-style-type: none"> <li>1. Install a scan tool.</li> <li>2. Turn ON the ignition, with the engine OFF.</li> </ol> <p><b>IMPORTANT:</b><br/>If the passenger presence system (PPS) has any current or history DTCs stored, you must address the PPS DTCs before continuing with this diagnostic table.</p> <ol style="list-style-type: none"> <li>3. Use the scan tool to request the PPS DTCs. Refer to <b><u>Passenger Presence System Flash Code Procedures</u></b>.</li> </ol> <p>Does the PPS flash any current or history DTCs?</p> | Go to <b><u>Diagnostic Trouble Code (DTC) List - Vehicle</u></b> in<br>Vehicle DTC<br>Information | Go to <b>Step 3</b>                             |
| 3 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the PPS module connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>3. Inspect the PPS module connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                      | Go to <b>Step 10</b>                                                                              | Go to <b>Step 4</b>                             |
| 4 | <ol style="list-style-type: none"> <li>1. Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>2. Inspect the SDM connector for damage or corrosion. Refer to <b><u>Testing for</u></b></li> </ol>                                                                                                                                                                                     |                                                                                                   |                                                 |

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|          |                                                                                                                                                                                                                                                                                                                           |                      |                     |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
|          | <b><u>Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> in Wiring Systems.</b>                                                                                                                                                                                                                |                      |                     |
|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                   | Go to <b>Step 10</b> | Go to <b>Step 5</b> |
| <b>5</b> | Test the occupant sensor serial data circuit for an open or high resistance between the PPS and SDM connector. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.<br>Did you find and correct the condition?                                                                      | Go to <b>Step 10</b> | Go to <b>Step 6</b> |
| <b>6</b> | Test the PPS ignition 1 voltage circuit for one of the following: <ul style="list-style-type: none"> <li>• An open</li> <li>• High resistance</li> <li>• Short to ground</li> </ul> Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.<br>Did you find and correct the condition? | Go to <b>Step 10</b> | Go to <b>Step 7</b> |
| <b>7</b> | Test the PPS ground circuit for an open or high resistance. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.<br>Did you find and correct the condition?                                                                                                                         | Go to <b>Step 10</b> | Go to <b>Step 8</b> |
| <b>8</b> | 1. Turn ON the ignition, with the engine OFF.<br>2. Test the PPS ground circuit for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.<br>Did you find and correct the condition?                                                                             | Go to <b>Step 10</b> | Go to <b>Step 9</b> |
|          | 1. Turn OFF the ignition.<br><br><b>IMPORTANT:</b><br><b>The PPS is a calibrated system. The PPS must be rezero after replacement.</b>                                                                                                                                                                                    |                      |                     |

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |           |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------|
| 9  | <ol style="list-style-type: none"> <li>Replace the PPS. The PPS is only serviceable as a PPS and seat bottom foam assembly. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> </ol>                                                                                                                                                                                                                                                                                 |                      |           |
|    | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Go to <b>Step 10</b> | -         |
| 10 | <ol style="list-style-type: none"> <li>Reconnect all SIR and PPS system components.</li> <li>Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>Rezero the PPS. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol> |                      |           |
|    | Does the DTC reset?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Go to <b>Step 2</b>  | System OK |

#### DTC B0098

##### Circuit Description

When the ignition is turned ON, the inflatable restraint sensing and diagnostic module (SDM) performs tests to diagnose critical malfunctions within itself. When the SDM has completed the power-up mode, the SDM will establish communication with the passenger presence system (PPS). The PPS will respond by commanding both of the PASSENGER AIR BAG ON/OFF indicators ON for 5 seconds. The SDM will then transmit a request message to the PPS to receive the PPS verification ID. The PPS will transmit the verification ID to the SDM, and the SDM will compare the ID received to data stored in memory. If the data stored in memory does not match the information transmitted by the PPS, the SDM will set DTC B0098 or B0092 and command the AIR BAG indicator ON.

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#### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B0098 Passenger Presence System Configuration Error

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

- The PPS has lost communications with the SDM.
- The PPS verification ID does not match the ID that is stored in the SDM.

#### Action Taken When the DTC Sets

- The SDM disables the instrument panel (I/P) module deployment loop.
- The SDM commands the AIR BAG indicator ON via class 2 serial data.
- The PPS will turn ON the PASSENGER AIR BAG OFF indicator.

#### Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction free ignition cycles have occurred.

#### Diagnostic Aids

DTC B0098 and/or DTC 064 is an indication that the SDM has received an incorrect PPS verification ID. The SDM will continue to request the verification ID from the PPS for 5 seconds. If the SDM does not receive the correct verification ID from the PPS within 5 seconds, the SDM will set DTC B0098 as current, illuminate the AIR BAG indicator. If either the SDM or PPS were replaced, verify that the correct part numbers were used for the vehicle application.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

- 3: Inspect the PPS to verify the correct part number was installed in the vehicle.
- 5: This test checks the PPS data communications circuit for an open or high resistance.

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## DTC B0098

| Step                                                                                                                     | Action                                                                                                                                                                                                                                                                                                                                                   | Yes                 | No                                                                        |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u><br><b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                                                                                                                                                                                                                          |                     |                                                                           |
| 1                                                                                                                        | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                   | Go to <b>Step 2</b> | Go to <b>Diagnostic System Check - Vehicle</b> in Vehicle DTC Information |
| 2                                                                                                                        | Was the passenger presence system (PPS) replaced?                                                                                                                                                                                                                                                                                                        | Go to <b>Step 3</b> | Go to <b>Step 4</b>                                                       |
| 3                                                                                                                        | Inspect the PPS to verify that the correct part number was installed in the vehicle.<br>Was the correct PPS part number installed in the vehicle?                                                                                                                                                                                                        | Go to <b>Step 4</b> | Go to <b>Step 6</b>                                                       |
| 4                                                                                                                        | Was the inflatable restraint sensing and diagnostic module (SDM) replaced?                                                                                                                                                                                                                                                                               | Go to <b>Step 5</b> | Go to <b>Step 6</b>                                                       |
| 5                                                                                                                        | Inspect the SDM to ensure that the correct part number was installed in the vehicle.<br>Was the correct SDM part number installed in the vehicle?                                                                                                                                                                                                        | Go to <b>Step 6</b> | Go to <b>Step 8</b>                                                       |
| 6                                                                                                                        | 1. Turn OFF the ignition.<br><br><b>IMPORTANT:</b><br><b>The PPS is a calibrated system. The PPS must be rezero after replacement.</b><br><br>2. Replace the PPS. The PPS is only serviceable as a PPS and seat bottom foam assembly. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup, and programming. | Go to <b>Step 7</b> | -                                                                         |
|                                                                                                                          | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                        |                     |                                                                           |
|                                                                                                                          | 1. Reconnect all SIR and PPS components.<br>2. Verify that all components, connectors, and connector position assurances (CPAs) are                                                                                                                                                                                                                      |                     |                                                                           |

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|   |                                                                                                                                                                                                                                                                                                                                                    |                     |           |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------|
| 7 | <p>properly mounted.</p> <ol style="list-style-type: none"><li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li><li>4. Operate the vehicle within the Conditions for Running the DTC as specified in the text.</li></ol>                                                                                                           |                     |           |
|   | Does the DTC reset?                                                                                                                                                                                                                                                                                                                                | Go to <b>Step 8</b> | System OK |
| 8 | <ol style="list-style-type: none"><li>1. Turn OFF the ignition.</li><li>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li></ol>                                                                                                                    |                     |           |
|   | Did you complete the replacement?                                                                                                                                                                                                                                                                                                                  | Go to <b>Step 9</b> | -         |
| 9 | <ol style="list-style-type: none"><li>1. Reconnect all SIR and PPS components.</li><li>2. Verify that all components, connectors, and CPAs are properly mounted.</li><li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li><li>4. Operate the vehicle within the Conditions for Running the DTC as specified in the text.</li></ol> |                     |           |
|   | Does the DTC reset?                                                                                                                                                                                                                                                                                                                                | Go to <b>Step 2</b> | System OK |

**DTC B0100, B0101, B0102, B0103, B0104, OR B0105****Circuit Description**

The inflatable restraint front end sensor utilizes a unidirectional 2-wire circuit. The front end sensor modulates current on the interface to send ID, State of Health, and deployment commands to the inflatable restraint sensing and diagnostic module (SDM). The SDM serves as a power source and a ground for the front end sensor. When the ignition is turned on and input power from the SDM is first detected, the front end sensor responds by performing internal diagnostics and sending an ID to the SDM. The SDM considers the ID to be valid if the response time is less than 5 seconds. The front end sensor continually communicates status messages to the SDM, which determines if a fault is present in the front end sensor circuit. When a fault is detected, the SDM resets the front end sensor twice by removing and reapplying power. If the fault is still present,

the SDM will set a diagnostic trouble code (DTC).

**DTC Descriptors**

This diagnostic procedure supports the following DTCs:

- DTC B0100 Front End Sensor 1 Performance
- DTC B0101 Discard Front End Sensor 1
- DTC B0102 Incorrect Front End Sensor 1 Installed
- DTC B0103 Front End Sensor 2 Performance
- DTC B0104 Discard Front End Sensor 2
- DTC B0105 Incorrect Front End Sensor 2 Installed

**Conditions for Running the DTC**

Ignition 1 voltage is within the normal operating voltage range.

**Conditions for Setting the DTC**

- DTC B0100 or B0103 will set when one of the following conditions occur:
  - A valid ID message is not received within 5 seconds of the front end sensor being powered up.
  - Status message is not received.
  - The SDM has failed twice to reset the front end sensor.
- DTC B0101 or B0104 will set when the SDM has received 4 consecutive NOK (Not OK) messages from the front end sensor.
- DTC B0102 or B0105 will set when one of the following conditions occur:
  - The SDM has received an ID message from the front end sensor which does not match the ID stored in the SDM memory.
  - When 2 front end sensor resets are attempted without the correct identification being detected by the SDM.

**Action Taken When the DTC Sets**

The SDM commands the AIR BAG indicator ON via class 2 serial data.

**Conditions for Clearing the DTC**

- The condition responsible for setting the DTC no longer exists.

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- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 255 malfunction-free ignition cycles have occurred.

#### Diagnostic Aids

The following are conditions that may cause the malfunction:

- A short to ground or voltage in the front end sensor circuits
- High or low resistance in the front end sensor circuits
- Improper front end sensors installed on vehicle

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and connectors may result in misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table:

- 2:** Tests the communication status of both front end sensors.
- 6:** Tests for a short to ground, a high resistance, or an open in the front end sensor signal circuit.
- 7:** Tests for a short to ground, a high resistance, or an open in the front end sensor low reference circuit.
- 8:** Tests for a short to voltage in the front end sensor signal and low reference circuits.

#### DTC B0100, B0101, B0102, B0103, B0104, or B0105

| Step                                                                | Action                                                 | Yes                 | No                                                                               |
|---------------------------------------------------------------------|--------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u>                   |                                                        |                     |                                                                                  |
| <b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                        |                     |                                                                                  |
| 1                                                                   | Did you perform the Diagnostic System Check - Vehicle? | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
|                                                                     | 1. Install a scan tool.                                |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| 2 | <ol style="list-style-type: none"> <li>Turn ON the ignition, with the engine OFF.</li> <li>With a scan tool, request the SIR DTC display.</li> </ol> <p>Does the scan tool indicate that either DTC B0101, B0102, B0104, or B0105 is current?</p>                                                                                                                                                                                                                                                                      | Go to <b>Step 12</b> | Go to <b>Step 3</b> |
| 3 | <ol style="list-style-type: none"> <li>Turn OFF the ignition.</li> <li>If DTC B0100 is current, disconnect the left front end sensor connector. If DTC B0103 is current, disconnect the right front end sensor connector. Refer to <b><u>Inflatable Restraint Front End Sensor Replacement</u></b>.</li> <li>Inspect both front end sensor and harness connector terminals for damage or corrosion.</li> </ol> <p>Do the front end sensor terminals or harness connector exhibit any signs of damage or corrosion?</p> | Go to <b>Step 4</b>  | Go to <b>Step 5</b> |
| 4 | <ol style="list-style-type: none"> <li>If the front end sensor terminals are damaged, replace the front end sensor. Refer to <b><u>Inflatable Restraint Front End Sensor Replacement</u></b>.</li> <li>If the front end sensor harness connector is damaged, replace the connector. Refer to <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you complete the replacement?</p>                                                                                                                    | Go to <b>Step 13</b> | -                   |
| 5 | <ol style="list-style-type: none"> <li>Disconnect the inflatable restraint sensing and diagnostic module (SDM) connector. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>Inspect the SDM connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol>                                                      |                      |                     |

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|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 13</b> | Go to <b>Step 6</b> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| <b>6</b> | <ol style="list-style-type: none"> <li>1. If DTC B0100 is current, test the left front end sensor signal circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> <li>2. If DTC B0103 is current, test the right front end sensor signal circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol>                                  |                      |                     |
|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 13</b> | Go to <b>Step 7</b> |
| <b>7</b> | <ol style="list-style-type: none"> <li>1. If DTC B0100 is current, test the left front end sensor low reference circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> <li>2. If DTC B0103 is current, test the right front end sensor low reference circuit for a short to ground, a high resistance, or an open. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol>                    |                      |                     |
|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 13</b> | Go to <b>Step 8</b> |
| <b>8</b> | <ol style="list-style-type: none"> <li>1. Turn ON the ignition, with the engine OFF.</li> <li>2. If DTC B0100 is current, test the left front end sensor signal and low reference circuits for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> <li>3. If DTC B0103 is current, test the right front end sensor signal and low reference circuits for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> |                      |                     |
|          | Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 13</b> | Go to <b>Step 9</b> |

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|    |                                                                                                                                                                                                                                                                                                                                  |                      |           |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------|
| 9  | For DTC B0100 replace the left front end sensor.<br>For DTC B0103 replace the right front end sensor.<br>Refer to <b><u>Inflatable Restraint Front End Sensor Replacement</u></b> .<br>Did you complete the replacement?                                                                                                         | Go to <b>Step 10</b> | -         |
| 10 | 1. Reconnect all SIR system components.<br>2. Use the scan tool in order to clear the DTCs.<br>3. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.<br><br>Does the DTC reset?                                                                                                  | Go to <b>Step 11</b> | System OK |
| 11 | 1. Turn OFF the ignition.<br>2. Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br><br>Did you complete the replacement?                                                                                                              | Go to <b>Step 13</b> | -         |
| 12 | For DTC B0101 and B0102 replace the left front end sensor. For DTC B0104 and B0105 replace the right front end sensor. Refer to <b><u>Inflatable Restraint Front End Sensor Replacement</u></b> .<br>Did you complete the replacement?                                                                                           | Go to <b>Step 13</b> | -         |
| 13 | 1. Reconnect all SIR system components.<br>2. Verify that all components, connectors and connector position assurances (CPAs) are properly mounted.<br>3. Use the scan tool in order to clear the DTCs.<br>4. Operate the vehicle within the Conditions for Running the DTC as specified in the text.<br><br>Does the DTC reset? | Go to <b>Step 2</b>  | System OK |

#### DTC B1001

#### Circuit Description

When the ignition is turned ON the inflatable restraint sensing and diagnostic module (SDM)

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compares the restraint ID that is stored in the SDM to the restraints ID that is stored in the body control module (BCM). The restraints ID that is being compared to contains the last 4 digits of SDM part number. The SDM receives these messages and compares them to information stored in memory, this DTC is set when the SDM receives a restraints ID over the class 2 communication circuit from the BCM that is different from the ID that is stored in the SDM memory.

#### DTC Descriptor

This diagnostic procedure supports the following DTC:

#### DTC B1001 Option Configuration Error

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

The restraints ID that is stored in the SDM does not match the restraints ID that is stored in the BCM or the VIN information that is stored in the SDM does not match the VIN information that is stored in the BCM.

#### Action Taken When the DTC Sets

- The SDM commands the AIR BAG indicator ON via class 2 serial data.
- The SDM disables all deployment loops.

#### Conditions for Clearing the DTC

The restraints ID that is stored in the SDM matches the restraints ID that is stored in the BCM and the VIN information that is stored in the SDM matches the VIN information that is stored in the BCM.

#### Diagnostic Aids

DTC B1001 is an indication that the restraints IDs stored in both the BCM and SDM do not match or that the VINs stored in both the BCM and SDM do not match. If either the BCM and/or powertrain control module (PCM) were replaced, the replacement modules need to be reprogrammed for proper operation.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

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2: This step tests to see if the correct VIN is programmed in the PCM.

4: This step tests to see if the BCM has been replaced.

5: This step tests to see if the correct VIN is programmed in the BCM.

### DTC B1001

| Step | Action                                                                                                                                                                                                                                                                                                                                                         | Yes                 | No                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| 1    | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                         | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2    | <ol style="list-style-type: none"> <li>1. Install a scan tool.</li> <li>2. With a scan tool, verify that the powertrain control module (PCM) is programmed with the correct VIN by comparing the VIN that is stored in the PCM to the VIN plate of the vehicle.</li> </ol> <p>Does the scan tool indicate that the PCM is programmed with the correct VIN?</p> | Go to <b>Step 4</b> | Go to <b>Step 3</b>                                                              |
| 3    | Use a scan tool and/or the techline machine to program the correct VIN into the PCM.<br>Did you complete the action?                                                                                                                                                                                                                                           | Go to <b>Step 9</b> | -                                                                                |
| 4    | Was the body control module (BCM) replaced?                                                                                                                                                                                                                                                                                                                    | Go to <b>Step 6</b> | Go to <b>Step 5</b>                                                              |
| 5    | <p>With a scan tool, verify that the BCM is programmed with the correct VIN by comparing the VIN that is stored in the BCM to the VIN that is stored in the PCM.</p> <p>Does the scan tool indicate that the BCM is programmed with the correct VIN?</p>                                                                                                       | Go to <b>Step 7</b> | Go to <b>Step 6</b>                                                              |
| 6    | <p>Follow the instructions on the scan tool under BCM SPECIAL FUNCTIONS to properly reprogram the BCM and setup the inflatable restraint sensing and diagnostic module (SDM) part number. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</p> <p>Did you complete the action?</p>    | Go to <b>Step 7</b> | -                                                                                |

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|   |                                                                                                                                                                                                                                                             |                     |                     |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 7 | <ol style="list-style-type: none"> <li>1. Reconnect all SIR components.</li> <li>2. Use the scan tool in order to clear the DTCs.</li> <li>3. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol> |                     |                     |
|   | Does the DTC reset?                                                                                                                                                                                                                                         | Go to <b>Step 8</b> | Go to <b>Step 9</b> |
| 8 | Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.<br>Did you complete the replacement?                                                                             | Go to <b>Step 9</b> | -                   |
| 9 | <ol style="list-style-type: none"> <li>1. Reconnect all SIR components.</li> <li>2. Use the scan tool in order to clear the DTCs.</li> <li>3. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.</li> </ol> |                     |                     |
|   | Does the DTC reset?                                                                                                                                                                                                                                         | Go to <b>Step 2</b> | System OK           |

## DTC U1241

### Circuit Description

The passenger presence system (PPS) monitors itself for faults and will set flash DTCs if a fault is detected. The PPS communicates with the inflatable restraint sensing and diagnostic module (SDM) via non-class 2 communications. When the SDM receives input from the PPS that a PPS fault has occurred, the SDM will request the instrument panel cluster (IPC) to turn the AIR BAG indicator located on the IPC ON. To determine what DTCs have been set by the PPS, the scan tool is used to command the SDM to request the PPS to flash the DTCs using the PASSENGER AIR BAG ON/OFF indicators located on the rearview mirror. The scan tool sends a string of commands to the SDM that allows the SDM to communicate with the PPS module and initiate the flashing of the DTCs. When the scan tool has completed sending the commands, the PPS will begin flashing any current or history DTCs that the system has stored. When the SDM no longer receives commands from the scan tool, the SDM mistakes this as a communication fault and sets DTC U1241. DTC U1241 will set when the scan tool is used to flash DTCs from the PPS or after the PPS has been rezeroed. DTC U1241 does not indicate a system malfunction and will not cause any warning indicators to illuminate. When DTC U1241 sets, cycle the ignition and use the

scan tool to clear the code, no further diagnosis is necessary. For more detailed description and operation concerning the PPS, refer to **SIR System Description and Operation**. For more detailed information concerning PPS flash code and rezeroing procedures, refer to **Passenger Presence System Flash Code Procedures** and **Passenger Presence System Rezeroing Procedure**.

#### DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC U1241 Lost Communication With Scan Tool

#### Conditions for Running the DTC

Ignition 1 voltage is within the normal operating voltage range.

#### Conditions for Setting the DTC

DTC U1241 will set when the scan tool is used to flash DTCs from the PPS or after the PPS has been rezeroed.

#### Conditions for Clearing the DTC

You issue a scan tool CLEAR DTCs command.

#### Diagnostic Aids

DTC U1241 does not indicate a system malfunction and will not cause any warning indicators to illuminate. When DTC U1241 sets, cycle the ignition and use the scan tool to clear the code. No further diagnosis is necessary.

### PASSENGER PRESENCE SYSTEM REZEROING PROCEDURE

#### Introduction

The inflatable restraints passenger presence system (PPS) is a calibrated system that requires rezeroing anytime the seat cushion trim attachments have been removed or the PPS has been replaced. The procedures below are designed to assist in the rezeroing of the PPS. Before you start, read these procedures carefully and completely. For further information regarding the PPS refer to **SIR System Description and Operation**.

**IMPORTANT:** The following procedures must be followed:

1. Read this procedure carefully and completely.
2. The PPS will not function properly if the PPS rezeroing procedure is not performed.
3. Perform the **Diagnostic System Check - Vehicle** in Vehicle DTC Information, after successfully completing the rezeroing procedure to ensure the system is functioning properly.

#### Passenger Presence System (PPS) Rezeroing Procedure

**IMPORTANT:** Before rezeroing the PPS, the front passenger seat must be completely empty of all items. The presence of any items on the front passenger seat will affect the calibration and operation of the PPS.

**IMPORTANT:** When rezeroing the PPS, the instrument panel cluster (IPC) and dash lights will begin dimming ON and FF. This is normal operation during the rezeroing procedure and does not indicate additional system faults.

1. Empty the front outboard passenger seat.
2. Verify that all supplemental inflatable restraint (SIR) and PPS components, connectors, and connector position assurances (CPAs) are properly connected and mounted.
3. Install a scan tool.
4. Turn ON the ignition, with the engine OFF.

**IMPORTANT:** All SIR and PPS DTCs must be cleared before rezeroing the PPS. The presence of current or history DTCs will prevent the PPS from rezeroing and may set additional DTCs.

5. Use the scan tool in order to clear the SIR and PPS DTCs.
6. With a scan tool, request the PPS rezeroing procedure.
7. Initiate the PPS rezeroing procedure. The PPS will illuminate both PASSENGER AIR BAG ON and OFF indicators located on the rearview mirror until the rezeroing procedure has been completed.
  - When the rezeroing procedure has been successfully completed, the PPS will display the current system status at the rearview mirror indicator.
  - If the rezeroing procedure was unsuccessful, both PASSENGER AIR BAG ON and OFF indicators located on the rearview mirror will alternate from no illumination to

full illumination in 1 second intervals for 5 seconds. The PPS will treat an unsuccessful rezero attempt as a system fault.

8. If the rezeroing procedure was unsuccessful, repeat this procedure. Due to the communication status between the sensing and diagnostic module (SDM) and the PPS module, this procedure may have to be repeated until a successful rezero attempt has been achieved.
9. After the PPS has been successfully rezeroed, perform the **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

## SYMPTOMS - SIR

**IMPORTANT: Complete the following steps before using the symptom tables:**

1. Perform **Diagnostic System Check - Vehicle** in Vehicle DTC Information, before using the symptom tables in order to verify that all of the following are true:
  - There are no DTCs set.
  - The inflatable restraint sensing and diagnostic module (SDM) can communicate via the serial data link.
2. Review the SIR system description and operation in order to familiarize yourself with the system functions. Refer to **SIR System Description and Operation**.

## Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the SIR system. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

## Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

## Symptom List

- Refer to **Air Bag Indicator Circuit Malfunction** in order to diagnose the symptom.
- Refer to **Passenger Presence System Indicator Circuit Malfunction** in order to diagnose the symptom.

## AIR BAG INDICATOR CIRCUIT MALFUNCTION

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#### Circuit Description

The ignition switch supplies ignition voltage to the inflatable restraint sensing and diagnostic module (SDM) using the SIR Fuse. The ignition switch also supplies ignition 1 voltage to the instrument panel cluster (IPC). The AIR BAG warning indicator is controlled by the SDM via class 2 serial data. When the ignition switch is first turned ON, the SDM responds by performing tests on the SIR system and commanding the AIR BAG warning indicator OFF, after it has flashed 7 times, if no trouble codes (DTCs) are found.

#### Diagnostic Aids

If battery voltage is outside of the normal operating voltage range, 9-16 volts, the AIR BAG warning indicator will come ON solid with no DTCs set.

#### Air Bag Indicator Circuit Malfunction

| Step                                                                | Action                                                                                                                                                                                                                                                                                                                                                                                                           | Value(s) | Yes                 | No                                                                               |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|----------------------------------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u>                   |                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                     |                                                                                  |
| <b>Connector End View Reference:</b> <u>SIR Connector End Views</u> |                                                                                                                                                                                                                                                                                                                                                                                                                  |          |                     |                                                                                  |
| 1                                                                   | Did you perform the Diagnostic System Check - Vehicle?                                                                                                                                                                                                                                                                                                                                                           | -        | Go to <b>Step 2</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
| 2                                                                   | <ol style="list-style-type: none"><li>Using a scan tool, establish communication with the inflatable restraint sensing and diagnostic module (SDM).</li><li>Use the scan tool to request the SIR data list display.</li><li>With a scan tool, observe the ignition voltage parameter in the SIR data list.</li></ol> <p>Does the scan tool indicate that the ignition voltage is within the specified range?</p> | 9-16 V   | Go to <b>Step 3</b> | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information |
|                                                                     | <ol style="list-style-type: none"><li>Using the scan tool, pull up Special</li></ol>                                                                                                                                                                                                                                                                                                                             |          |                     |                                                                                  |

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|   |                                                                                                                                                                                                                                                                                                                                                    |   |                                                                                  |   |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------|---|
| 3 | <p>Functions in Instrument Panel Cluster.</p> <p>2. Go to Displays Test for Instrument Cluster in Output Control.</p> <p>3. In the Display Test mode you can turn ON or OFF the instrument panel indicators.</p> <p>4. All indicators will turn ON when commanded ON.</p> <p>Does scan tool command the AIR BAG Warning Indicator ON then OFF?</p> | - |                                                                                  |   |
| 4 | <p>Replace the SDM. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the replacement?</p>                                                                                                                                                                | - | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information | - |
| 5 | <p>The AIR BAG warning indicator is not serviceable separately. The instrument panel cluster (IPC) must be serviced as a complete unit. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming. Did you complete the repair?</p>                                                 | - | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information | - |

## PASSENGER PRESENCE SYSTEM INDICATOR CIRCUIT MALFUNCTION

### Circuit Description

The PASSENGER AIR BAG ON/OFF indicators located on the rearview mirror are used to notify the driver when the passenger presence system (PPS) has enabled or disabled the instrument panel (I/P) inflator module. When the ignition is turned ON, the PPS module is supplied with voltage and commands both PASSENGER AIR BAG ON/OFF indicators ON for 5 seconds. Then the PPS module conducts tests on the PPS components and circuits while both PASSENGER AIR BAG ON/OFF indicators are ON. If no malfunctions are detected, the PPS module will turn the PASSENGER AIR BAG indicator ON or OFF, depending on the status of

the PPS. If a malfunction is detected, the PPS module will store a DTC, default the PPS to the OFF state, and communicate with the sensing and diagnostic module (SDM) that a DTC has been set. The SDM will request the instrument panel cluster (IPC) to turn the AIR BAG indicator ON to notify the driver of a PPS malfunction.

#### Diagnostic Aids

The following are possible causes of the malfunction:

- A short in the passenger air bag OFF indicator control circuit
- A short in the passenger air bag ON indicator control circuit
- An open or high resistance in the passenger air bag OFF indicator control circuit
- An open or high resistance in the passenger air bag ON indicator control circuit

Thoroughly inspect the wiring and the connectors. An incomplete inspection of the wiring and the connectors may result in a misdiagnosis, causing a part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**4:** Test the inside rearview mirror ignition 1 voltage circuit for a short to ground, a high resistance, or an open.

**5:** This step tests the passenger air bag OFF indicator control circuit for a short to ground, a high resistance, or an open.

**6:** This step tests the passenger air bag ON indicator control circuit for a short to ground, a high resistance, or an open.

**7:** This step tests the PPS module for proper operation.

#### Passenger Presence System Indicator Circuit Malfunction

| Step                                                                                                                                                                                                    | Action                                                 | Yes | No                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----|----------------------------------------------------------|
| <b>Schematic Reference:</b> <u>SIR Schematics</u><br><b>Connector End View Reference:</b> <u>SIR Connector End Views</u> in SIR or <u>Stationary Windows Connector End Views</u> in Stationary Windows. |                                                        |     |                                                          |
| 1                                                                                                                                                                                                       | Did you perform the Diagnostic System Check - Vehicle? |     | Go to <b><u>Diagnostic System Check - Vehicle</u></b> in |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Go to <b>Step 2</b>  | Vehicle DTC Information |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------|
| 2 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Disconnect the passenger presence system (PPS) module connector located under the passenger seat. Refer to <b><u>Control Module References</u></b> in Computer/Integrating Systems for replacement, setup, and programming.</li> <li>3. Inspect the PPS module connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p> | Go to <b>Step 10</b> | Go to <b>Step 3</b>     |
| 3 | <ol style="list-style-type: none"> <li>1. Disconnect the inside rearview mirror connector located at the back of the mirror.</li> <li>2. Inspect the inside rearview mirror connector for corrosion or damage. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                                                                                                                                                 | Go to <b>Step 10</b> | Go to <b>Step 4</b>     |
| 4 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Test the inside rearview mirror ignition 1 voltage circuit for one of the following: <ul style="list-style-type: none"> <li>• An open</li> <li>• High resistance</li> <li>• Short to ground</li> </ul> </li> <li>3. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> in Wiring Systems.</li> </ol> <p>Did you find and correct the condition?</p>                                                                                                                           | Go to <b>Step 10</b> | Go to <b>Step 5</b>     |
|   | Test the PASSENGER AIR BAG OFF indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                         |

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|   |                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| 5 | <p>control circuit between the rearview mirror and the PPS for one of the following:</p> <ul style="list-style-type: none"> <li>• An open</li> <li>• High resistance</li> <li>• Short to voltage</li> </ul> <p>Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br/>Did you find and correct the condition?</p>                                                            | Go to <b>Step 10</b> | Go to <b>Step 6</b> |
| 6 | <p>Test the PASSENGER AIR BAG ON indicator control circuit between the rearview mirror and the PPS for one of the following:</p> <ul style="list-style-type: none"> <li>• An open</li> <li>• High resistance</li> <li>• Short to voltage</li> </ul> <p>Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems.<br/>Did you find and correct the condition?</p>                    | Go to <b>Step 10</b> | Go to <b>Step 7</b> |
| 7 | <ol style="list-style-type: none"> <li>1. Turn OFF the ignition.</li> <li>2. Connect a test lamp between the ignition 1 voltage circuit and the passenger air bag OFF indicator control circuit at the inside rearview mirror connector terminals.</li> <li>3. Empty the front passenger seat.</li> <li>4. Turn ON the ignition, with the engine OFF.</li> </ol> <p>Does the test lamp illuminate?</p> | Go to <b>Step 8</b>  | Go to <b>Step 9</b> |
| 8 | <p>Replace the rearview mirror. Refer to <b>Rearview Mirror Replacement</b> in Stationary Windows.<br/>Did you complete the replacement?</p>                                                                                                                                                                                                                                                           | Go to <b>Step 10</b> | -                   |
|   | <p>Replace the PPS. Refer to <b>Control Module References</b> in Computer/Integrating Systems for</p>                                                                                                                                                                                                                                                                                                  |                      |                     |

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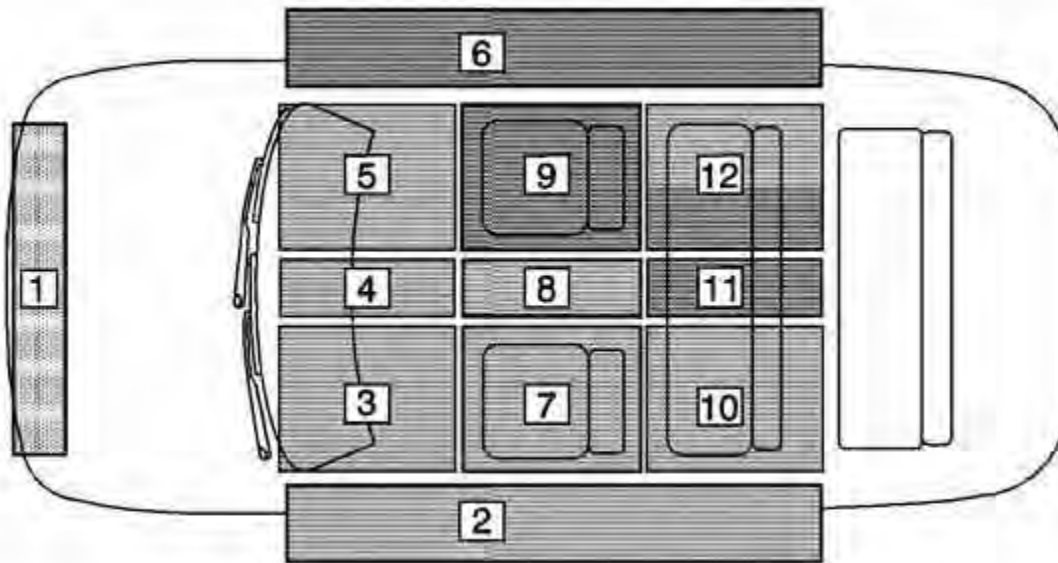
### 2006 RESTRAINTS SIR - Rendezvous

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| 9  | replacement, setup, and programming.<br>Did you complete the replacement?                                                                                                                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 10</b> | -                   |
| 10 | <ol style="list-style-type: none"> <li>1. Reconnect all PPS and rearview mirror system components.</li> <li>2. Verify that all components, connectors, and connector position assurances (CPAs) are properly mounted.</li> <li>3. Use the scan tool in order to clear the SIR and PPS DTCs.</li> <li>4. Rezero the PPS. Refer to <b><u>Passenger Presence System Programming and Setup</u></b> in Programming and Setup.</li> <li>5. Operate the system in order to verify the repair.</li> </ol> |                      |                     |
|    | Did you correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | System OK            | Go to <b>Step 2</b> |

#### SIR DISABLING AND ENABLING ZONES

**IMPORTANT:** Refer to **SIR Service Precautions** before disabling the SIR system.

The supplemental inflatable restraint (SIR) system has been divided into Disabling and Enabling Zones. When performing service on or near SIR components or SIR wiring, it may be necessary to disable the SIR components in that zone. It may be necessary to disable more than one zone depending on the location of other SIR components and the area being serviced. Refer to **SIR Zone Identification Views**. Refer to the illustration below, to identify the specific zone or zones in which service will be performed. After identifying the zone or zones, proceed to the disabling and enabling procedures for that particular zone or zones.



**Fig. 9: SIR Disabling and Enabling Zones**  
 Courtesy of GENERAL MOTORS CORP.

#### SIR Disabling and Enabling Zones

| Zone | Description                                                                                                                             |
|------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Left and right front end sensor-Refer to <b><u>SIR Disabling and Enabling Zone 1.</u></b>                                               |
| 2    | Driver/left side impact sensor (SIS) and seat belt retractor pretensioner-Refer to <b><u>SIR Disabling and Enabling Zone 2.</u></b>     |
| 3    | Inflatable restraint steering wheel module and coil-Refer to <b><u>SIR Disabling and Enabling Zone 3.</u></b>                           |
| 4    | Not Used                                                                                                                                |
| 5    | Inflatable restraint instrument panel (I/P) module-Refer to <b><u>SIR Disabling and Enabling Zone 5.</u></b>                            |
| 6    | Passenger/right side impact sensor (SIS) and seat belt retractor pretensioner-Refer to <b><u>SIR Disabling and Enabling Zone 6.</u></b> |
| 7    | Driver seat with LF side impact module-Refer to <b><u>SIR Disabling and Enabling Zone 7.</u></b>                                        |
| 8    | Not Used                                                                                                                                |
|      | Passenger seat with RF side impact module,                                                                                              |

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|       |                                                                                                                                                              |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9     | passenger presence system (PPS), and inflatable restraint sensing and diagnostic module (SDM)-<br>Refer to <b><u>SIR Disabling and Enabling Zone 9</u></b> . |
| 10-12 | Not Used                                                                                                                                                     |

## REPAIR INSTRUCTIONS

### SIR SERVICE PRECAUTIONS

**CAUTION:** When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Refer to **SIR Disabling and Enabling Zones**. Failure to observe the correct procedure could cause deployment of the SIR components, personal injury, or unnecessary SIR system repairs.

#### General Service Instructions

The following are general service instructions which must be followed in order to properly repair the vehicle and return it to its original integrity:

- Do not expose inflator modules to temperatures above 65°C (150°F).
- Verify the correct replacement part number. Do not substitute a component from a different vehicle.
- Use only original GM replacement parts available from your authorized GM dealer. Do not use salvaged parts for repairs to the supplemental inflatable restraint (SIR) system.

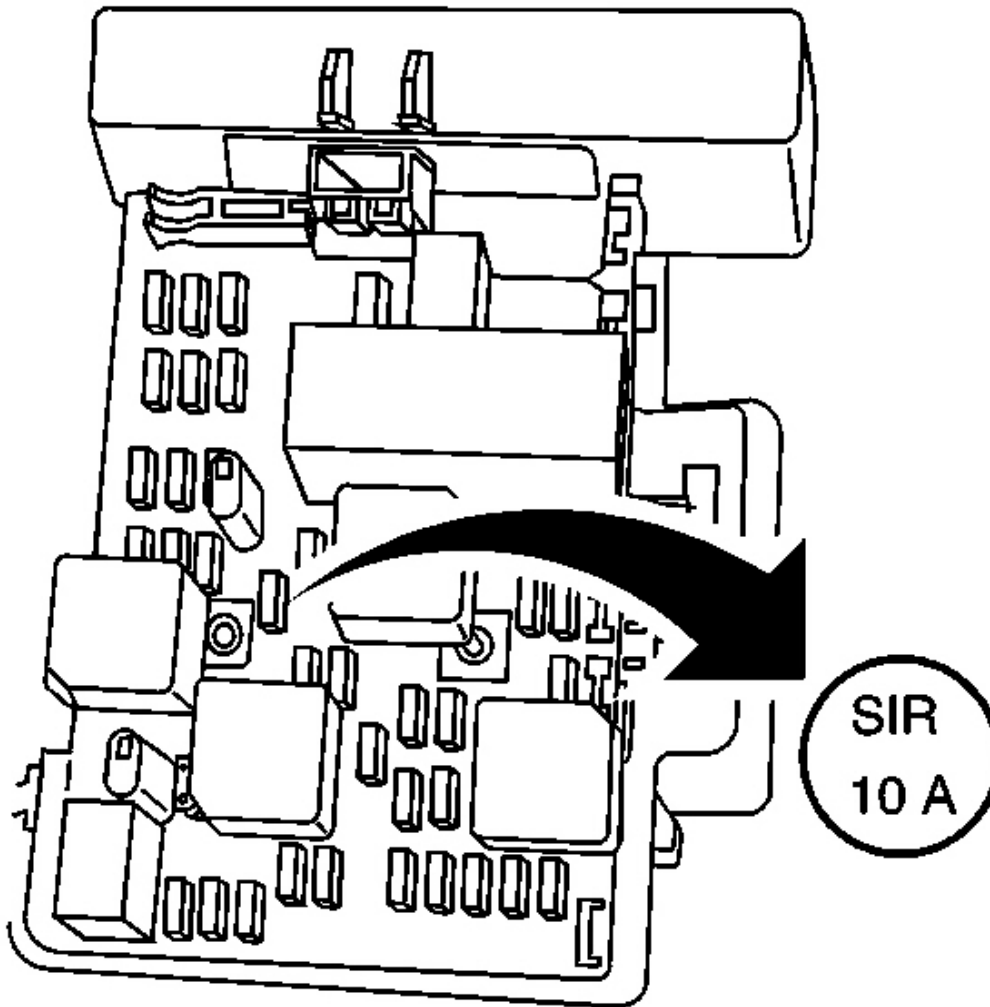
Discard any of the following components if it has been dropped from a height of 91 cm (3 ft) or greater:

- Inflatable restraint instrument panel (I/P) module
- Inflatable restraint steering wheel module
- Inflatable restraint steering wheel module coil
- Inflatable restraint sensing and diagnostic module (SDM)
- Inflatable restraint side impact modules
- Inflatable restraint front end sensors
- Inflatable restraint side impact sensors (SIS)
- Inflatable restraint seat belt retractor pretensioners
- Inflatable restraint passenger presence system (PPS)

## SIR DISABLING AND ENABLING ZONE 1

### Disabling Procedure

**IMPORTANT:** Refer to SIR Service Precautions.



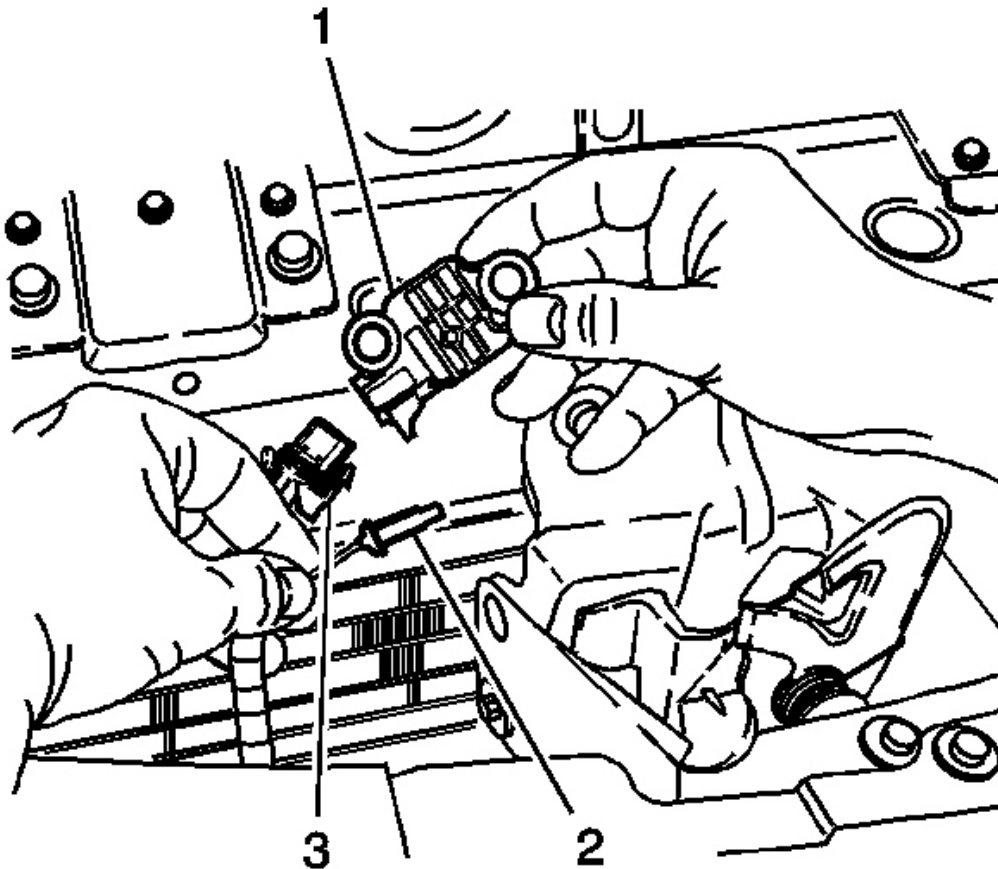
**Fig. 10: Locating SIR Fuse**  
Courtesy of GENERAL MOTORS CORP.

1. Turn the steering wheel so that the vehicle's wheels are pointing straight ahead.

2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT:** With the SIR Fuse removed and the ignition ON, the AIR BAG indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

5. Remove the SIR Fuse.

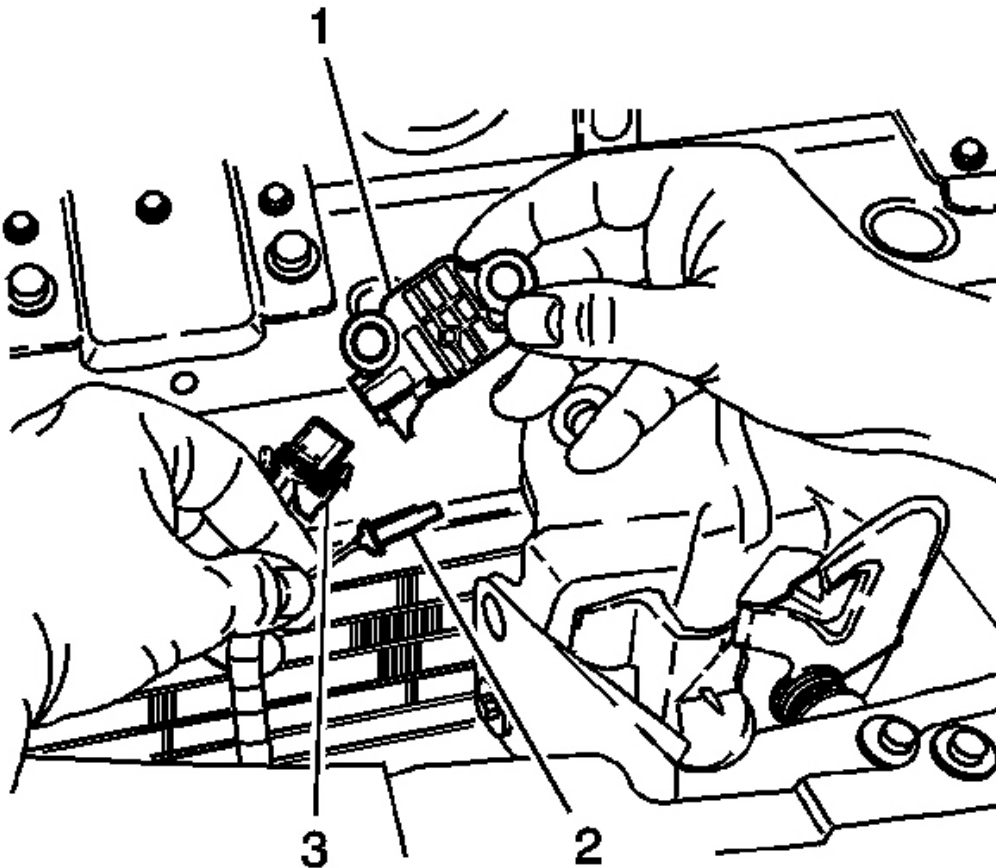


**Fig. 11: View Of Sensor, CPA & Yellow Sensor Harness Connector**  
Courtesy of GENERAL MOTORS CORP.

6. Remove the connector position assurance (CPA) (2) from the front end sensor harness connector (3).
7. Disconnect the harness connector (3) from the front end sensor (1).

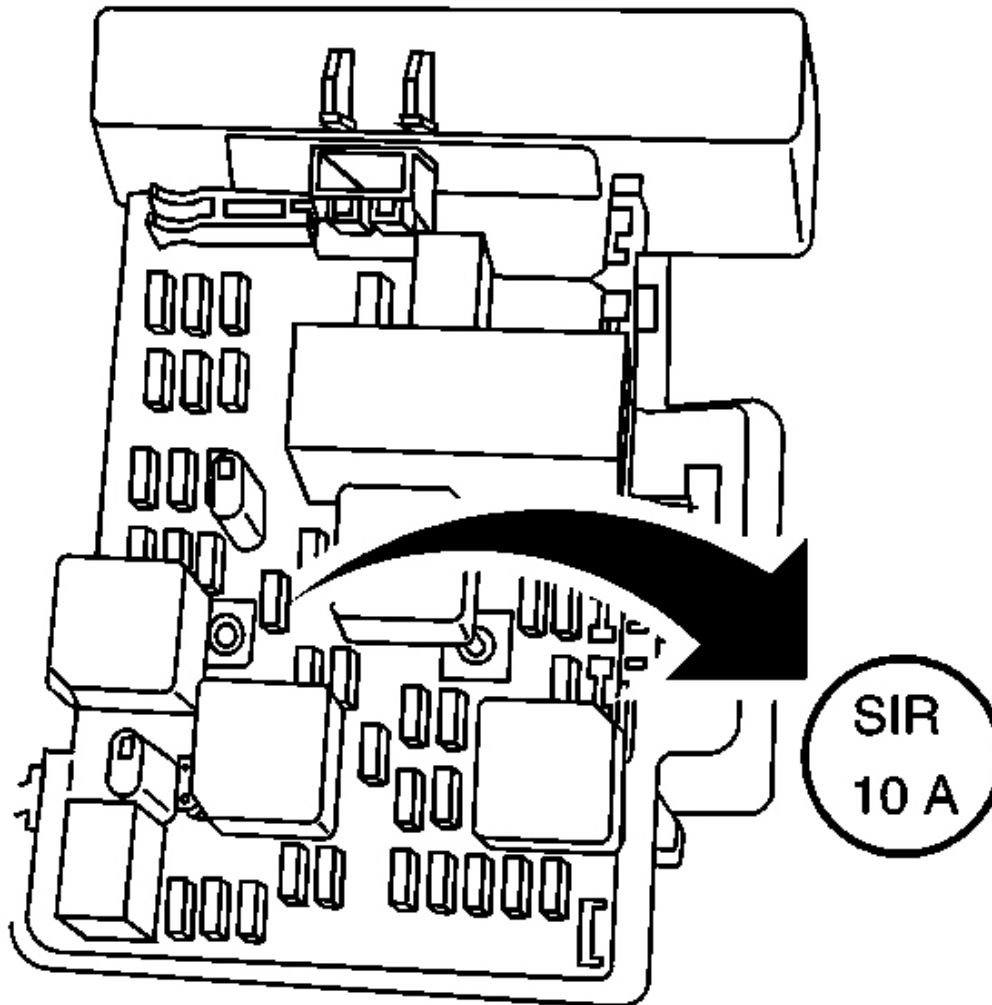
**Enabling Procedure**

1. Remove the key from the ignition.



**Fig. 12: View Of Sensor, CPA & Yellow Sensor Harness Connector**  
**Courtesy of GENERAL MOTORS CORP.**

2. Connect the harness connector (3) to the front end sensor (1).
3. Install the CPA (2) to the front end sensor harness connector (3).



**Fig. 13: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

4. Install the SIR Fuse.
5. Install the console accessory wiring junction block access hole cover.
6. Use caution while reaching in and turn the ignition switch to the ON position.

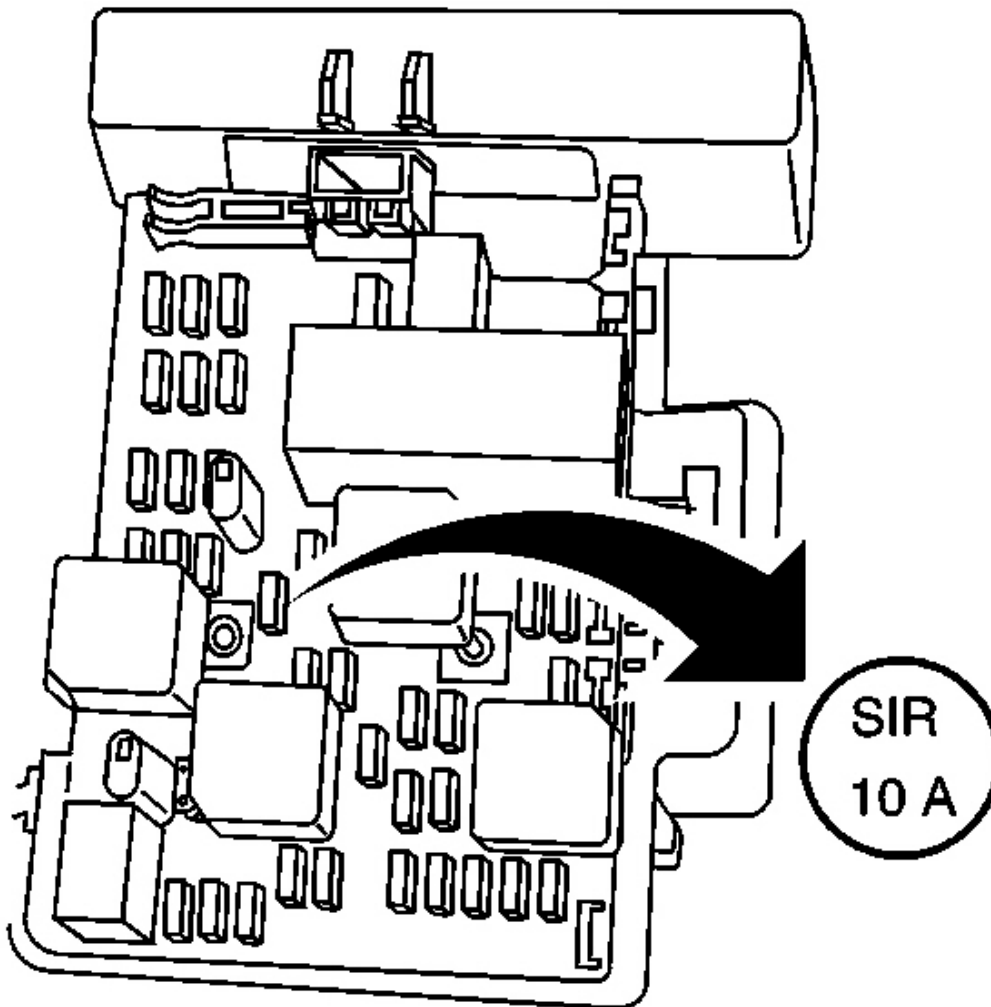
The AIR BAG indicator will flash then turn OFF.

7. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

## SIR DISABLING AND ENABLING ZONE 2

### Disabling Procedure

**IMPORTANT:** Refer to **SIR Service Precautions**.



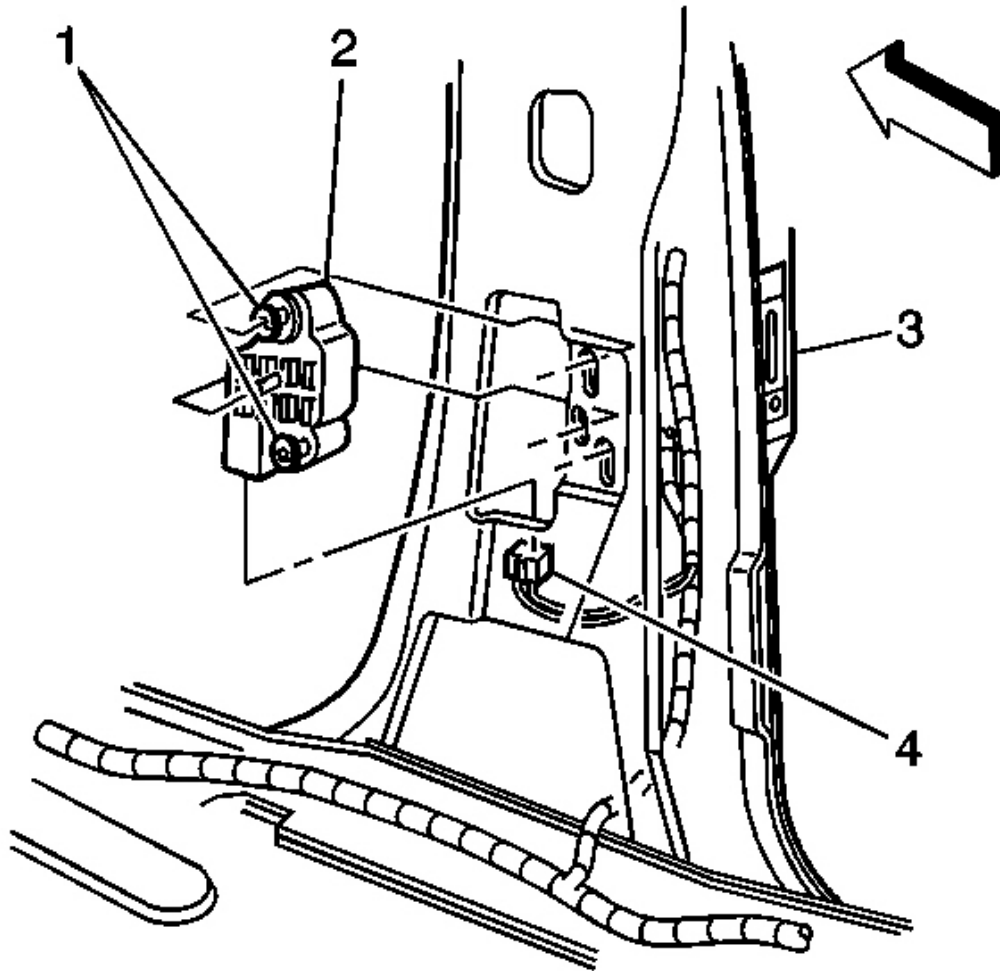
**Fig. 14: Locating SIR Fuse**

**Courtesy of GENERAL MOTORS CORP.**

1. Turn the steering wheel so that the vehicles wheels are pointing straight ahead.
2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT: With the SIR Fuse removed and the ignition ON, the AIR BAG indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.**

5. Remove the SIR Fuse.



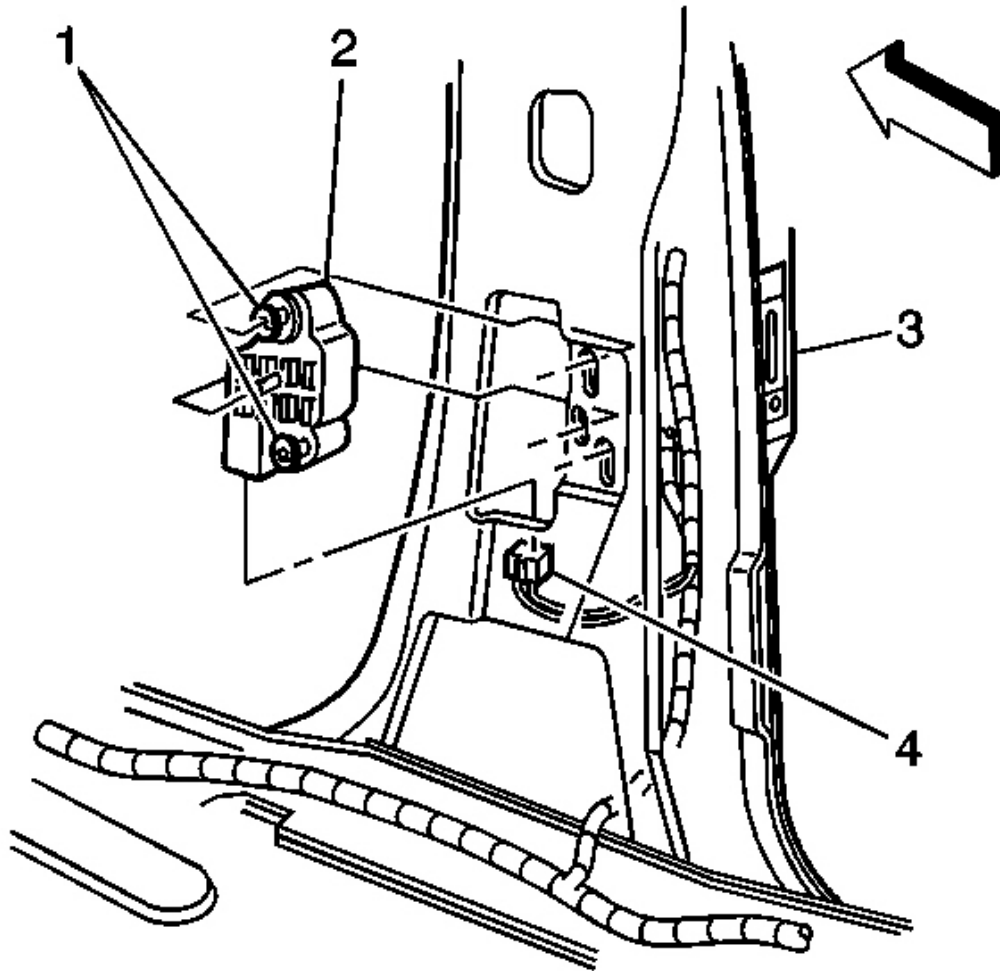
**Fig. 15: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

**Courtesy of GENERAL MOTORS CORP.**

6. Remove the connector position assurance (CPA) from the side impact sensor (SIS) and pretensioner harness connectors (4).
7. Disconnect the SIS and pretensioner wiring harness connectors (4).

**Enabling Procedure**

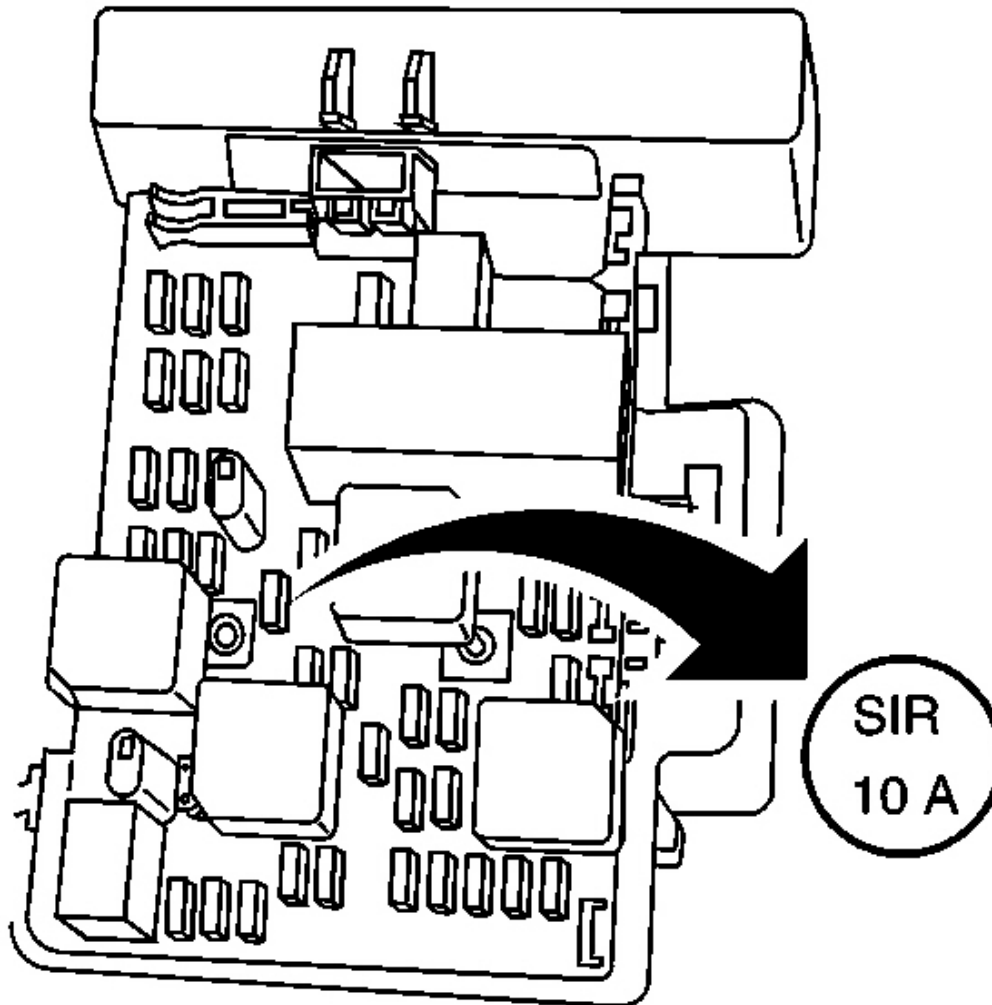
1. Remove the key from the ignition.



**Fig. 16: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

**Courtesy of GENERAL MOTORS CORP.**

2. Connect the CPA to the SIS and pretensioner harness connectors (4).
3. Install the CPA (2) to the SIS and pretensioner harness connectors (3).



**Fig. 17: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

4. Install the SIR Fuse.
5. Install the console accessory wiring junction block access hole cover.
6. Use caution while reaching in and turn the ignition switch to the ON position.

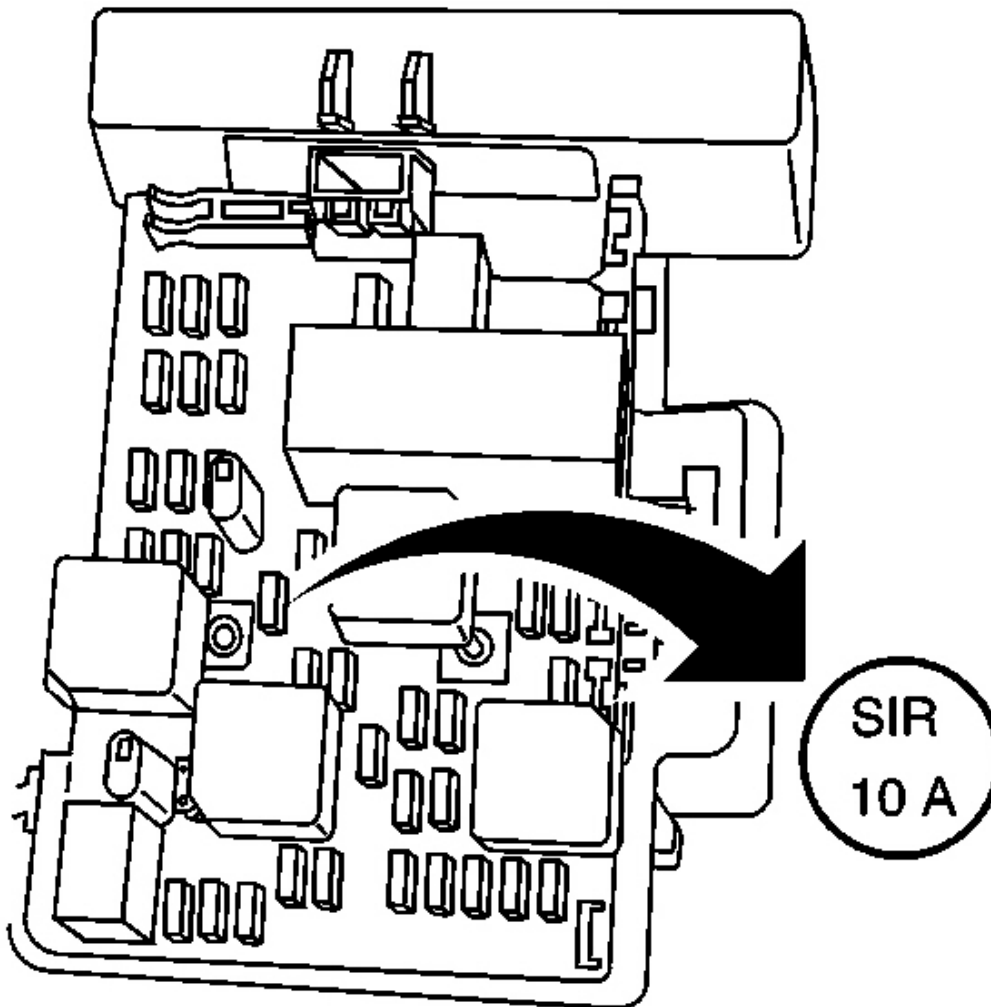
The AIR BAG indicator will flash then turn OFF.

7. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

### SIR DISABLING AND ENABLING ZONE 3

#### Disabling Procedure

**IMPORTANT:** Refer to **SIR Service Precautions**.



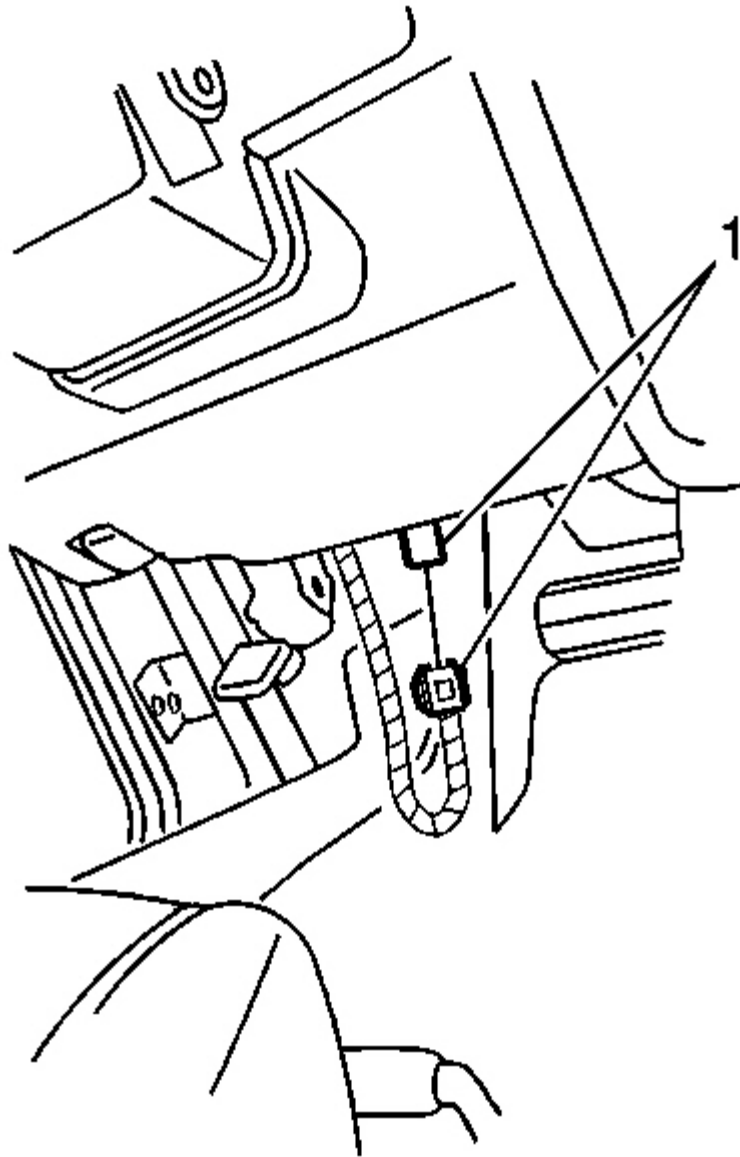
**Fig. 18: Locating SIR Fuse**

**Courtesy of GENERAL MOTORS CORP.**

1. Turn the steering wheel so that the vehicle's wheels are pointing straight ahead.
2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT: With the SIR Fuse removed and the ignition ON, the AIR BAG indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.**

5. Remove the SIR Fuse.



**Fig. 19: Locating Inflatable Restraint Steering Wheel Module Coil Connector**  
Courtesy of GENERAL MOTORS CORP.

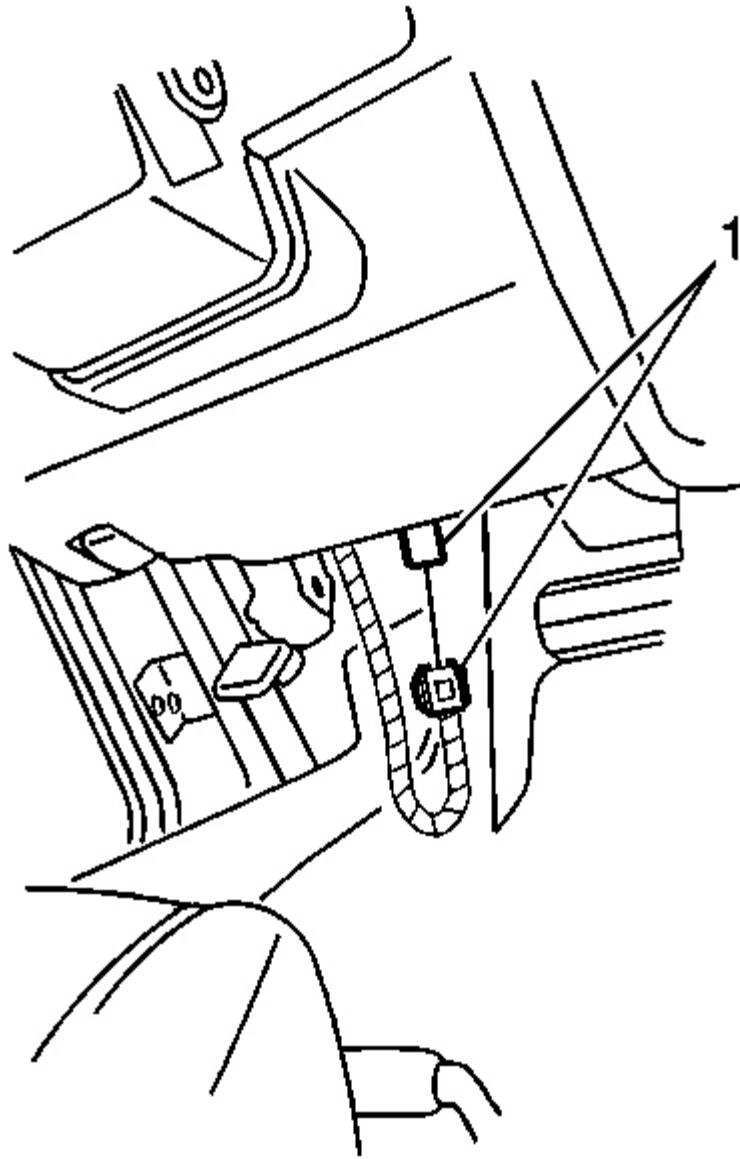
6. Remove the LH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Left** in Instrument Panel, Gages, and Console.

|                                  |
|----------------------------------|
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7. Remove the connector position assurance (CPA) from the steering wheel module coil connector (1) located at the base of the steering column.
8. Disconnect the steering wheel module coil connector (1).

**Enabling Procedure**

1. Remove the key from the ignition.

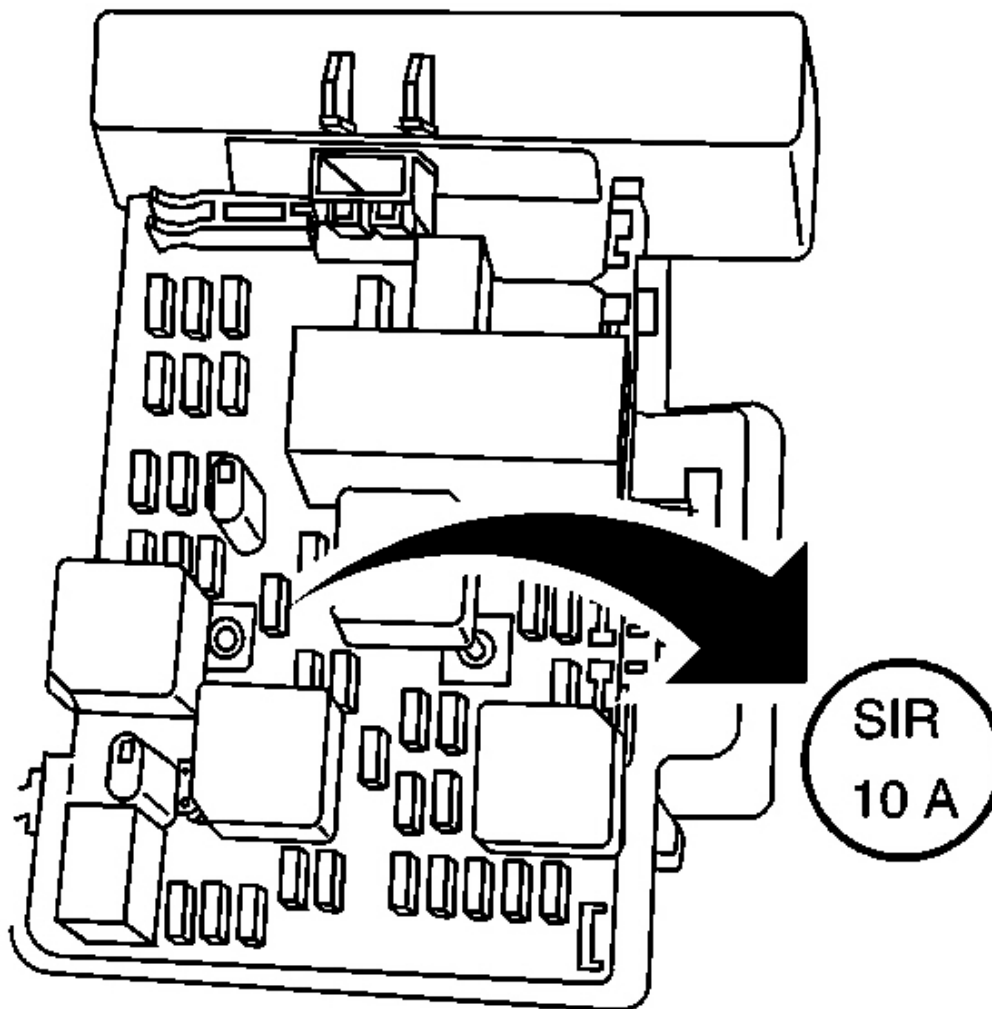


**Fig. 20: Locating Inflatable Restraint Steering Wheel Module Coil Connector**  
**Courtesy of GENERAL MOTORS CORP.**

2. Connect the steering wheel module coil connector (1).
3. Install the CPA to the steering wheel module coil connector (1) located at the base of the

steering column.

4. Install the LH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Left** in Instrument Panel, Gages, and Console.



**Fig. 21: Locating SIR Fuse**

**Courtesy of GENERAL MOTORS CORP.**

5. Install the SIR Fuse.
6. Install the console accessory wiring junction block access hole cover.

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7. Use caution while reaching in and turn the ignition switch to the ON position.

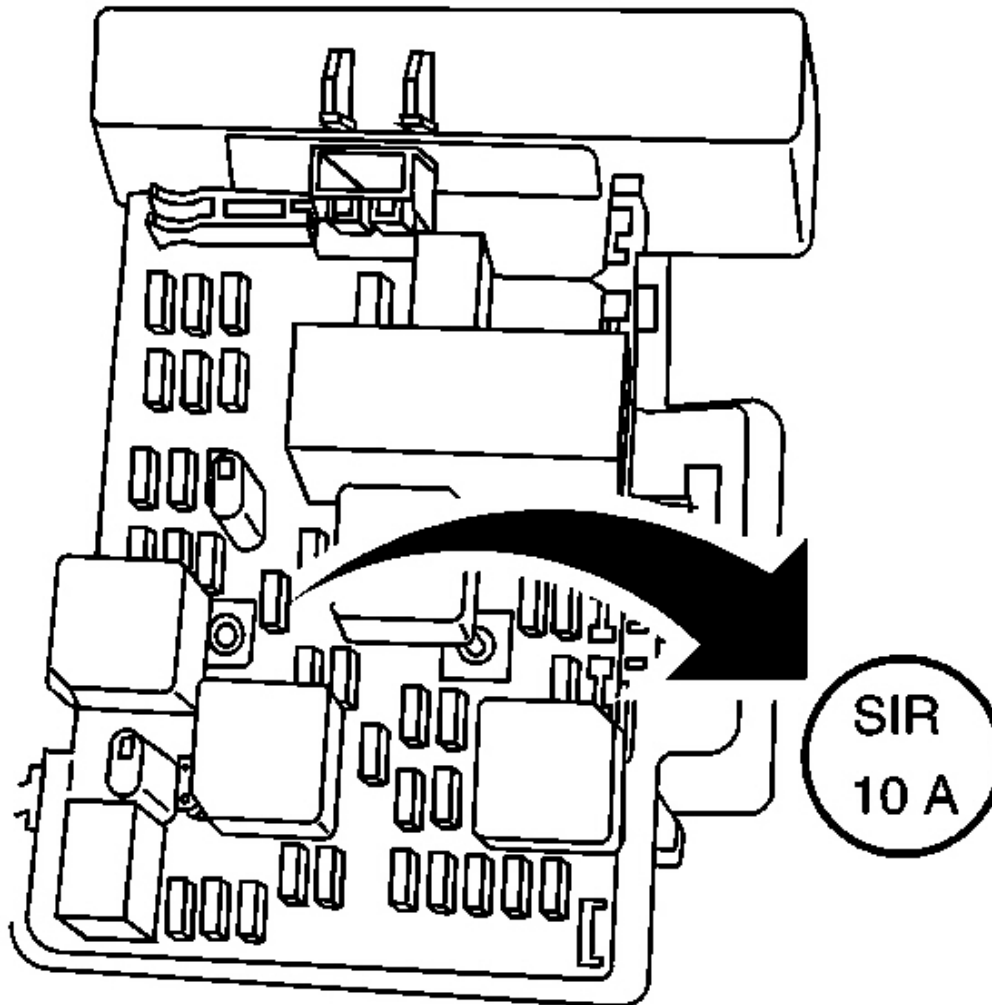
The AIR BAG indicator will flash then turn OFF.

8. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

## **SIR DISABLING AND ENABLING ZONE 5**

### **Disabling Procedure**

**IMPORTANT: Refer to SIR Service Precautions.**



**Fig. 22: Locating SIR Fuse**

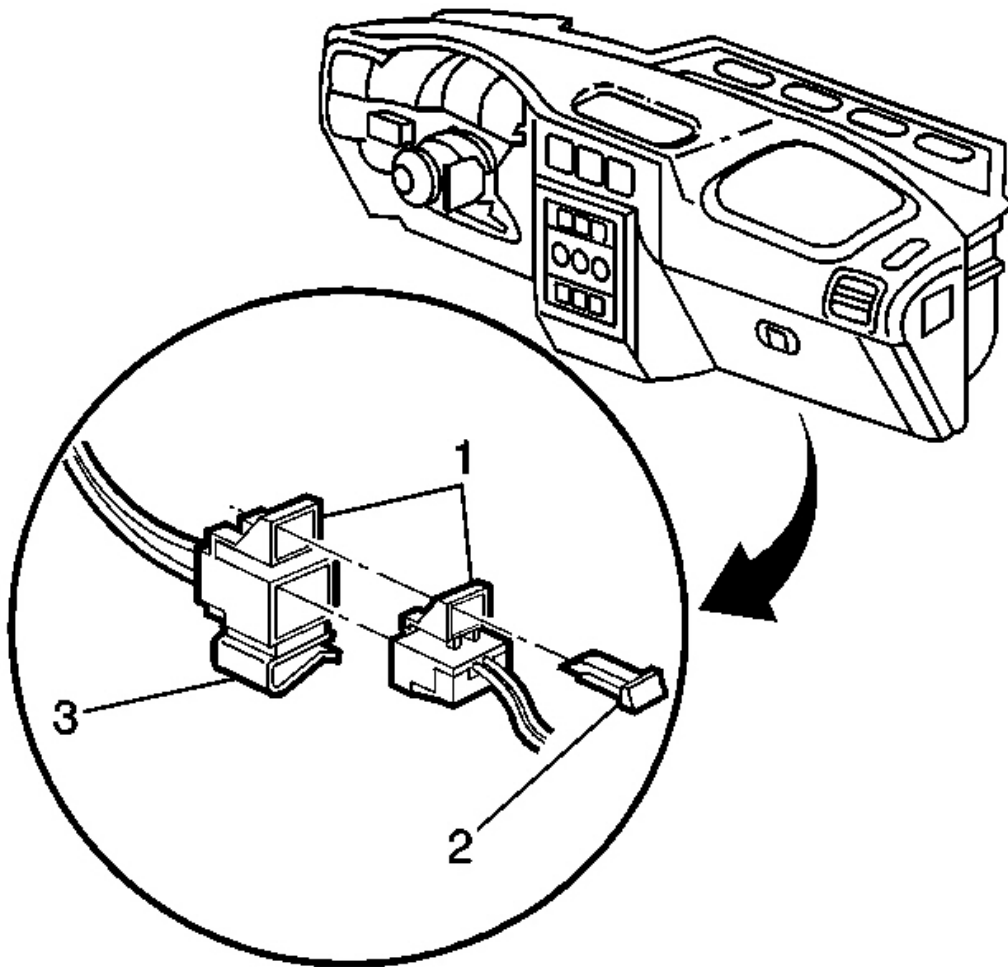
**Courtesy of GENERAL MOTORS CORP.**

1. Turn the steering wheel so that the vehicle wheels are pointing straight ahead.
2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT:** With the SIR Fuse removed and the ignition ON, the AIR BAG

indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

5. Remove the SIR Fuse.



**Fig. 23: Identifying Inflatable Restraint IP Module Connector**  
Courtesy of GENERAL MOTORS CORP.

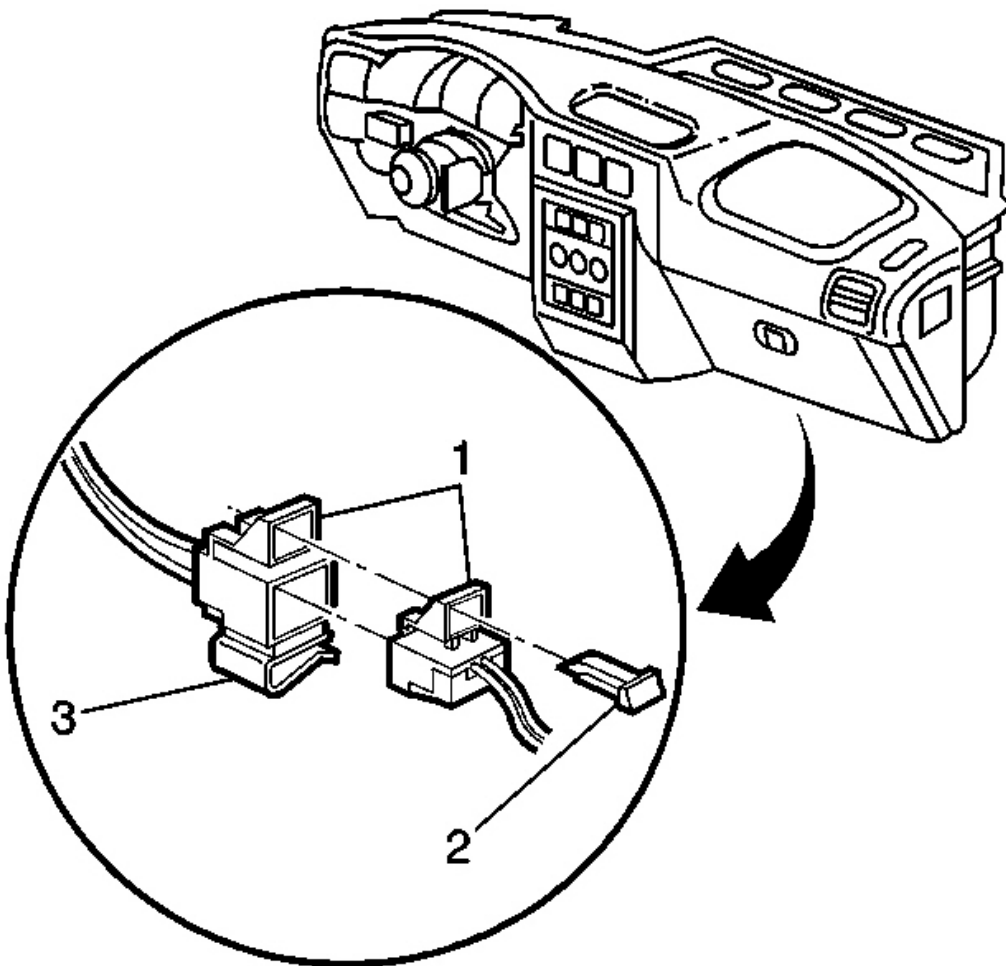
6. Remove the RH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Right** in Instrument Panel, Gages, and Console.
7. Remove the connector position assurance (CPA) (2) from the instrument panel (I/P) module

connector (1).

8. Disconnect the I/P module connector (1).

#### Enabling Procedure

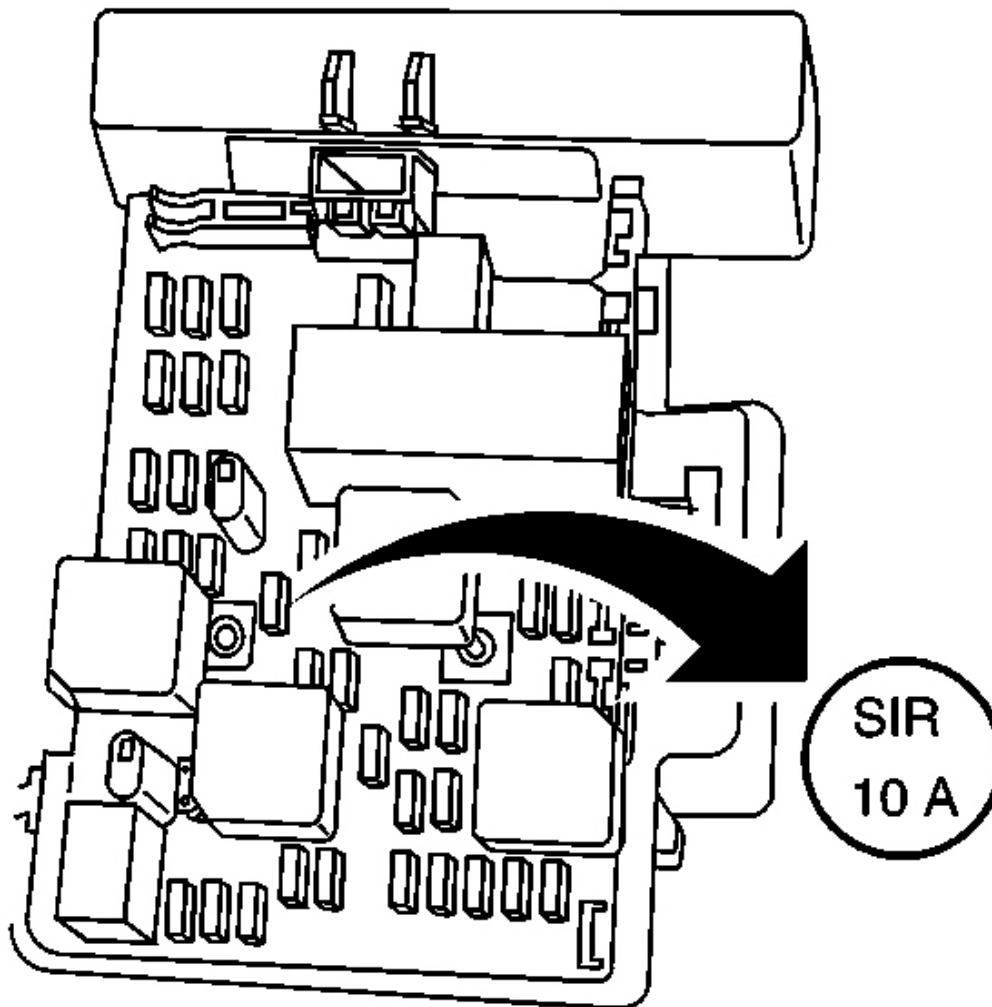
1. Remove the key from the ignition.



**Fig. 24: Identifying Inflatable Restraint IP Module Connector**  
Courtesy of GENERAL MOTORS CORP.

2. Connect the I/P module connector (1).

3. Install the CPA (2) to the I/P module connector (1).
4. Install the RH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Right** in Instrument Panel, Gages, and Console.



**Fig. 25: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

5. Install the SIR Fuse.
6. Install the console accessory wiring junction block access hole cover.

|                                  |
|----------------------------------|
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7. Use caution while reaching in and turn the ignition switch to the ON position.

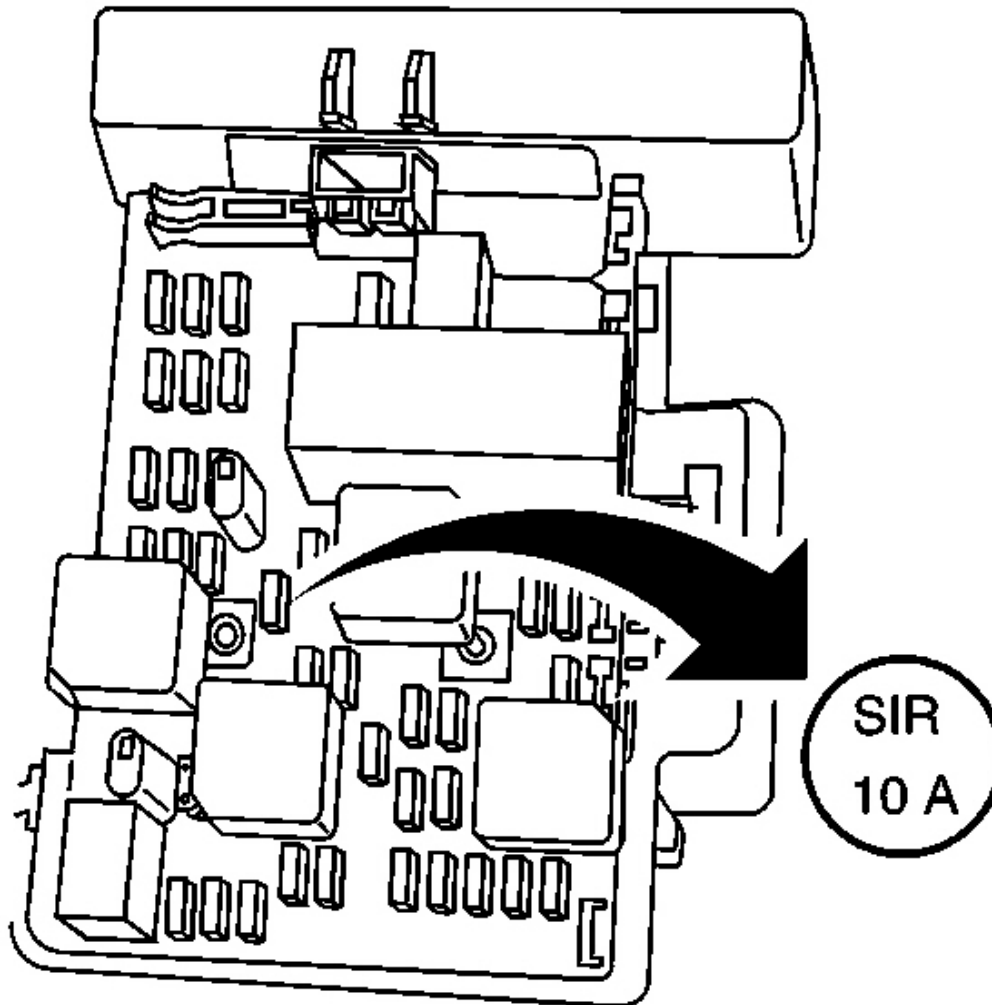
The AIR BAG indicator will flash then turn OFF.

8. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

## **SIR DISABLING AND ENABLING ZONE 6**

### **Disabling Procedure**

**IMPORTANT: Refer to SIR Service Precautions.**



**Fig. 26: Locating SIR Fuse**

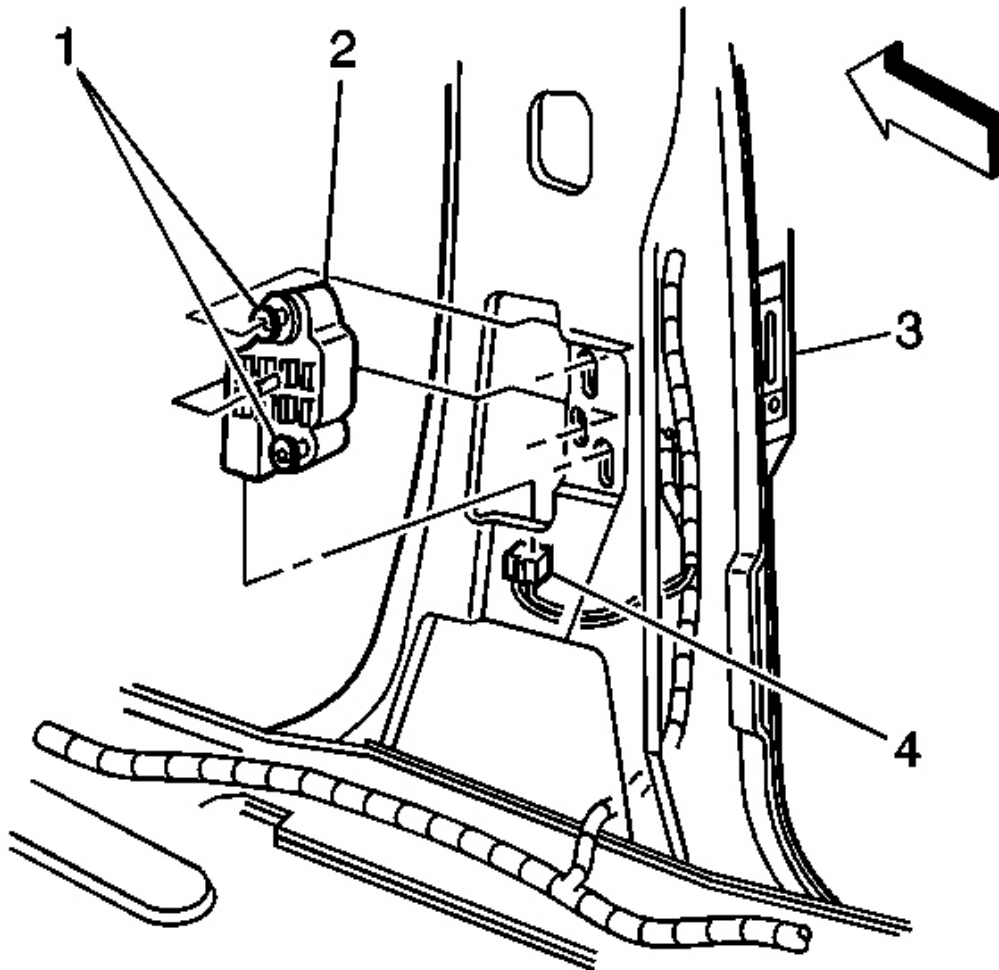
**Courtesy of GENERAL MOTORS CORP.**

1. Turn the steering wheel so that the vehicles wheels are pointing straight ahead.
2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT:** With the SIR Fuse removed and the ignition ON, the AIR BAG

indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

5. Remove the SIR Fuse.



**Fig. 27: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

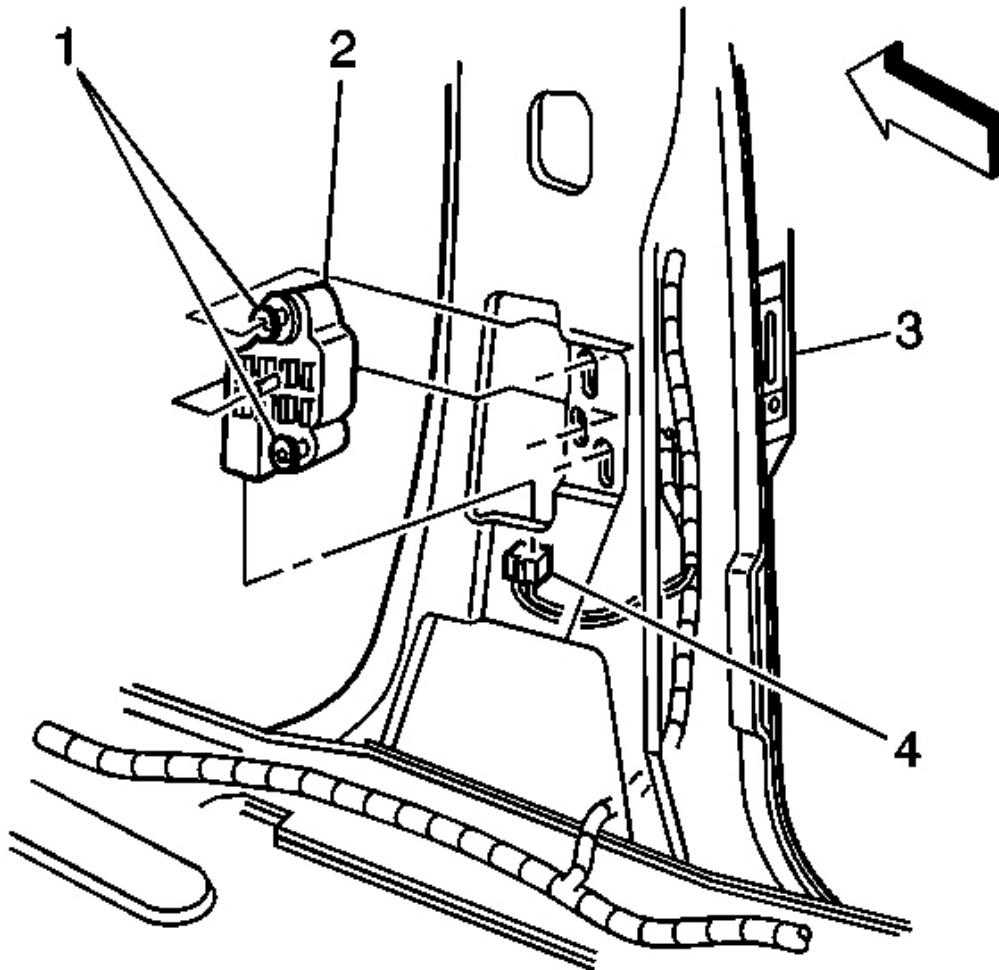
**Courtesy of GENERAL MOTORS CORP.**

6. Remove the connector position assurance (CPA) from the side impact sensor (SIS) and pretensioner harness connectors (4).

7. Disconnect the SIS and pretensioner wiring harness connectors (4).

**Enabling Procedure**

1. Remove the key from the ignition.

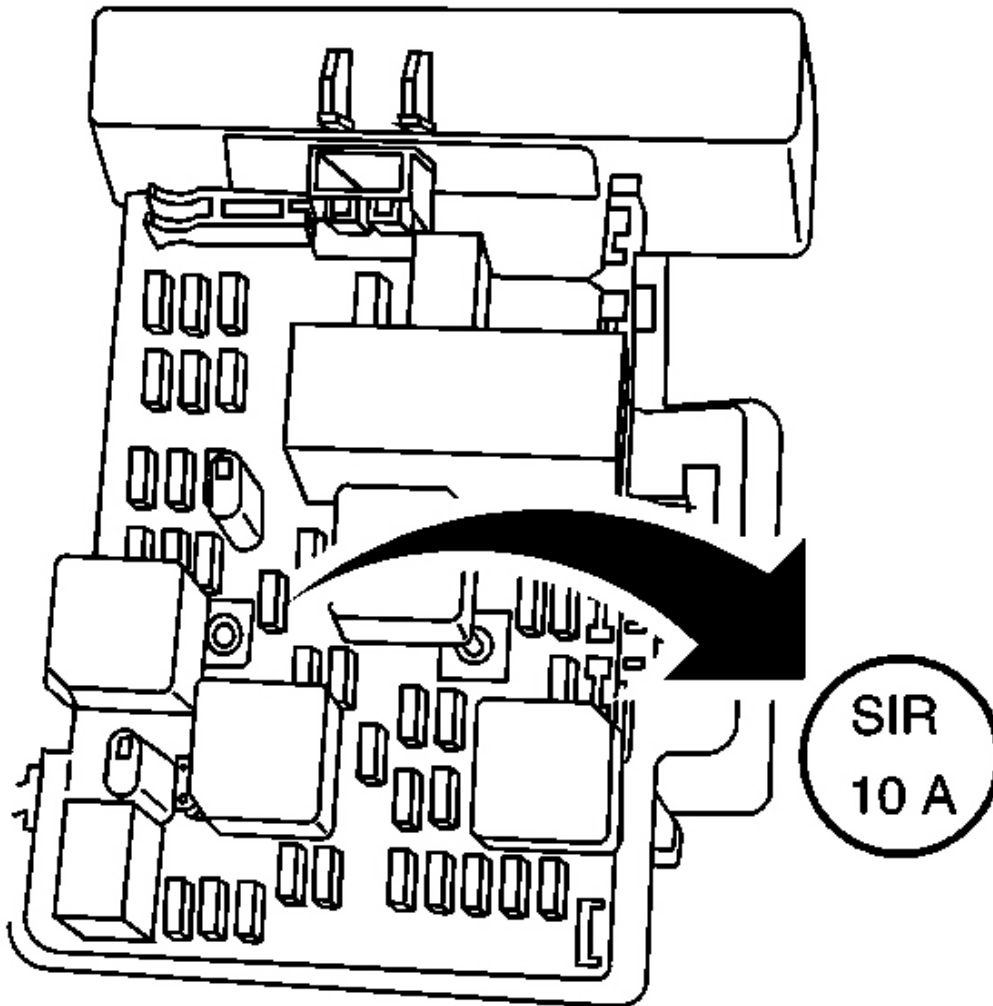


**Fig. 28: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

**Courtesy of GENERAL MOTORS CORP.**

2. Connect the SIS and pretensioner harness connectors (4).

3. Install the CPA (2) to the SIS and pretensioner harness connectors (4).



**Fig. 29: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

4. Install the SIR Fuse.
5. Install the console accessory wiring junction block access hole cover.
6. Use caution while reaching in and turn the ignition switch to the ON position.

|                                  |
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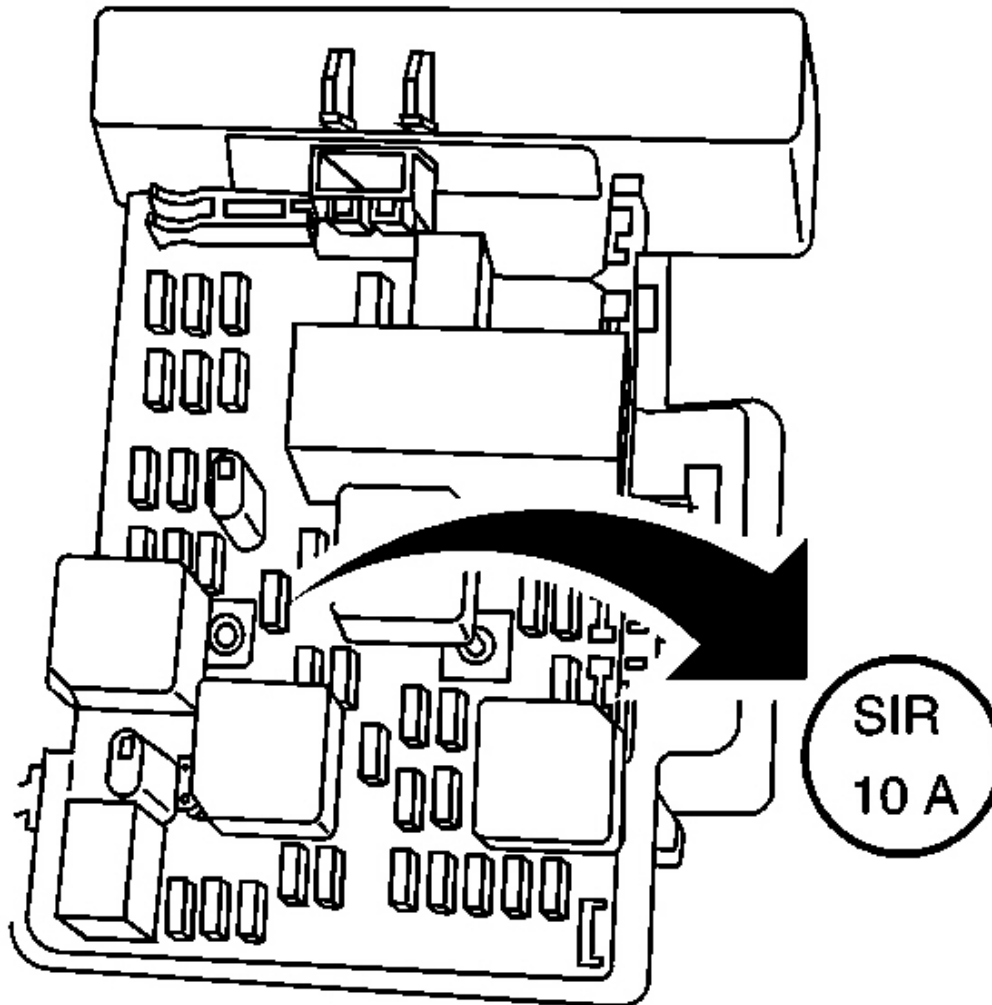
The AIR BAG indicator will flash then turn OFF.

7. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

## **SIR DISABLING AND ENABLING ZONE 7**

### **Disabling Procedure**

**IMPORTANT: Refer to SIR Service Precautions.**



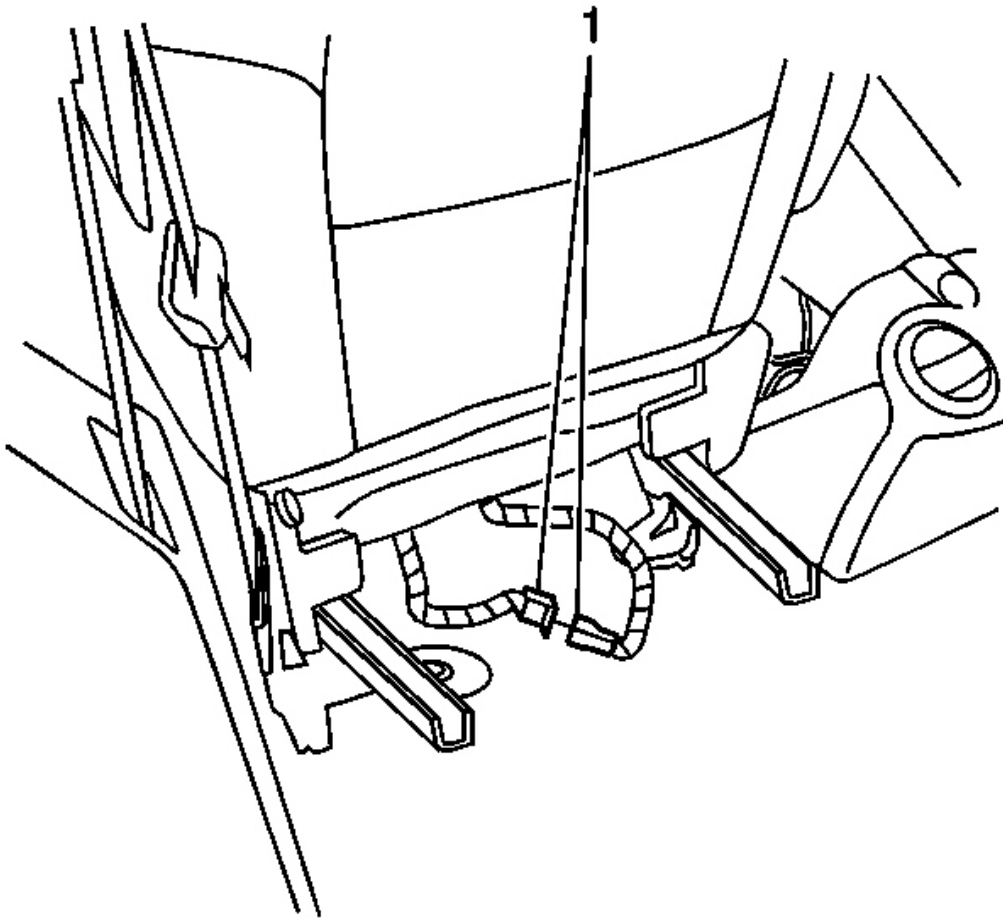
**Fig. 30: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

1. Turn the steering wheel so that the vehicles wheels are pointing straight ahead.
2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT:** With the SIR Fuse removed and the ignition ON, the AIR BAG

**indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.**

5. Remove the SIR Fuse.

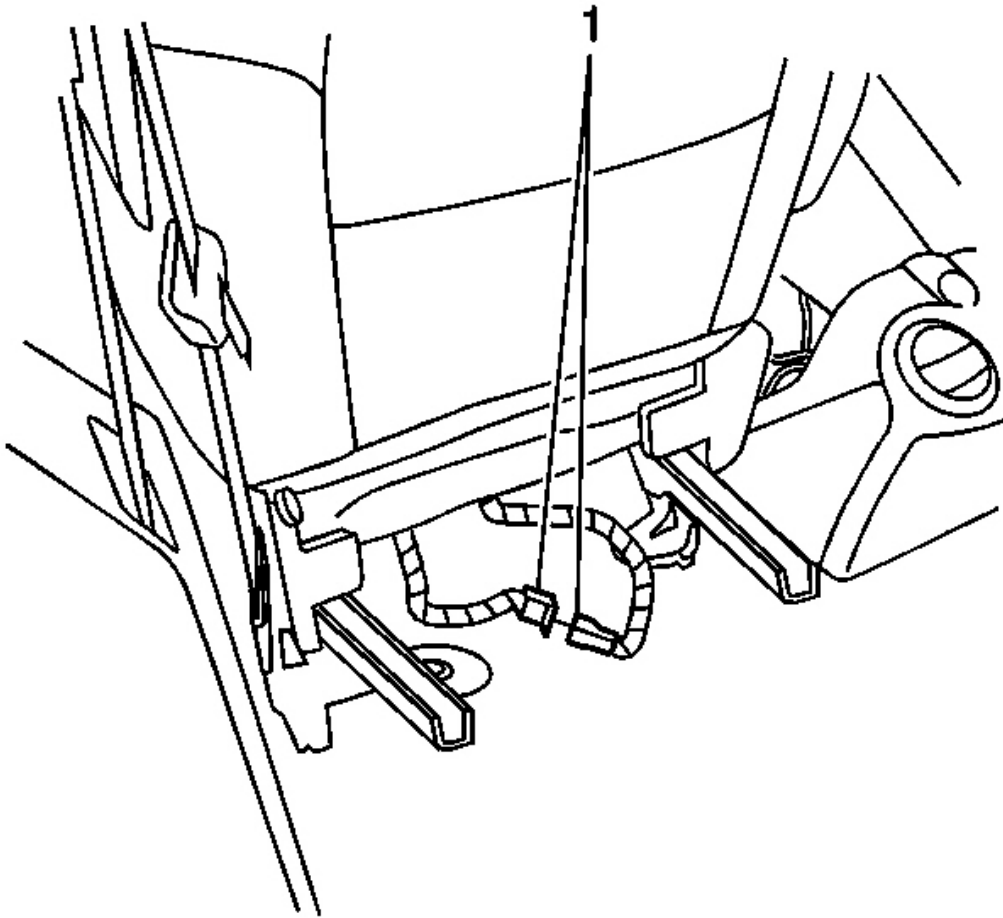


**Fig. 31: View Of Deployment Harness At Side Impact Module**  
**Courtesy of GENERAL MOTORS CORP.**

6. Remove the connector position assurance (CPA) from the LF/driver side impact module connector (1) which is located under the driver seat.
7. Disconnect the vehicle harness connector from the LF side impact module connector (1).

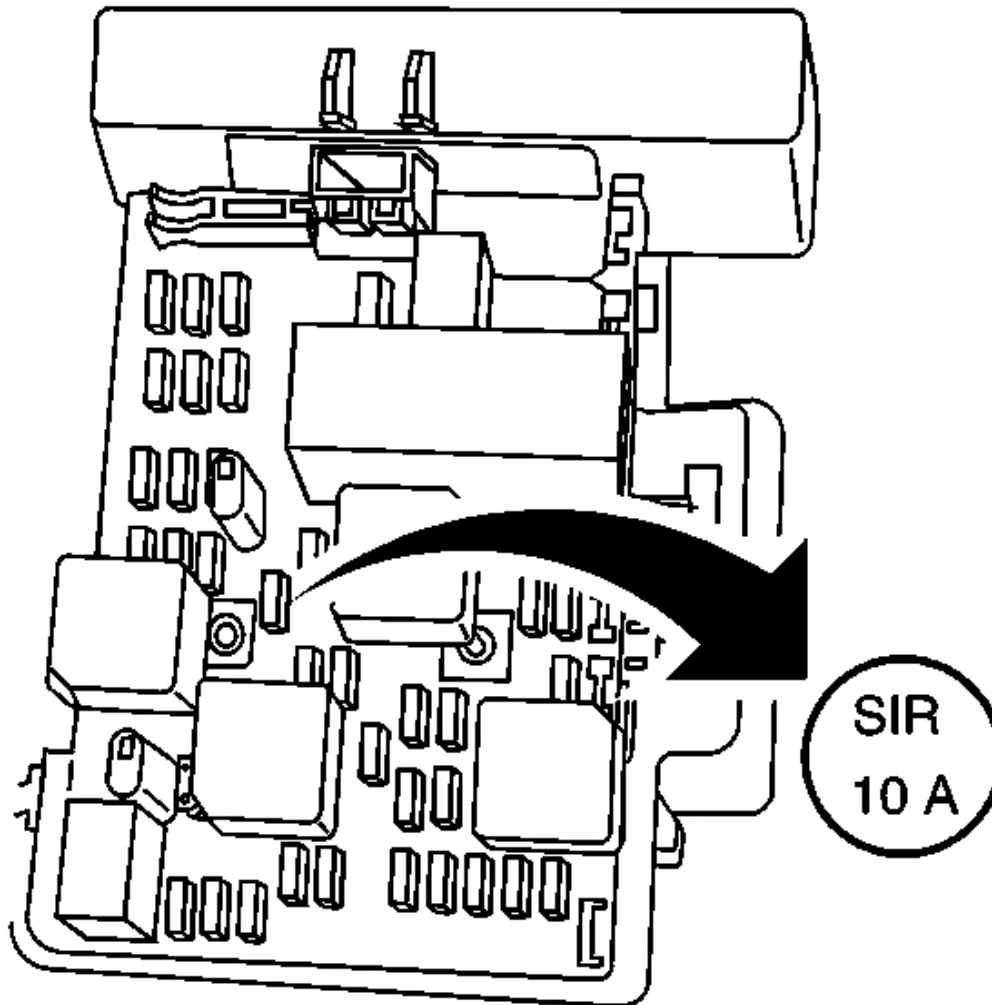
### Enabling Procedure

1. Remove the key from the ignition.



**Fig. 32: View Of Deployment Harness At Side Impact Module**  
**Courtesy of GENERAL MOTORS CORP.**

2. Connect the vehicle harness connector to the LF side impact module connector (1).
3. Install the CPA to the LF side impact module yellow connector (1).



**Fig. 33: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

4. Install the SIR Fuse.
5. Install the console accessory wiring junction block access hole cover.
6. Use caution while reaching in and turn the ignition switch to the ON position.

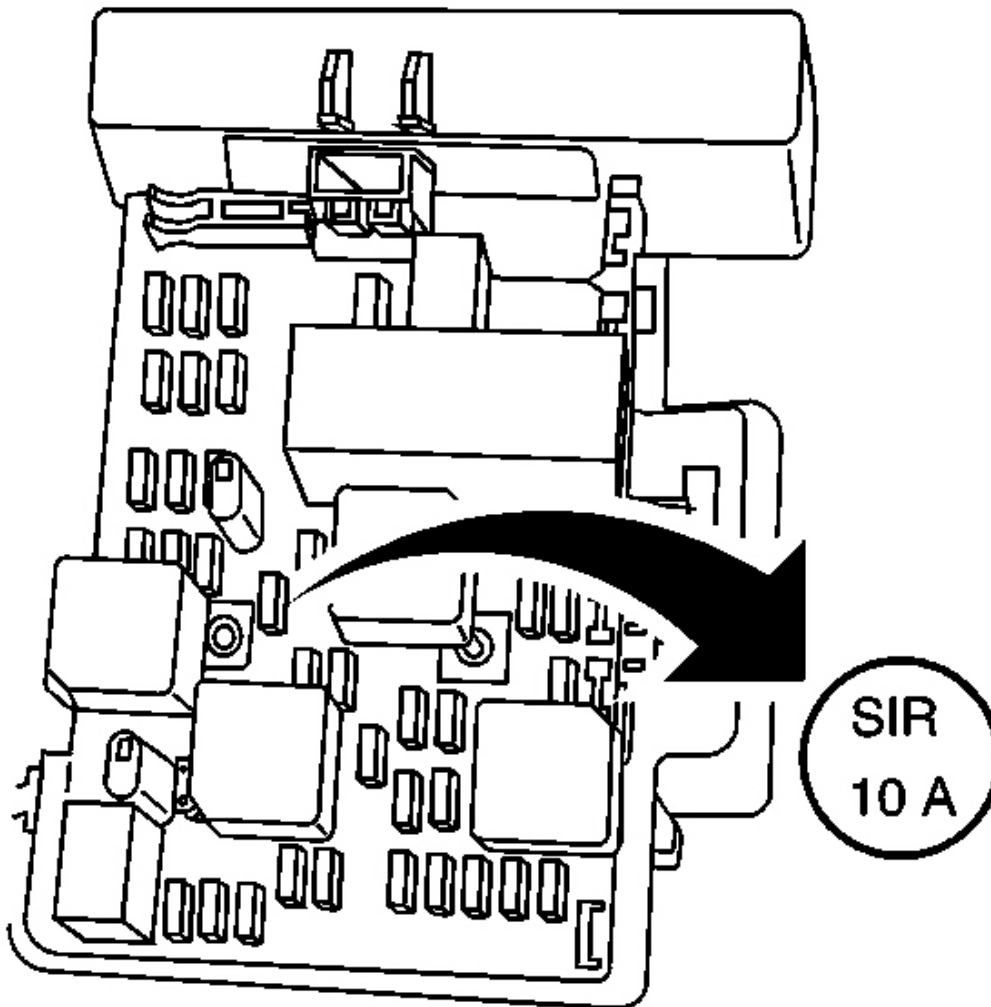
The AIR BAG indicator will flash then turn OFF.

7. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

## SIR DISABLING AND ENABLING ZONE 9

### Disabling Procedure

**IMPORTANT:** Refer to **SIR Service Precautions**.



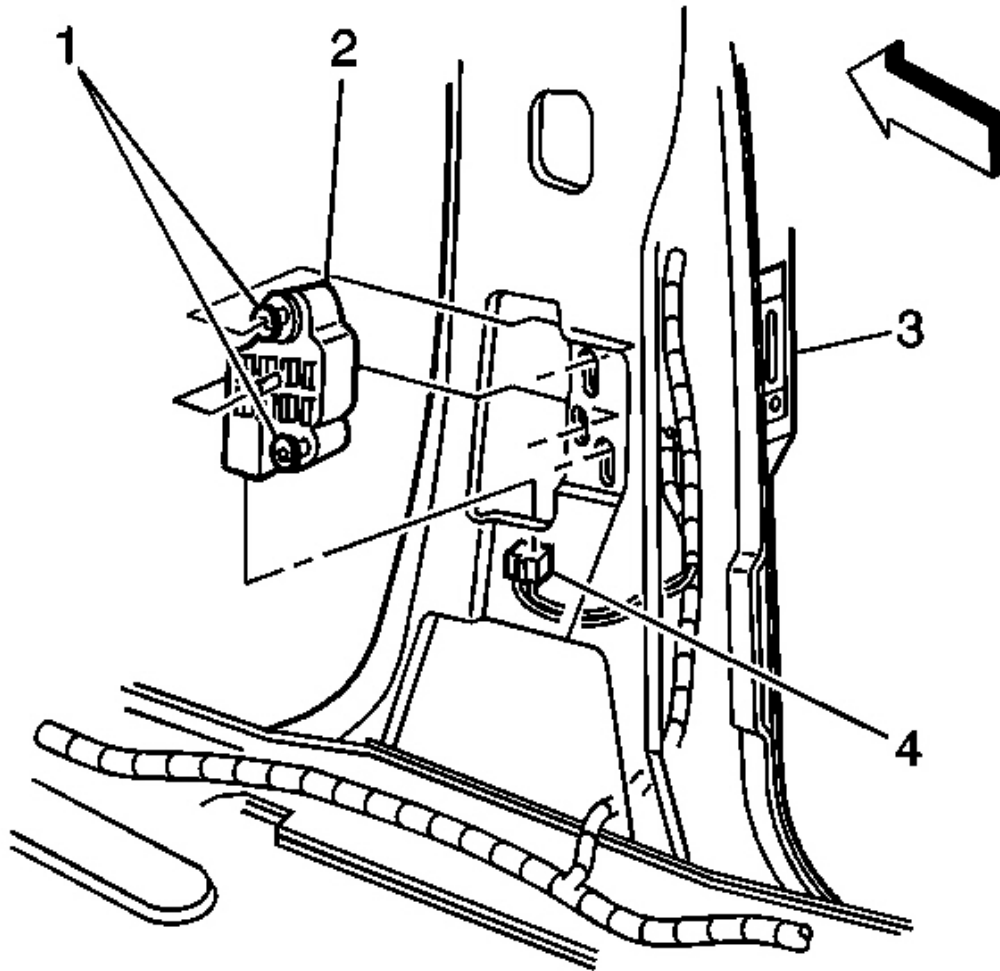
**Fig. 34: Locating SIR Fuse**

**Courtesy of GENERAL MOTORS CORP.**

1. Turn the steering wheel so that the vehicle wheels are pointing straight ahead.
2. Turn OFF the ignition.
3. Remove the key from the ignition switch.
4. Remove the console accessory wiring junction block access hole cover.

**IMPORTANT: With the SIR Fuse removed and the ignition ON, the AIR BAG indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.**

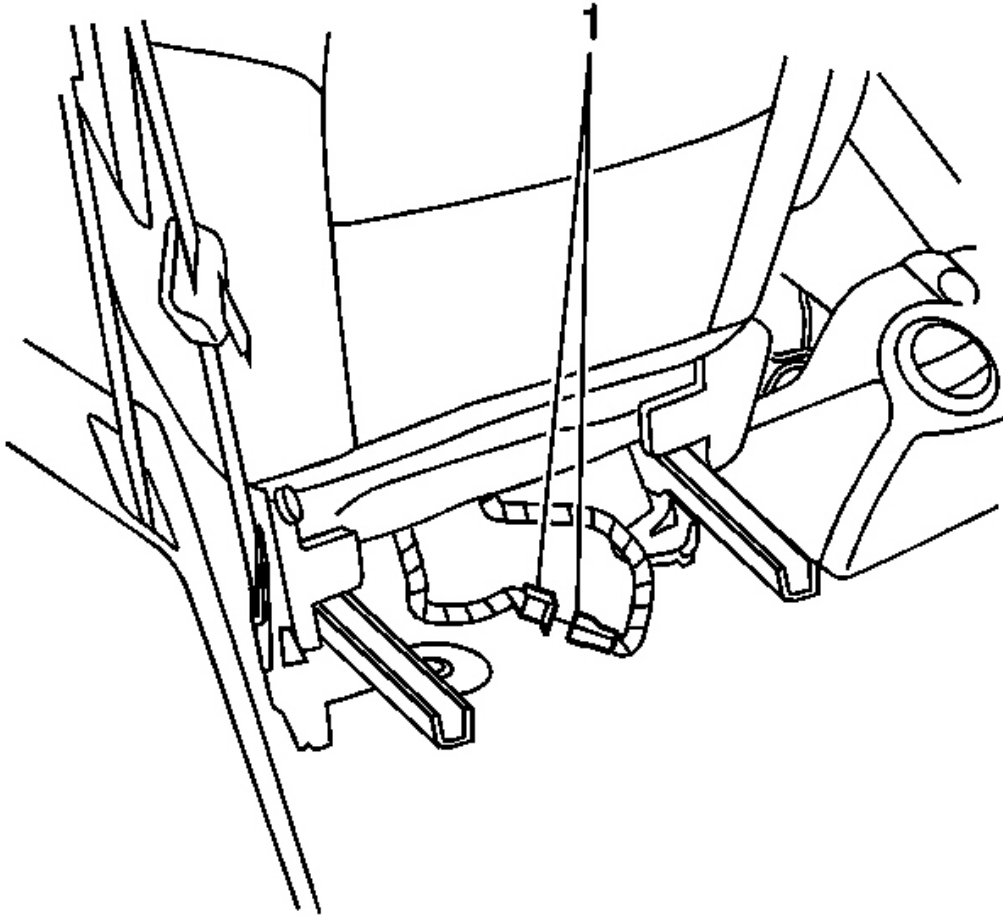
5. Remove the SIR Fuse.
6. When only disabling only side impact module - RF proceed to step 19, if the entire SIR system needs to be disable then go to step 7.



**Fig. 35: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

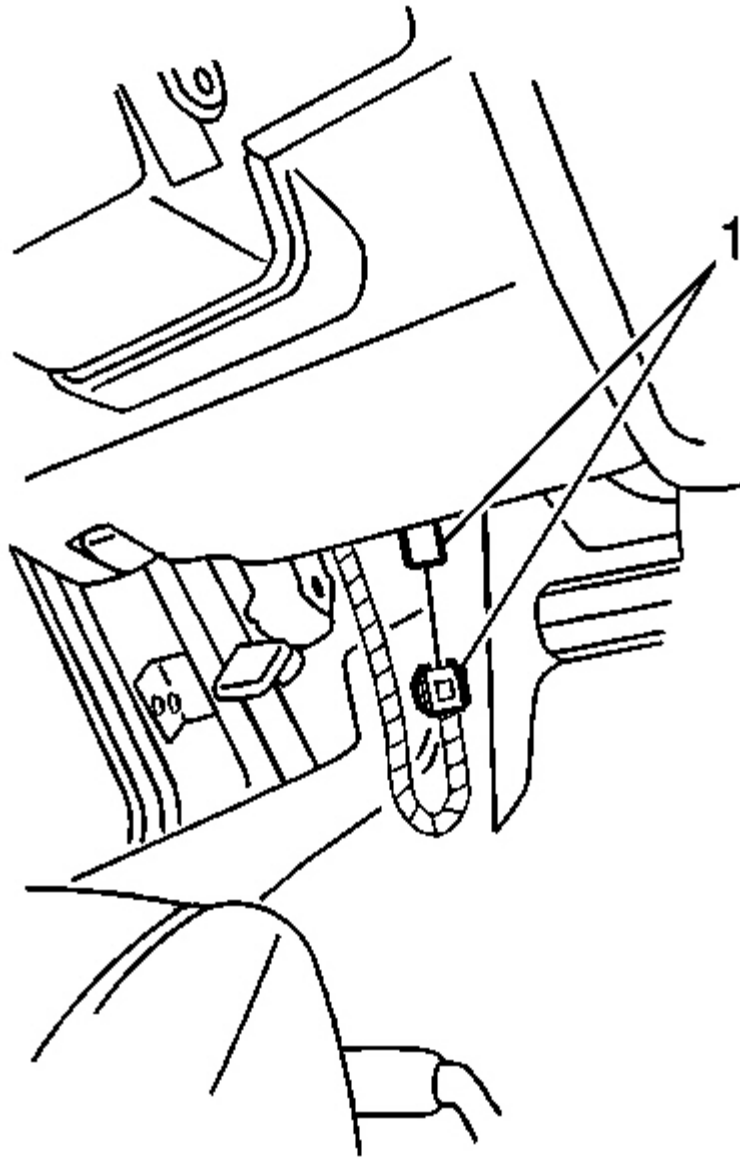
**Courtesy of GENERAL MOTORS CORP.**

7. Remove the connector position assurance (CPA) from the left side impact sensor (SIS) and pretensioner harness connectors (4).
8. Disconnect the SIS and pretensioner wiring harness connectors (4).



**Fig. 36: View Of Deployment Harness At Side Impact Module**  
**Courtesy of GENERAL MOTORS CORP.**

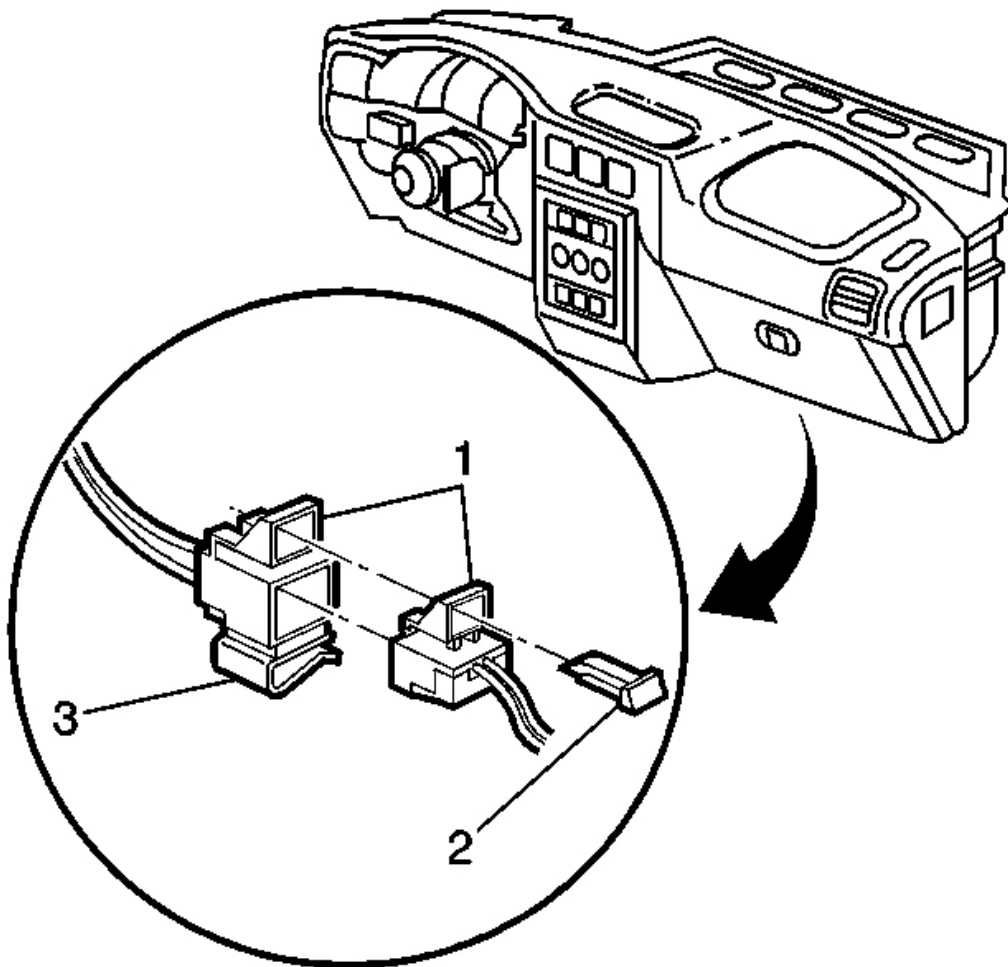
9. Remove the CPA from the LF/driver side impact module connector (1) which is located under the driver seat.
10. Disconnect the vehicle harness connector from the LF side impact module connector (1).



**Fig. 37: Locating Inflatable Restraint Steering Wheel Module Coil Connector**  
Courtesy of GENERAL MOTORS CORP.

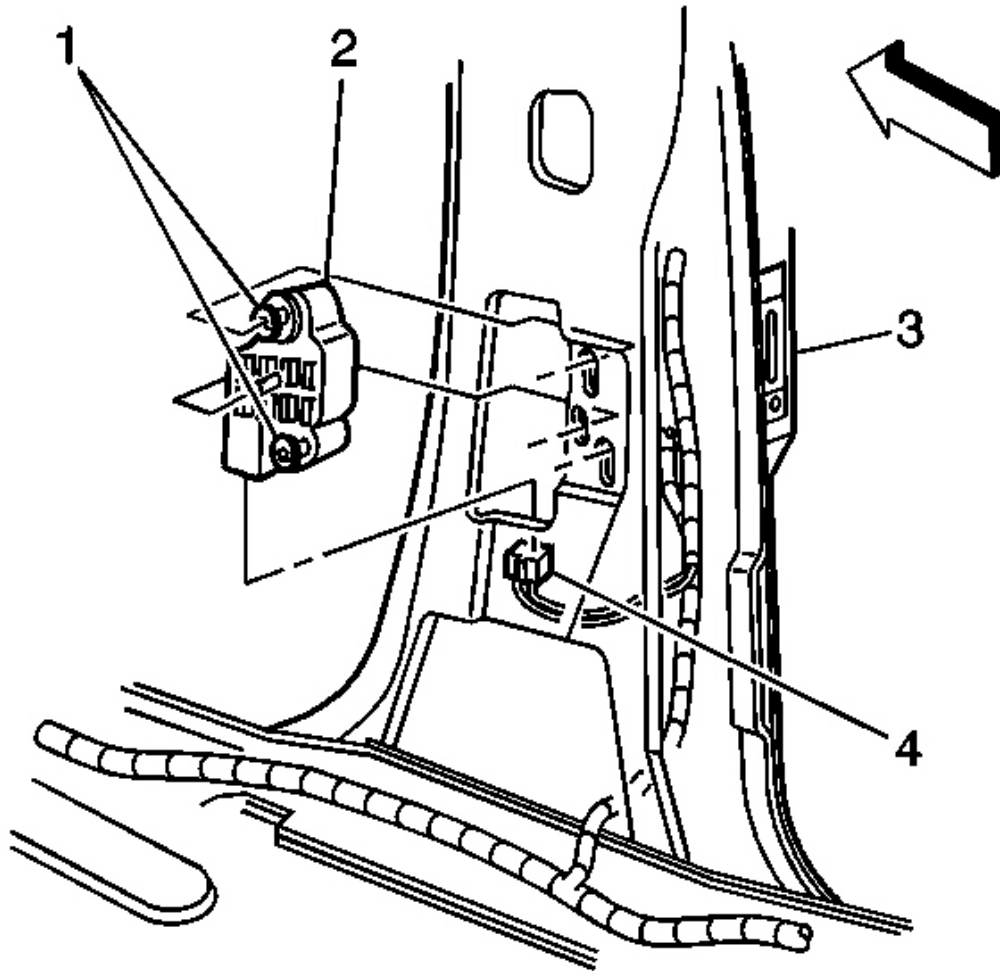
11. Remove the LH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Left** in Instrument Panel, Gages, and Console.

12. Remove the CPA from the steering wheel module coil connector (1) located at the base of the steering column.
13. Disconnect the steering wheel module coil connector (1).



**Fig. 38: Identifying Inflatable Restraint IP Module Connector**  
Courtesy of GENERAL MOTORS CORP.

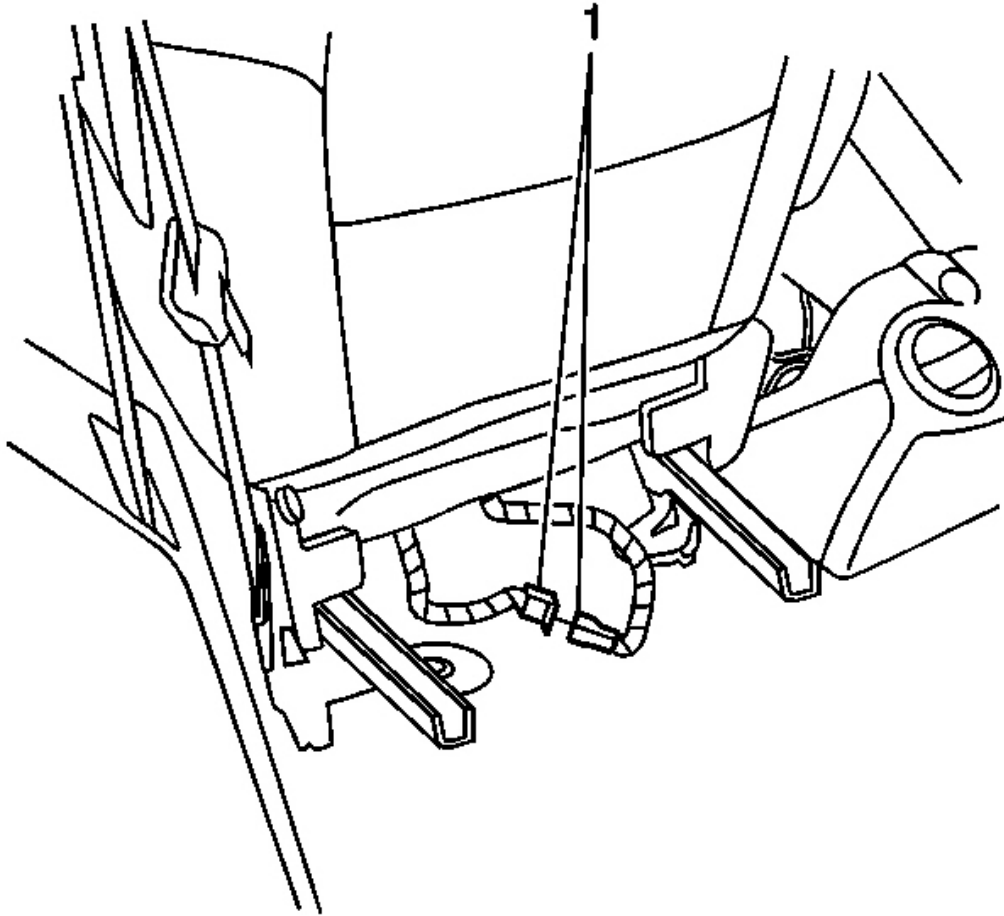
14. Remove the RH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Right** in Instrument Panel, Gages, and Console.
15. Remove the CPA (2) from the instrument panel (I/P) module connector (1).
16. Disconnect the I/P module connector (1).



**Fig. 39: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

**Courtesy of GENERAL MOTORS CORP.**

17. Remove the CPA from the right SIS and pretensioner harness connectors (4).
18. Disconnect the SIS and pretensioner wiring harness connectors (4).

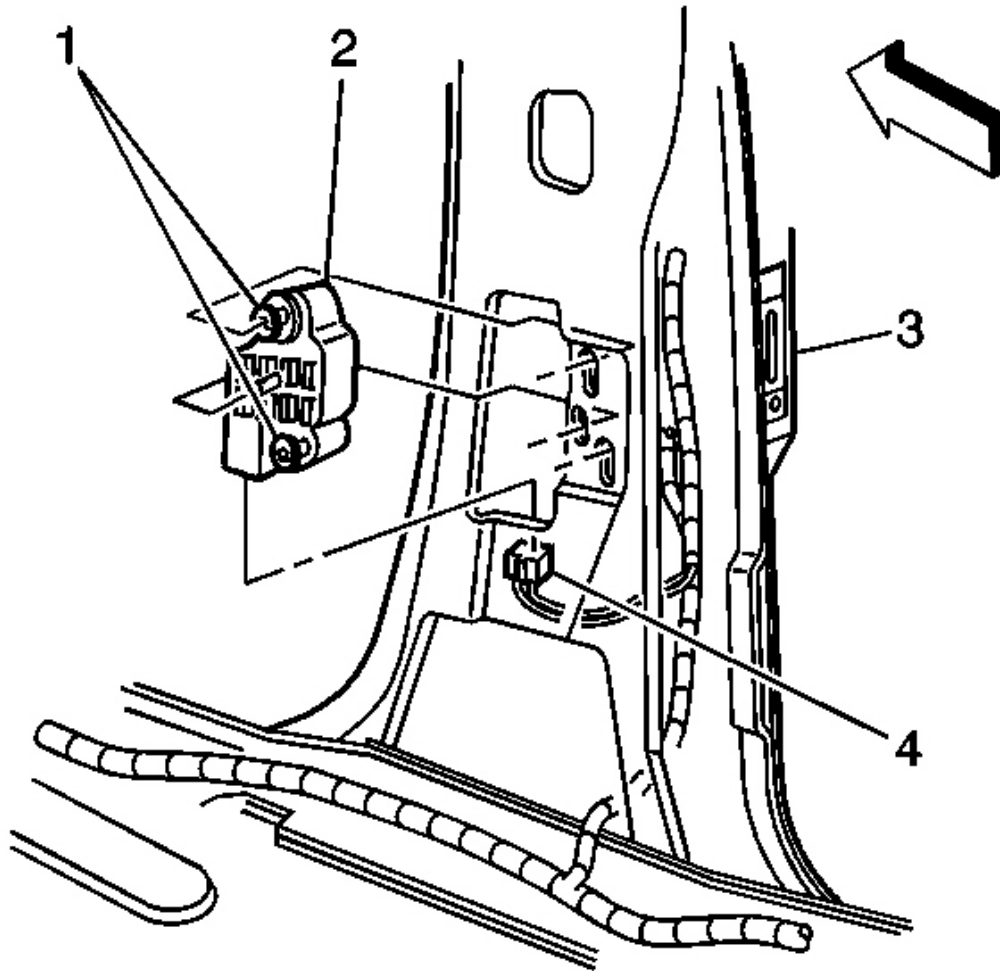


**Fig. 40: View Of Deployment Harness At Side Impact Module**  
**Courtesy of GENERAL MOTORS CORP.**

19. Remove the CPA from the RF/driver side impact module connector (1) which is located under the passenger seat.
20. Disconnect the vehicle harness connector from the RF side impact module connector (1).

**Enabling Procedure**

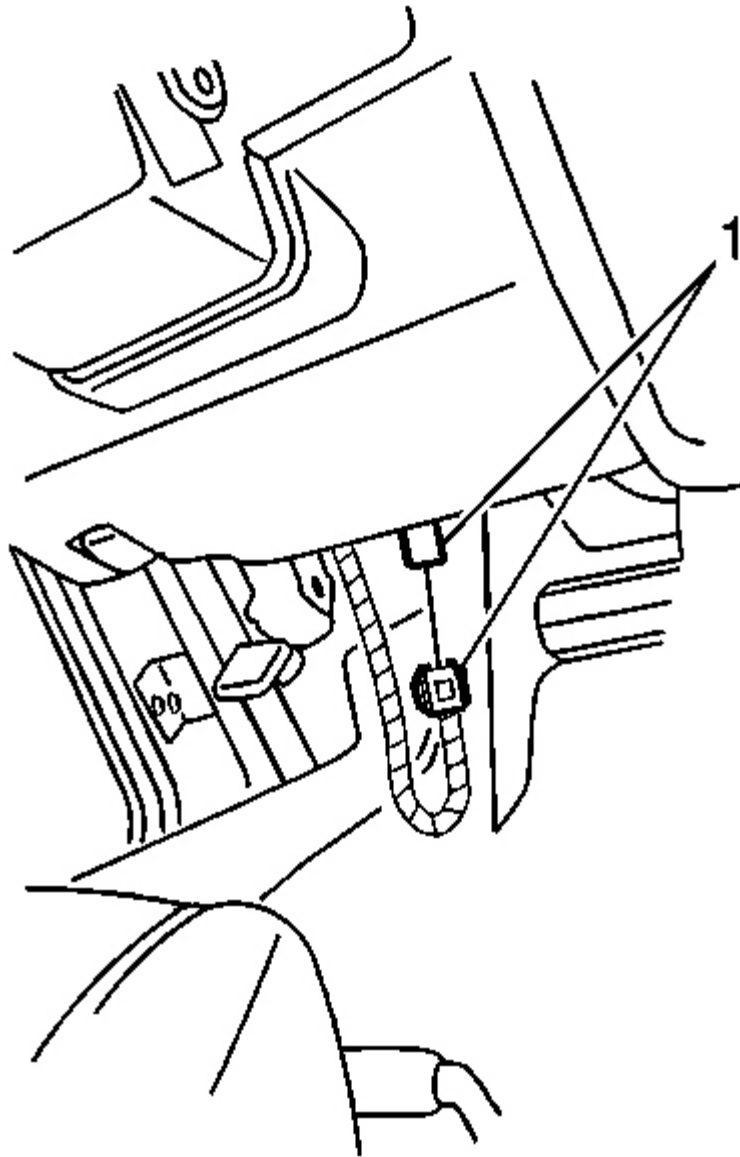
1. Remove the key from the ignition.
2. When enabling the side impact module - RF proceed to step 13, if the entire SIR system needs to be enable then go to step 3.



**Fig. 41: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

**Courtesy of GENERAL MOTORS CORP.**

3. Connect the CPA to the left SIS and pretensioner harness connectors (4), if equipped.
4. Install the CPA (2) to the SIS and pretensioner harness connectors (3).

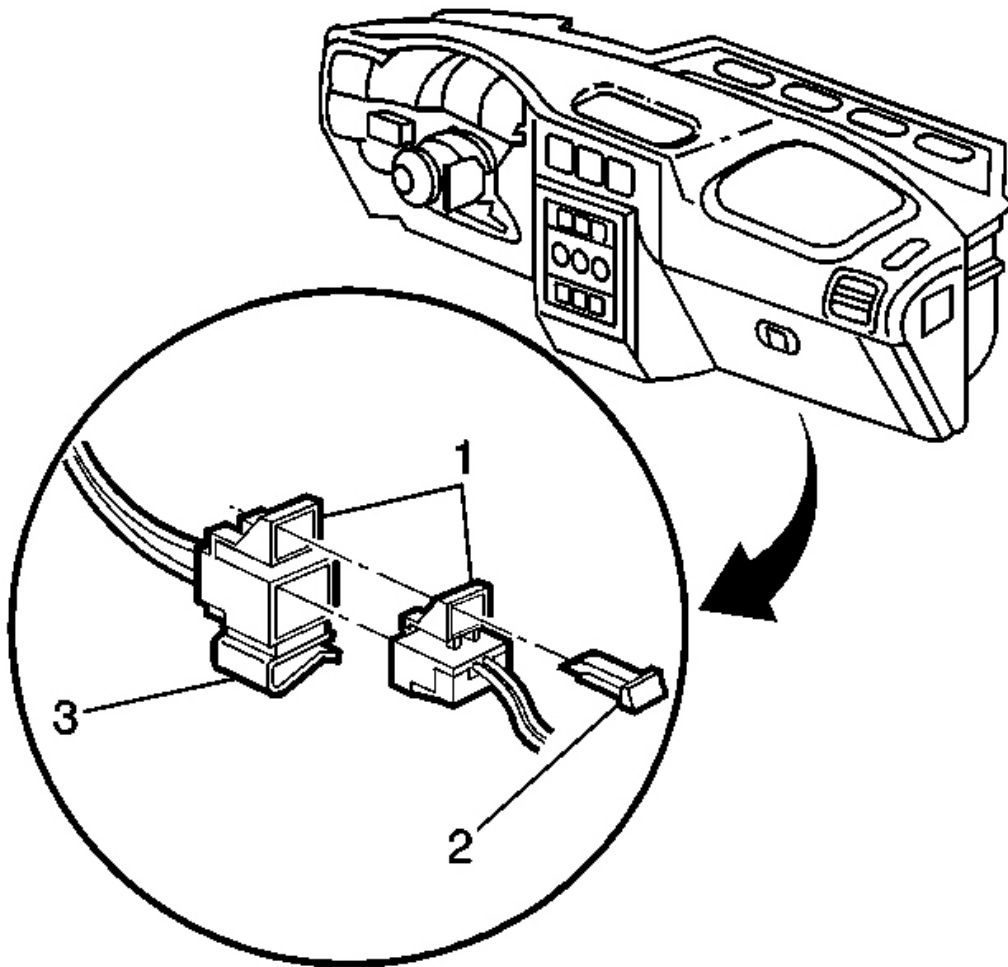


**Fig. 42: Locating Inflatable Restraint Steering Wheel Module Coil Connector**  
**Courtesy of GENERAL MOTORS CORP.**

5. Connect the steering wheel module coil connector (1).
6. Install the CPA to the steering wheel module coil connector (1) located at the base of the

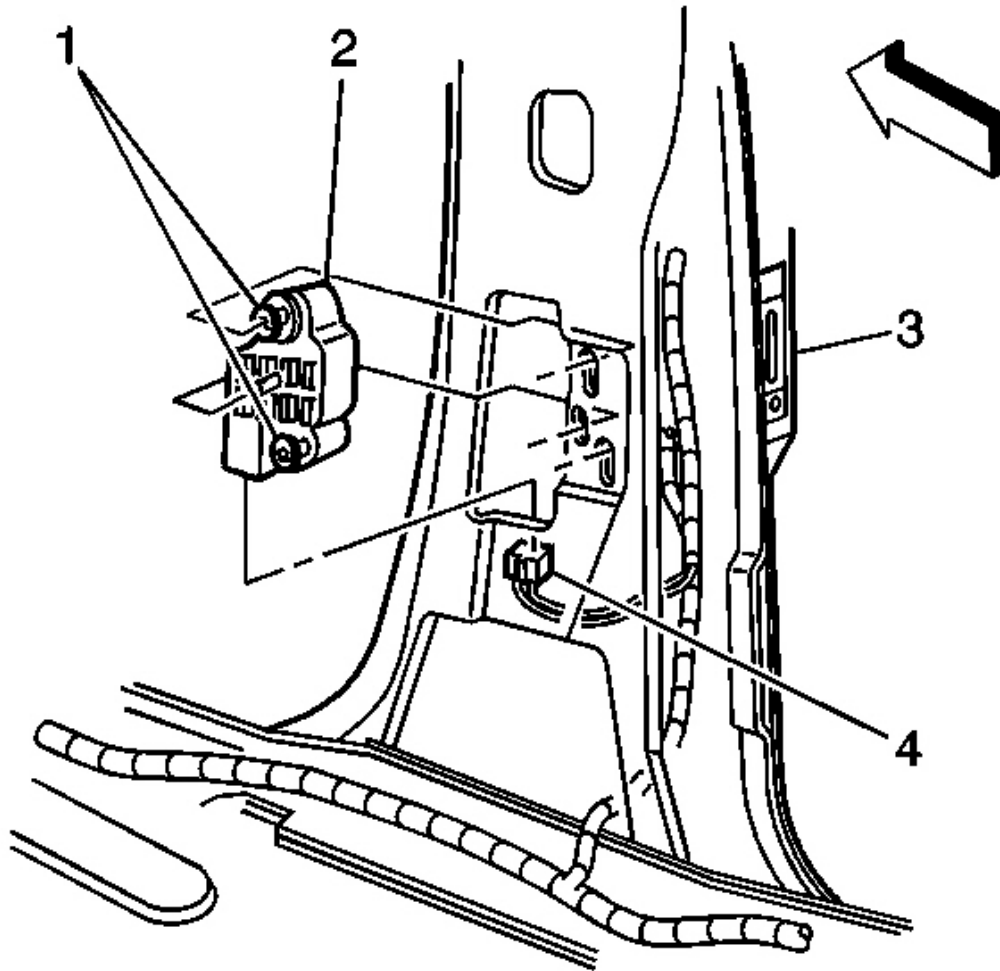
steering column.

7. Install the LH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Left** in Instrument Panel, Gages, and Console.



**Fig. 43: Identifying Inflatable Restraint IP Module Connector**  
Courtesy of GENERAL MOTORS CORP.

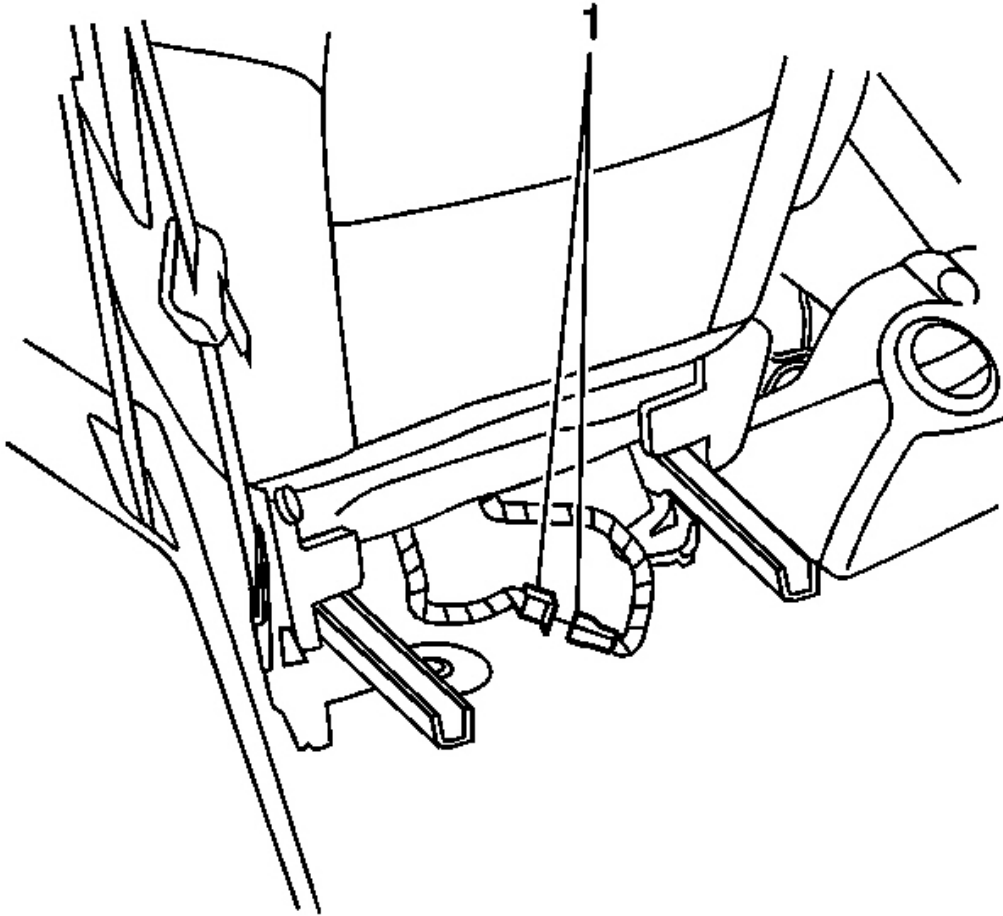
8. Connect the I/P module connector (1).
9. Install the CPA (2) to the I/P module connector (1).
10. Install the RH insulator panel. Refer to **Closeout/Insulator Panel Replacement - Right** in Instrument Panel, Gages, and Console.



**Fig. 44: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

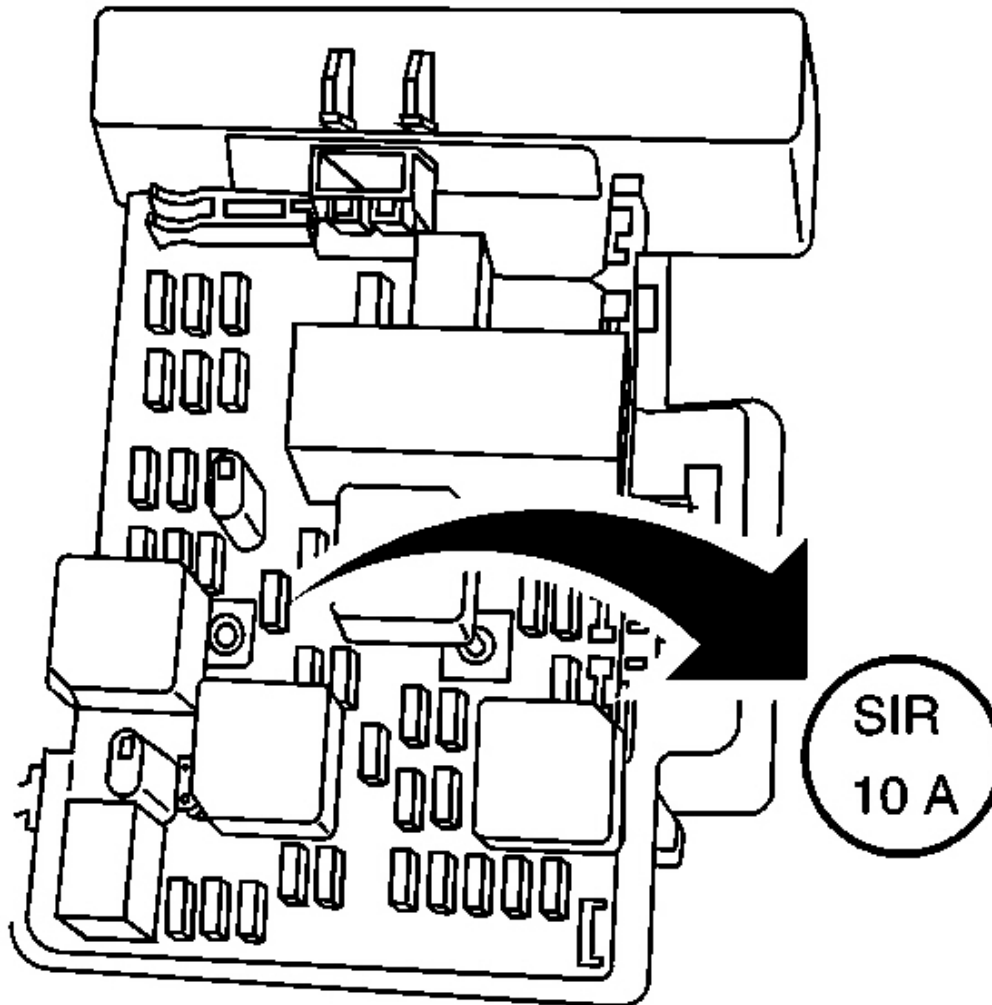
**Courtesy of GENERAL MOTORS CORP.**

11. Connect the right SIS and pretensioner harness connectors (4).
12. Install the CPA (2) to the SIS and pretensioner harness connectors (4).



**Fig. 45: View Of Deployment Harness At Side Impact Module**  
**Courtesy of GENERAL MOTORS CORP.**

13. Connect the vehicle harness connector to the RF side impact module connector (1).
14. Install the CPA to the RF side impact module yellow connector (1).



**Fig. 46: Locating SIR Fuse**  
**Courtesy of GENERAL MOTORS CORP.**

15. Install the SIR Fuse.
16. Install the console accessory wiring junction block access hole cover.
17. Use caution while reaching in and turn the ignition switch to the ON position.

The AIR BAG indicator will flash then turn OFF.

18. Perform the Diagnostic System Check - Vehicle if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - Vehicle** in Vehicle DTC Information.

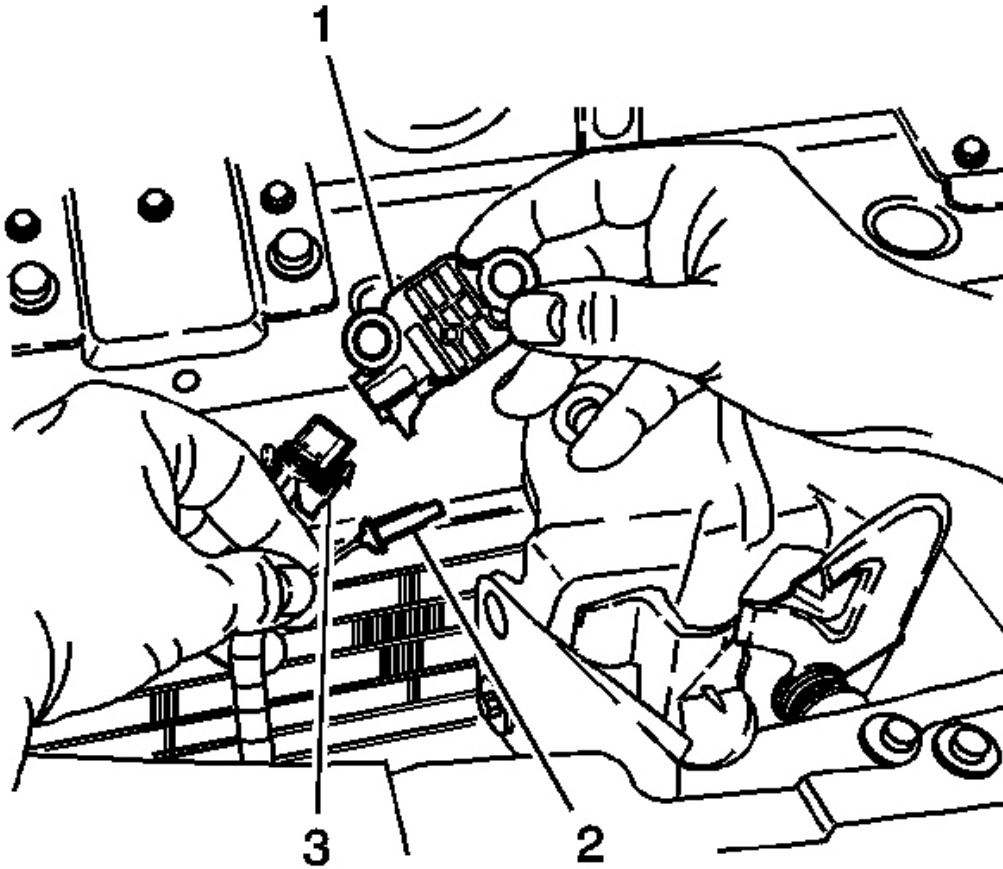
## INFLATABLE RESTRAINT FRONT END SENSOR REPLACEMENT

### Removal Procedure

**CAUTION:** Do not strike or jolt the inflatable restraint front end sensor. Before applying power to the front end sensor make sure that it is securely fastened. Failure to observe the correct installation procedure could cause SIR deployment, personal injury, or unnecessary SIR system repairs.

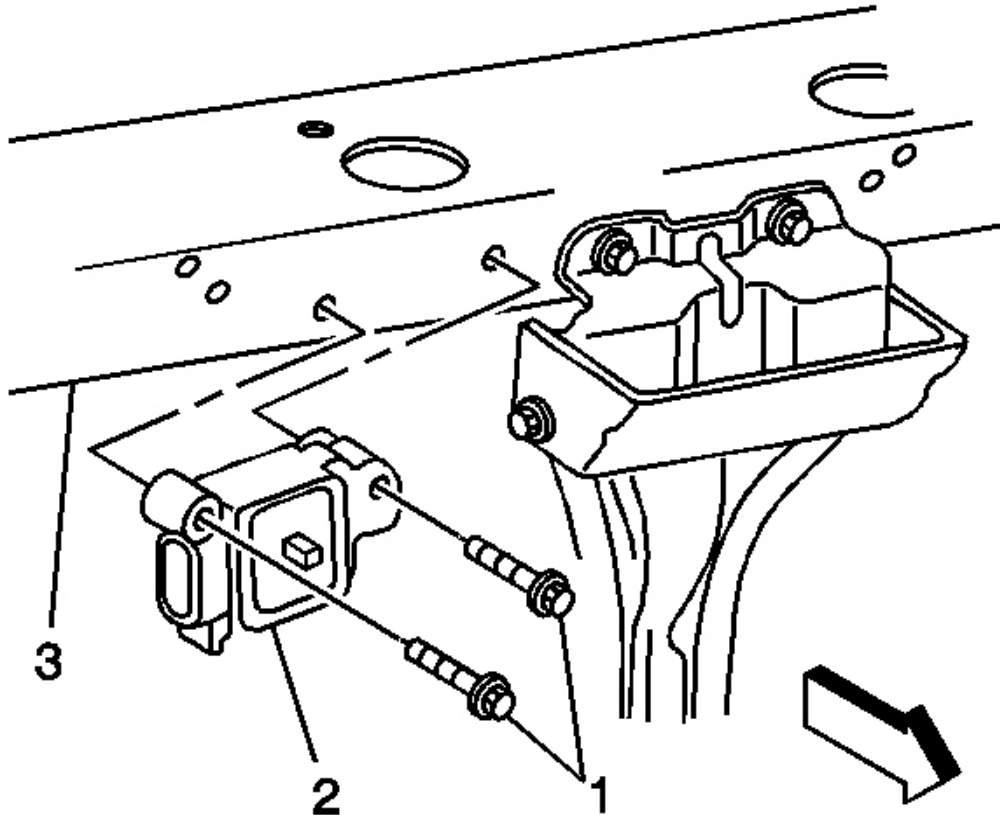
**CAUTION:** Refer to **SIR Caution** in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 1**.
2. Remove the grille. Refer to **Fascia Grille Replacement** in Bumpers.
3. Remove the retainers that hold the upper front bumper fascia to the radiator support.
4. Pull the fascia from the radiator support to gain access to the sensor bolts.



**Fig. 47: View Of Sensor, CPA & Yellow Sensor Harness Connector**  
Courtesy of GENERAL MOTORS CORP.

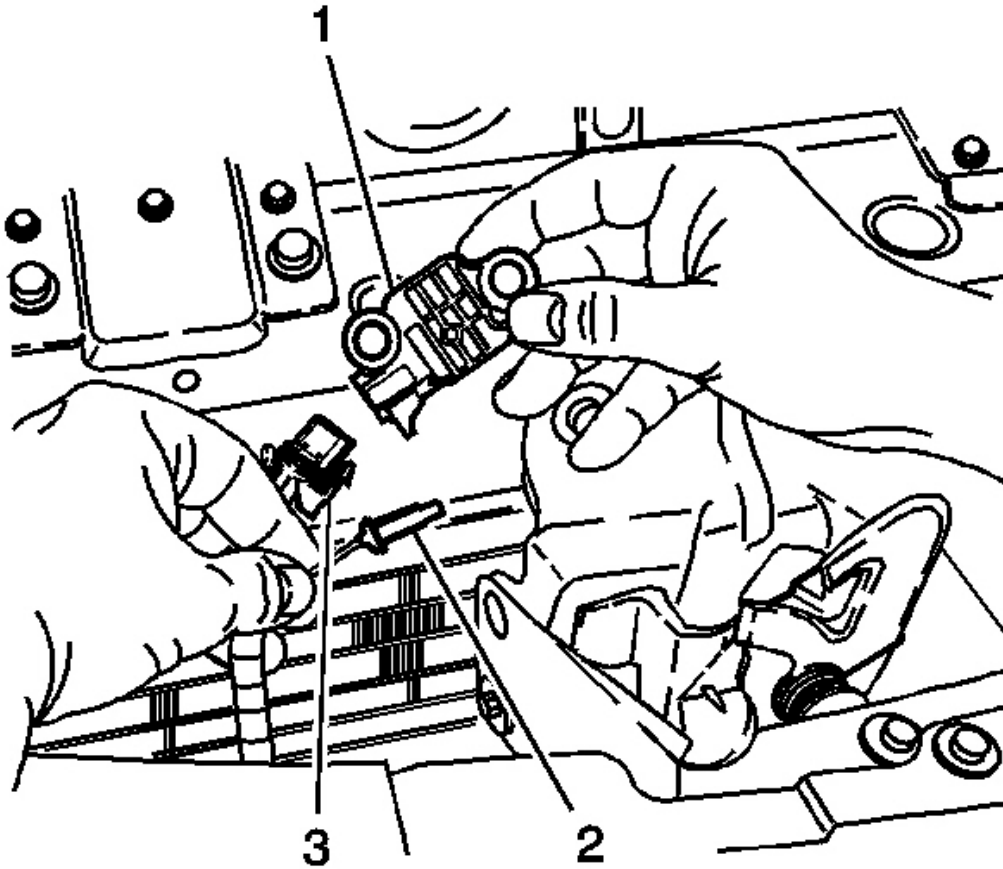
5. Remove the orange connector position assurance (CPA) (2) from the yellow sensor harness connector (3).
6. Disconnect the harness connector from the sensor (1).



**Fig. 48: Inflatable Restraint Front End Sensor Bolts**  
**Courtesy of GENERAL MOTORS CORP.**

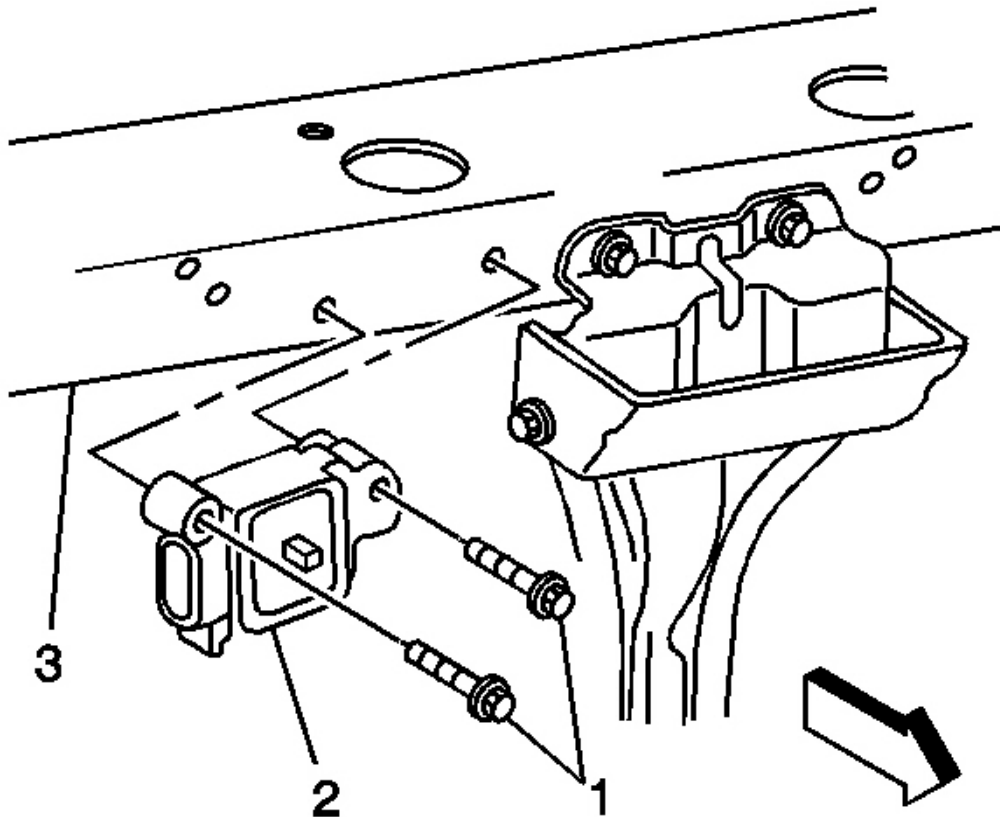
7. Remove the sensor bolts (1).
8. Remove the sensor (2) from the upper radiator core support (3).

**Installation Procedure**



**Fig. 49: View Of Sensor, CPA & Yellow Sensor Harness Connector**  
Courtesy of GENERAL MOTORS CORP.

1. Remove any dirt, grease, and other contaminants from the mounting surface.
2. Connect the sensor harness connector (3) to the sensor (1).
3. Install the orange CPA (2) into the yellow sensor harness connector (3).



**Fig. 50: Inflatable Restraint Front End Sensor Bolts**  
Courtesy of GENERAL MOTORS CORP.

4. Position the sensor on the upper radiator core support (3).
5. Point the arrow on the sensor toward the front of the vehicle.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

6. Install the sensor bolts (1).

**Tighten:** Tighten the bolts to 9 N.m (80 lb in).

7. Secure the fascia to the radiator support.
8. Install the retainers that hold the upper front bumper fascia to the radiator support.

9. Install the grille. Refer to **Fascia Grille Replacement** in Bumpers.
10. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 1**.

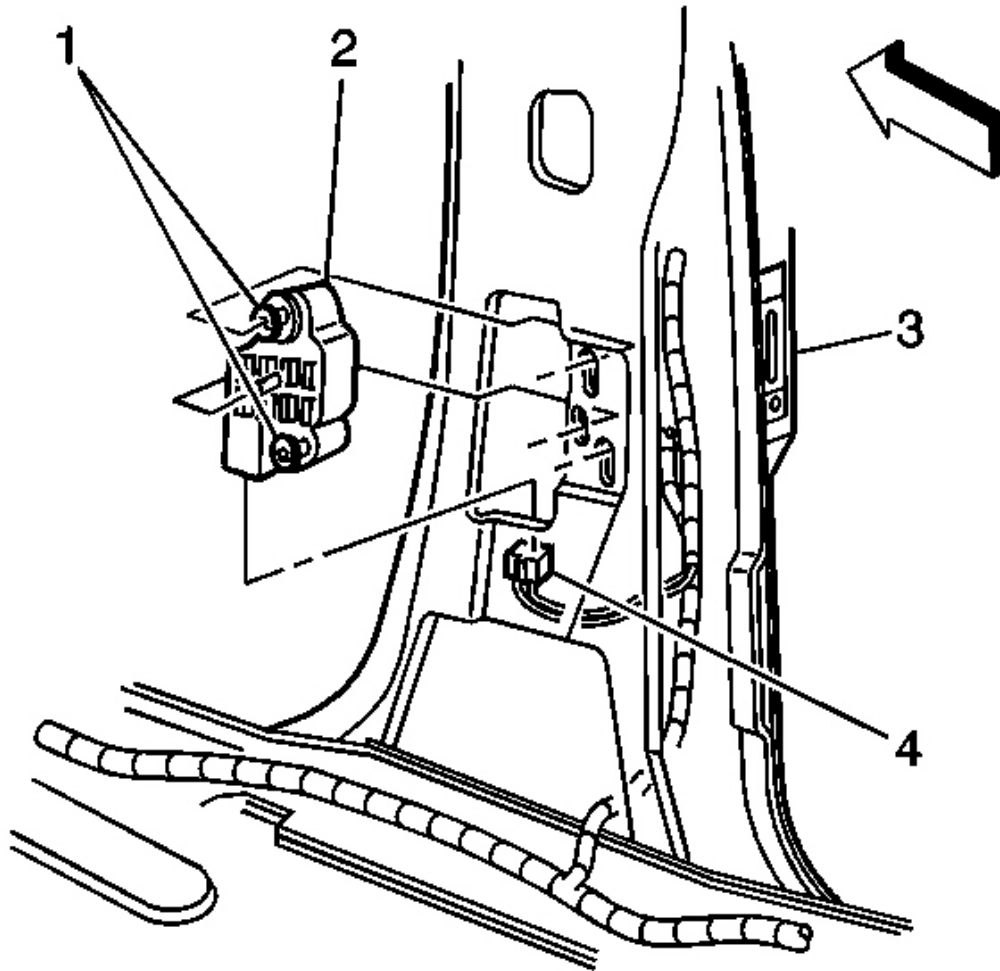
## INFLATABLE RESTRAINT SIDE IMPACT SENSOR REPLACEMENT

### Removal Procedure

**CAUTION:** Do not strike or jolt the inflatable restraint side impact sensor (SIS). Before applying power to the SIS make sure that it is securely fastened. Failure to observe the correct installation procedures could cause SIR deployment, personal injury, or unnecessary SIR system repairs.

**CAUTION:** Refer to **SIR Caution** in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 6**.
2. Remove the center pillar lower trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.

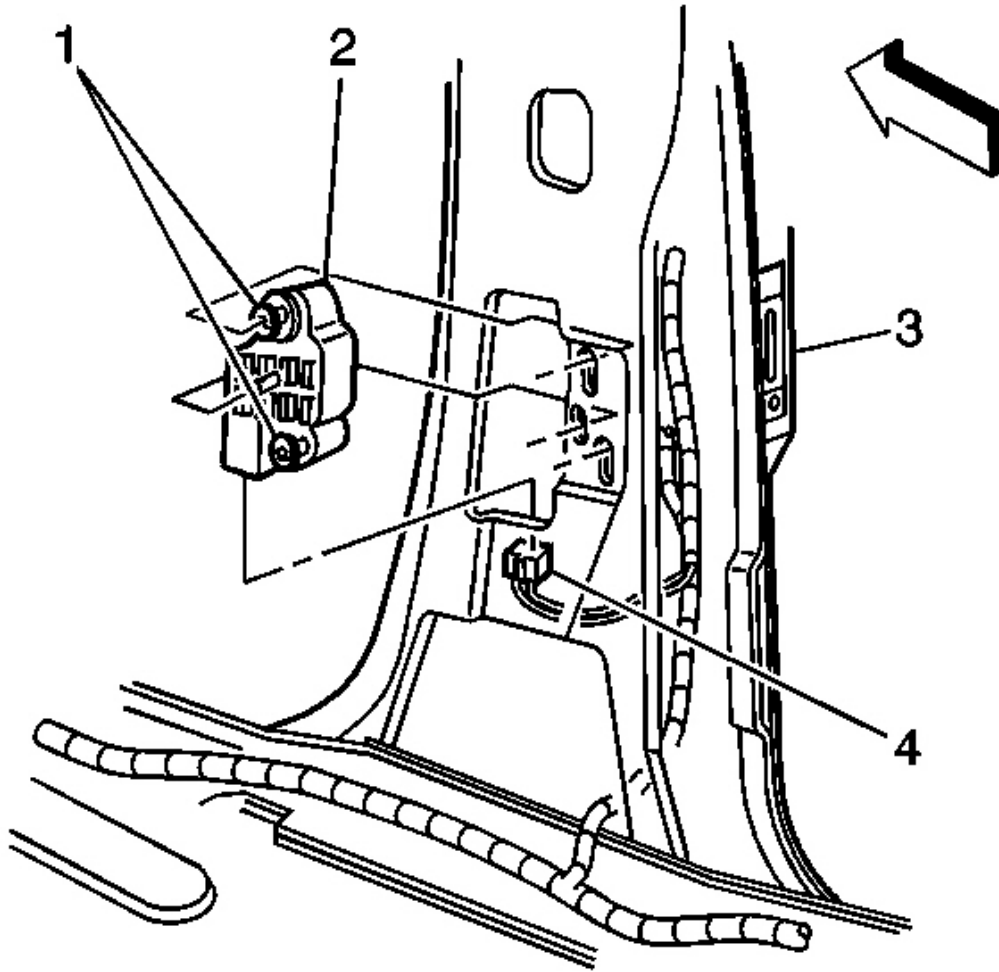


**Fig. 51: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

**Courtesy of GENERAL MOTORS CORP.**

3. Remove the connector position assurance (CPA) from the yellow 2-way harness connector (4) on the inflatable restraint side impact sensor.
4. Disconnect the wiring harness connector (4) from the side impact sensor.
5. Loosen the 2 fasteners (1) on the side impact sensor.
6. Remove the side impact sensor (2) from the center pillar.

## Installation Procedure



**Fig. 52: View Of Inflatable Restraint Side Impact Sensor And Pretensioner Wiring Harness Connectors**

Courtesy of GENERAL MOTORS CORP.

1. Remove any dirt, grease, and other contaminants from the mounting surface.
2. Install the inflatable restraint side impact sensor (2) to the center pillar.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

3. Tighten the 2 fasteners (1) to the side impact sensor.

**Tighten:** Tighten the fasteners to 10 N.m (89 lb in).

4. Connect the yellow 2-way harness connector (4) to the side impact sensor.
5. Install the CPA to the yellow 2-way connector (4).
6. Install the center pillar lower trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
7. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 6**.

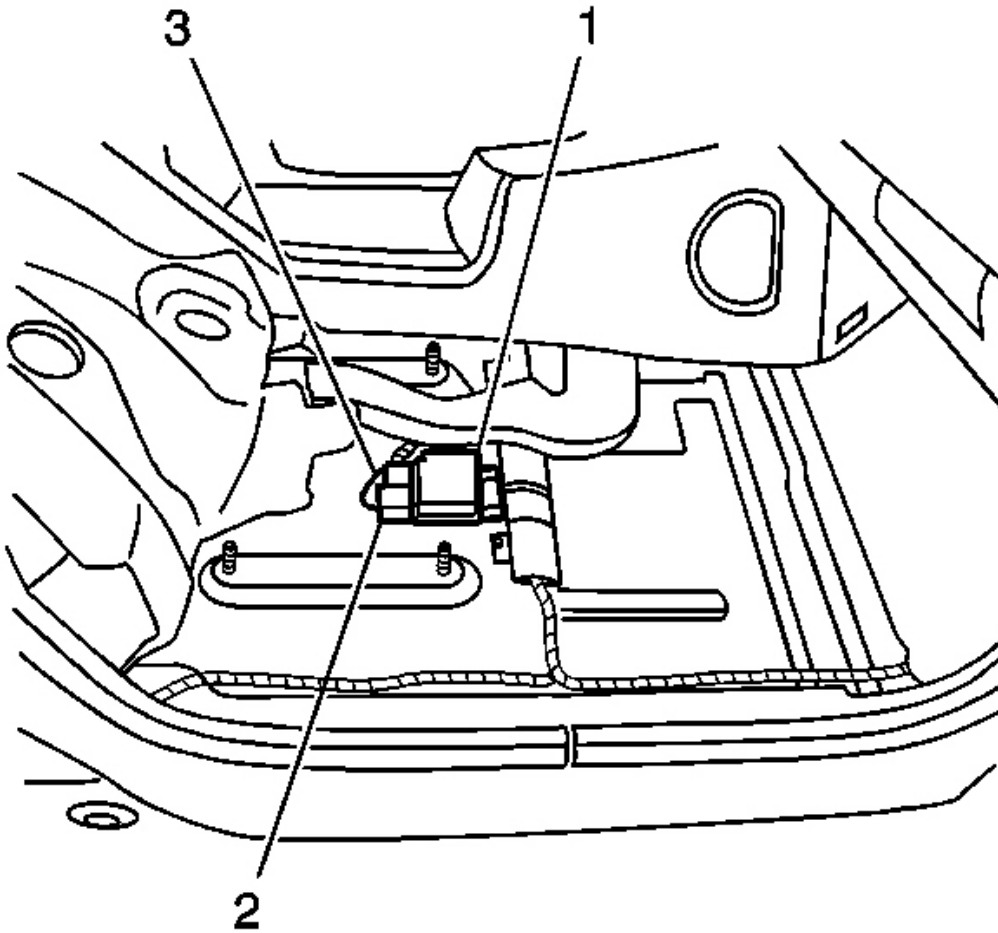
## INFLATABLE RESTRAINT SENSING AND DIAGNOSTIC MODULE REPLACEMENT

### Removal Procedure

**CAUTION:** Do not strike or jolt the inflatable restraint sensing and diagnostic module (SDM). Before applying power to the SDM, make sure that it is securely fastened with the arrow facing toward the front of the vehicle. Failure to observe the correct installation procedure could cause SIR deployment, personal injury, or unnecessary SIR system repairs.

**CAUTION:** Refer to **SIR Caution** in Cautions and Notices.

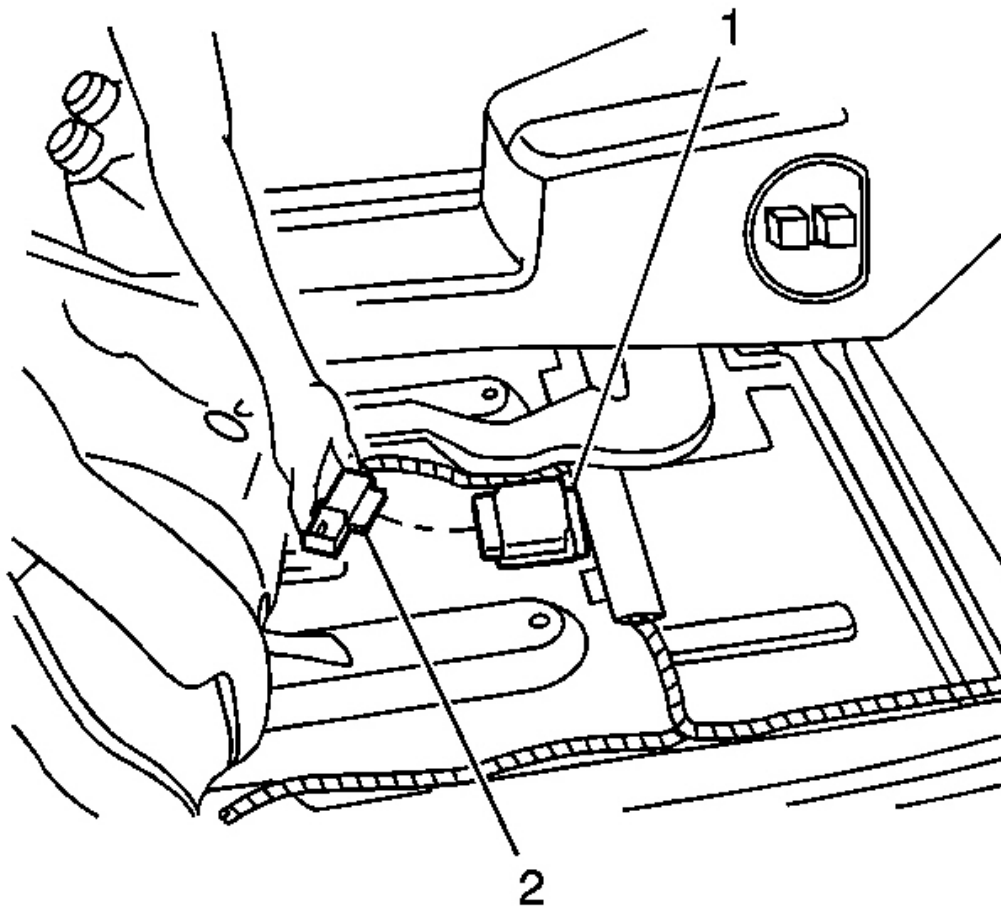
1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 9**.
2. Remove the passenger front seat. Refer to **Seat Replacement - Bucket** in Seats.
3. Remove the passenger front carpet retainer. Roll back the carpet.
4. Remove the right side cowl trim panel. Refer to **Trim Panel Replacement - Cowl Side** in Interior Trim.
5. Remove the right side insulator panel. Refer to **Closeout/Insulator Panel Replacement - Right** in Instrument Panel, Gages, and Console.



**Fig. 53: View Of Connector Position Assurance**

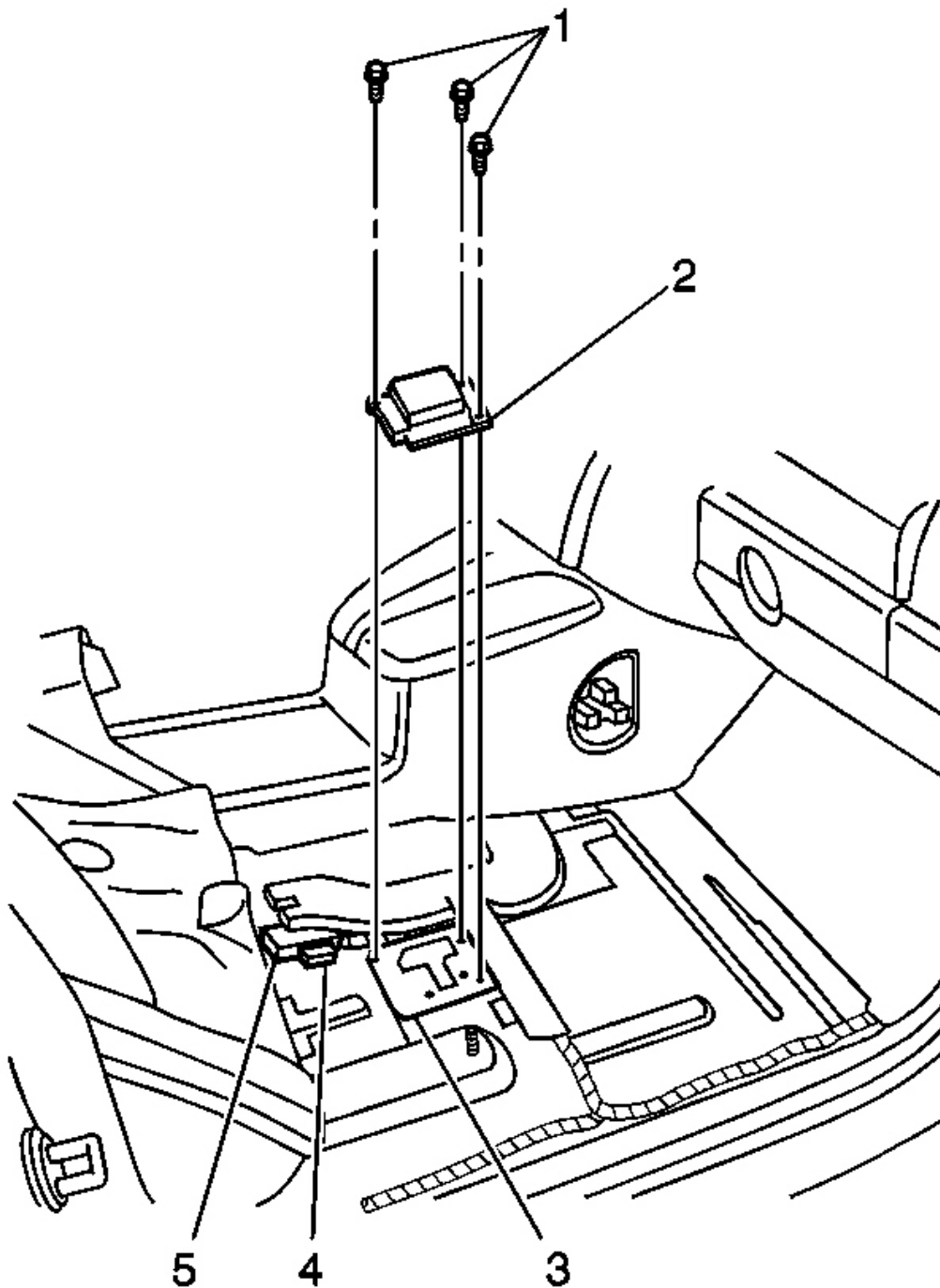
**Courtesy of GENERAL MOTORS CORP.**

6. Remove the connector position assurance (CPA) (3) from the sensing and diagnostic module (SDM) wiring harness connector (2) on the inflatable restraint.



**Fig. 54: Locating SDM Wiring Harness Connector**  
**Courtesy of GENERAL MOTORS CORP.**

7. Disconnect the SDM wiring harness connector (2) from the SDM (1).



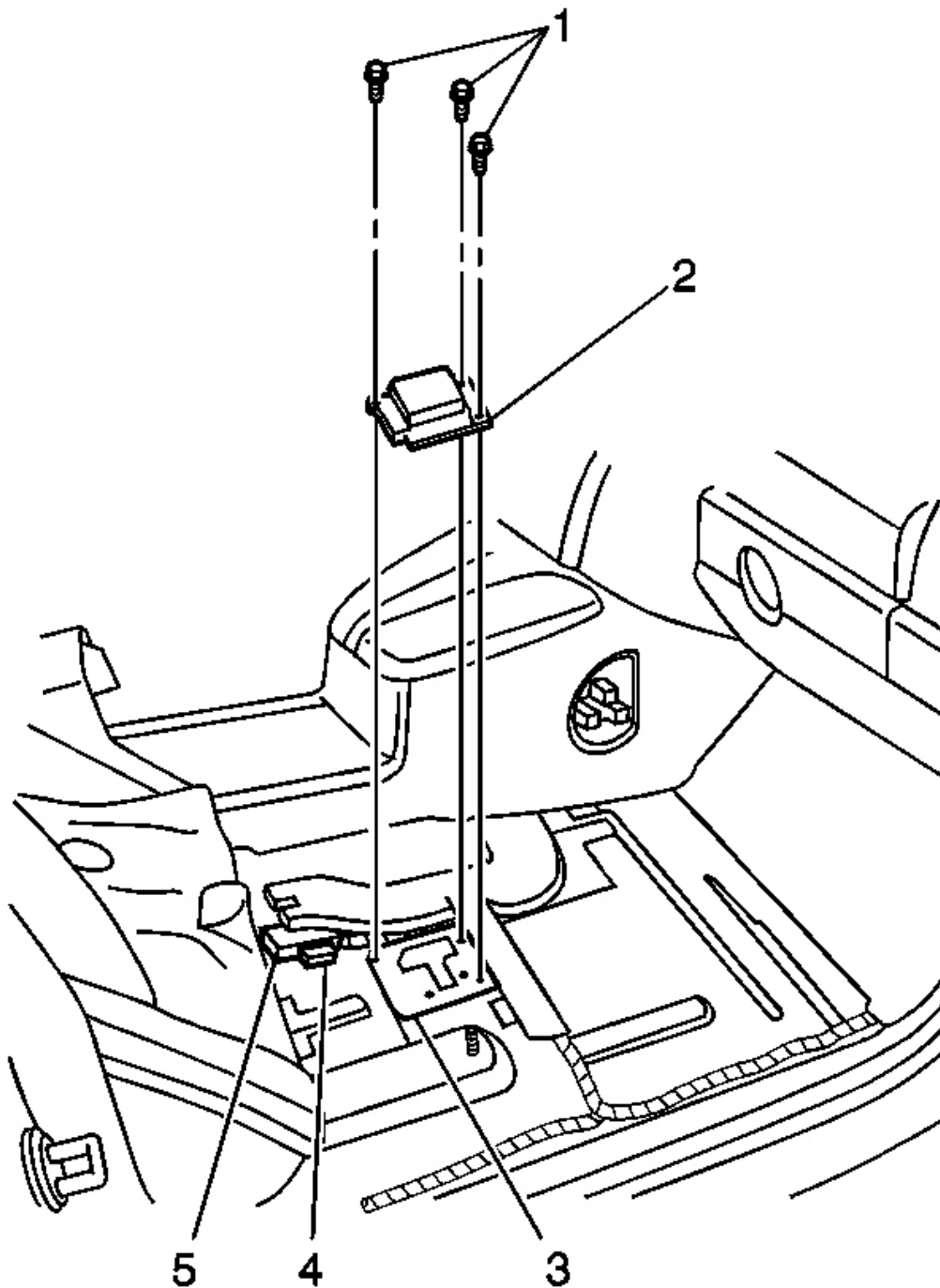
**Fig. 55: SDM Mounting Fasteners**  
Courtesy of GENERAL MOTORS CORP.

## 2006 Buick Rendezvous CX

2006 RESTRAINTS SIR - Rendezvous

8. Remove the SDM mounting fasteners (1).
9. Remove the SDM (2) from the vehicle.

### Installation Procedure



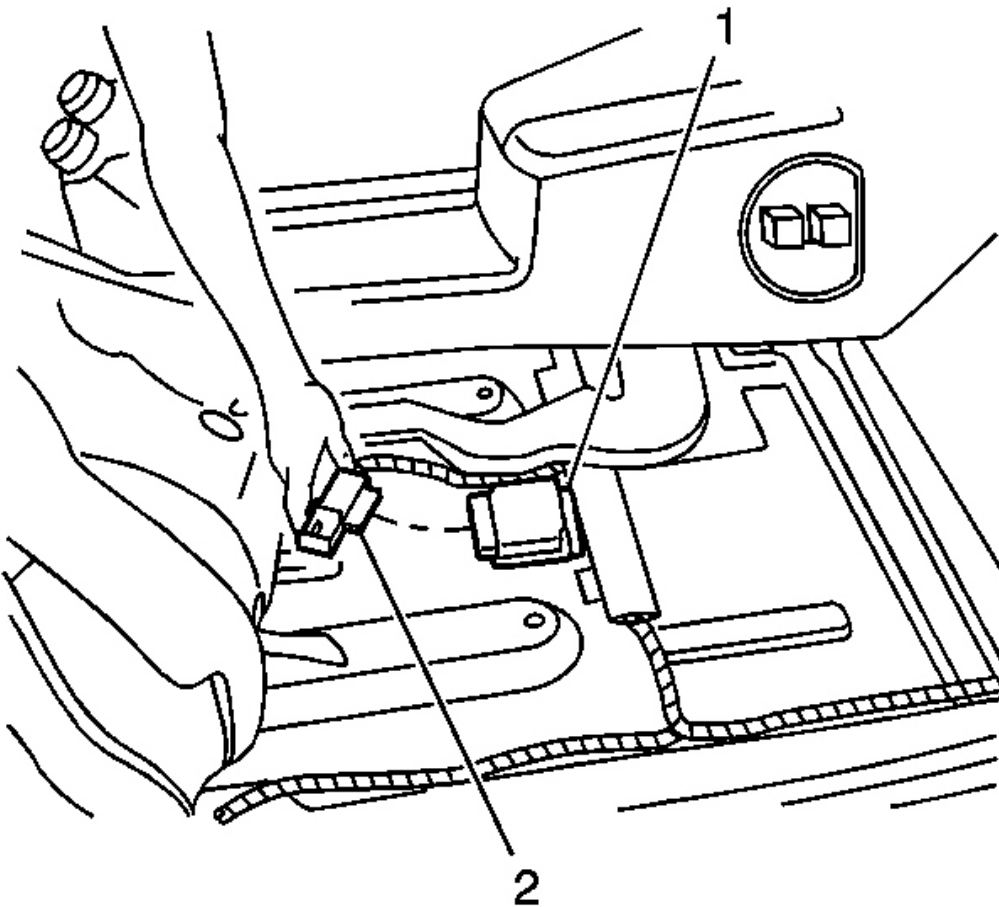
**Fig. 56: SDM Mounting Fasteners**  
Courtesy of GENERAL MOTORS CORP.

1. Remove any dirt, grease, and other contaminants from the mounting surface.
2. Install the SDM (2) horizontally to the vehicle.
3. Point the arrow on the SDM toward the front of the vehicle.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

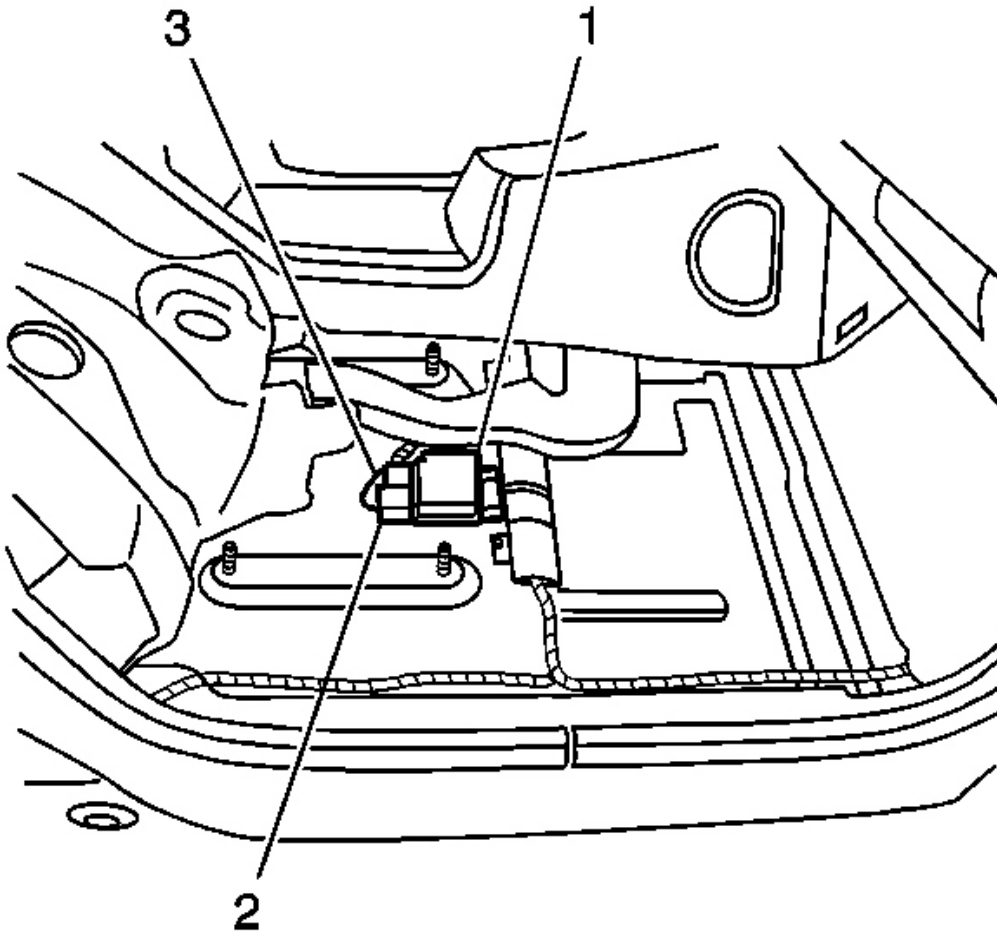
4. Install the SDM mounting fasteners (1).

**Tighten:** Tighten the fasteners to 10 N.m (89 lb in).



**Fig. 57: Locating SDM Wiring Harness Connector**  
Courtesy of GENERAL MOTORS CORP.

5. Install the SDM wiring harness connector (2) to the SDM (1).



**Fig. 58: View Of Connector Position Assurance**  
**Courtesy of GENERAL MOTORS CORP.**

6. Install the CPA (3) to the SDM wiring harness connector (2).
7. Place the carpet to cover the SDM. Install the carpet retainer.
8. Install the right side insulator panel. Refer to **Closeout/Insulator Panel Replacement - Right** in Instrument Panel, Gages, and Console.
9. Install the right side cowl trim panel. Refer to **Trim Panel Replacement - Cowl Side** in Interior Trim.

10. Install the passenger front seat. Refer to Seat Replacement - Bucket in Seats.
11. Enable the SIR system. Refer to SIR Disabling and Enabling Zone 9.

**IMPORTANT:** The AIR BAG indicator may remain ON after the SDM has been replaced. DTC B1001 may set requiring the SDM part number to be set in multiple modules. If the indicator remains ON after enabling the SIR system, perform the diagnostic system check and follow the steps thoroughly to ensure that the SDM is set properly.

12. Reprogram the BCM. Refer to Body Control Module (BCM) Programming/RPO Configuration in Computer/Integrating Systems.

## INFLATABLE RESTRAINT STEERING WHEEL MODULE REPLACEMENT

### Tools Required

**J 44298** Driver Air Bag Removal Tool. See Special Tools.

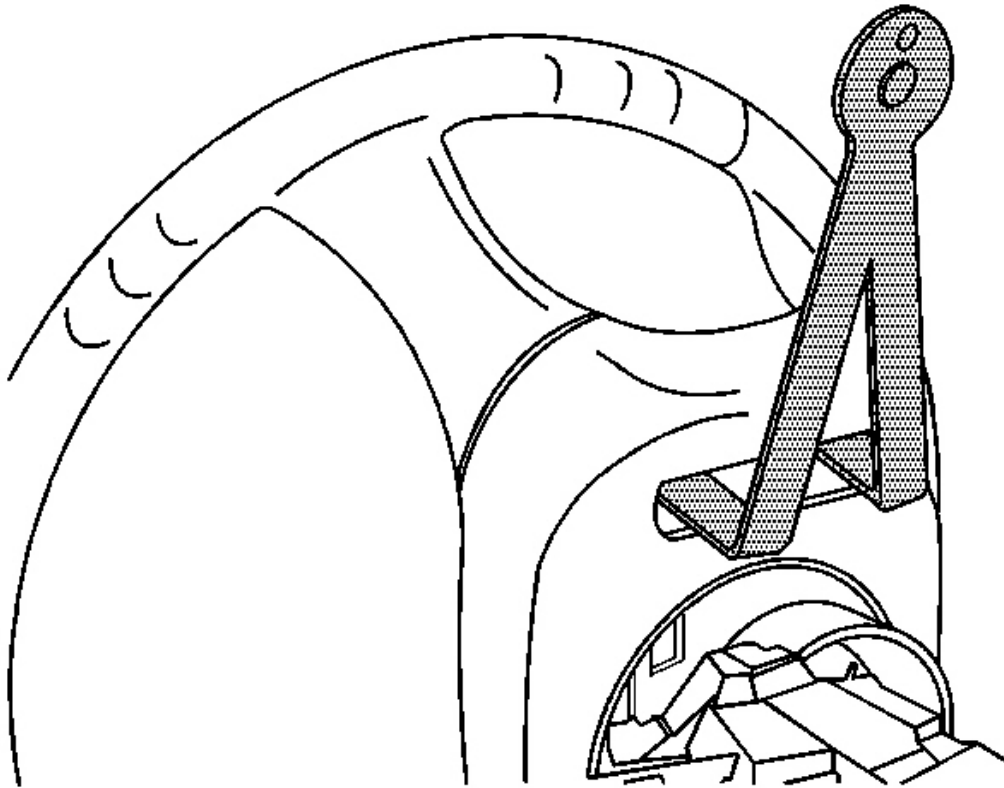
### Removal Procedure

**CAUTION:** Refer to SIR Inflator Module Handling and Storage Caution in Cautions and Notices.

**CAUTION:** A deployed dual stage inflator module will look the same whether one or both stages were used. Always assume a deployed dual stage inflator module has an active stage  
2. Improper handling or servicing can activate the inflator module and cause personal injury.

**CAUTION:** Refer to SIR Caution in Cautions and Notices.

1. Disable the SIR system. Refer to SIR Disabling and Enabling Zone 3.



**Fig. 59: Releasing Module Mounting Posts From Retainer**  
Courtesy of GENERAL MOTORS CORP.

2. On the back side of the steering wheel are 4 openings for removing the driver inflator module.

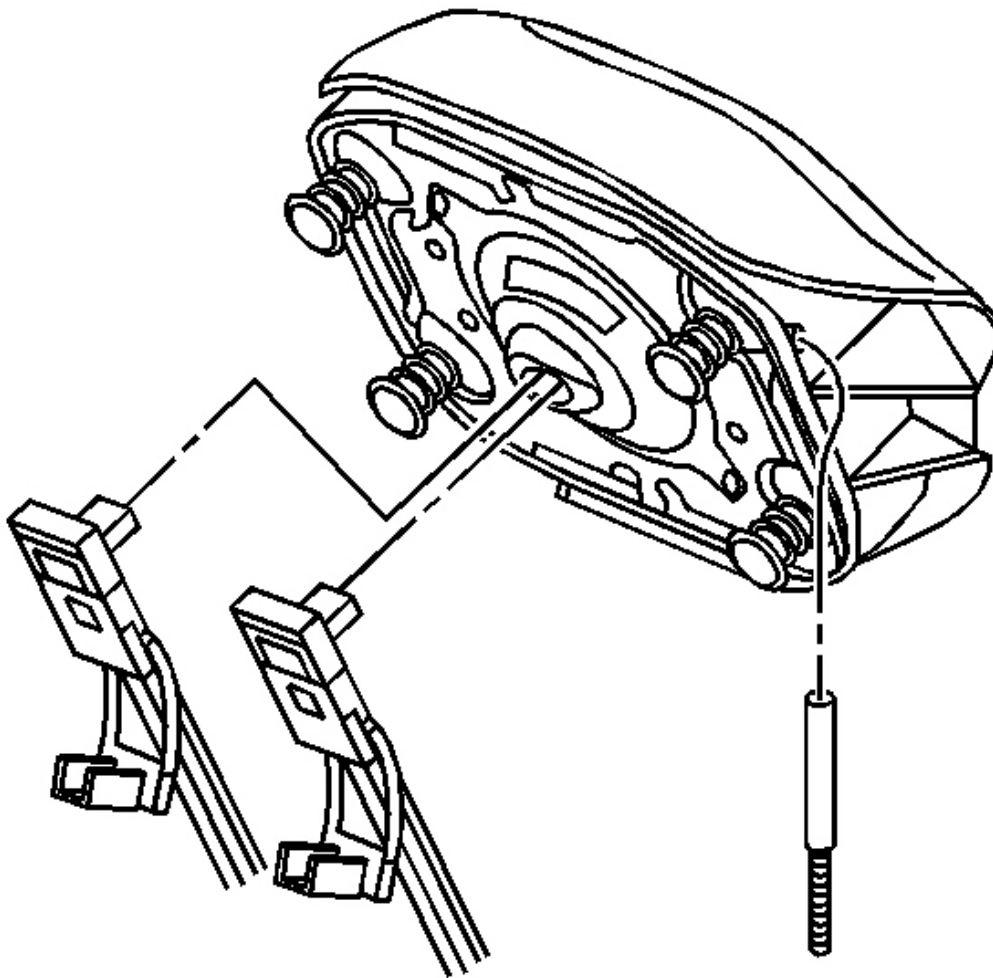
Place the steering wheel so that 2 of the openings are on top.

3. Adjust and install **J 44298** into 2 of the holes. See **Special Tools**.

**IMPORTANT: Seat the air bag removal tool all the way in to perform properly.**

4. Push the handle back towards the I/P, releasing the 2 spring-loaded fasteners at the same time.

5. Turn the steering wheel and open **J 44298** . See **Special Tools**. Use one of the tool fingers to remove the cruise control lever cover.
6. Place **J 44298** and insert into place around the cruise control lever and repeat the same steps for the other 2 openings. See **Special Tools**.
7. Pull the driver inflator module gently away from the steering wheel.

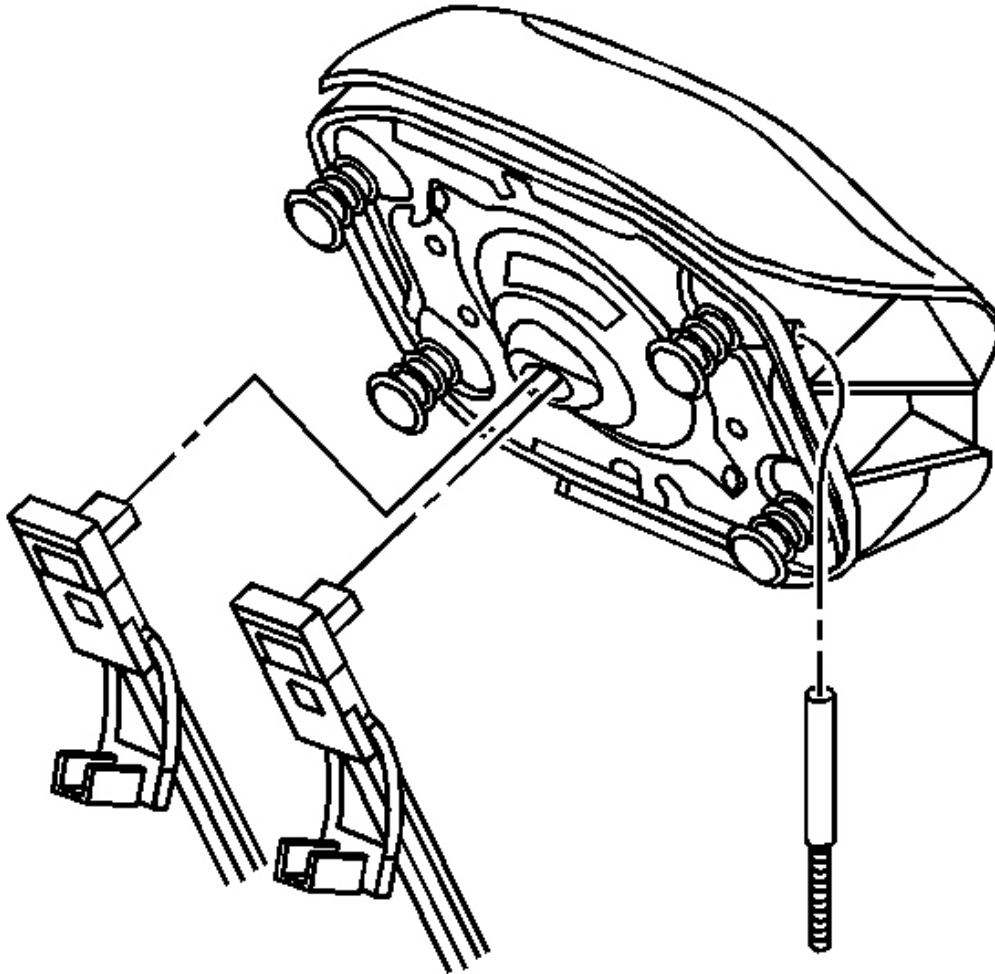


**Fig. 60: Locating Horn Ground/Contact Leads**  
**Courtesy of GENERAL MOTORS CORP.**

**IMPORTANT: Note the driver inflator wire routing positions, the redundant control routing positions, and the horn wire routing positions for the correct re-assembly.**

8. Remove the connector position assurance (CPA) and the electrical connector for the driver inflator module.
9. Remove the horn grounded lead from the threaded hole in the steering wheel.
10. Rotate the horn contact lead counterclockwise 1/4 turn.
11. Remove the horn contact lead from the steering column cam tower.
12. Remove the inflatable restraint module.
13. Fully deploy the module before disposal. If the module was replaced under warranty, fully deploy and dispose of the module after the required retention period. Refer to **Inflator Module Handling and Scrapping**.

#### **Installation Procedure**



**Fig. 61: Locating Horn Ground/Contact Leads**  
**Courtesy of GENERAL MOTORS CORP.**

1. Connect the horn ground lead into the lower left threaded hole in the steering wheel.
2. Connect the horn contact lead into the steering column cam tower.
3. Rotate the horn contact turn 1/4 turn clockwise to lock.
4. Connect the inflator module electrical connector and the CPA.

**IMPORTANT:** This vehicle is equipped with dual stage frontal air bags.  
Match the right color connector to the right color opening in

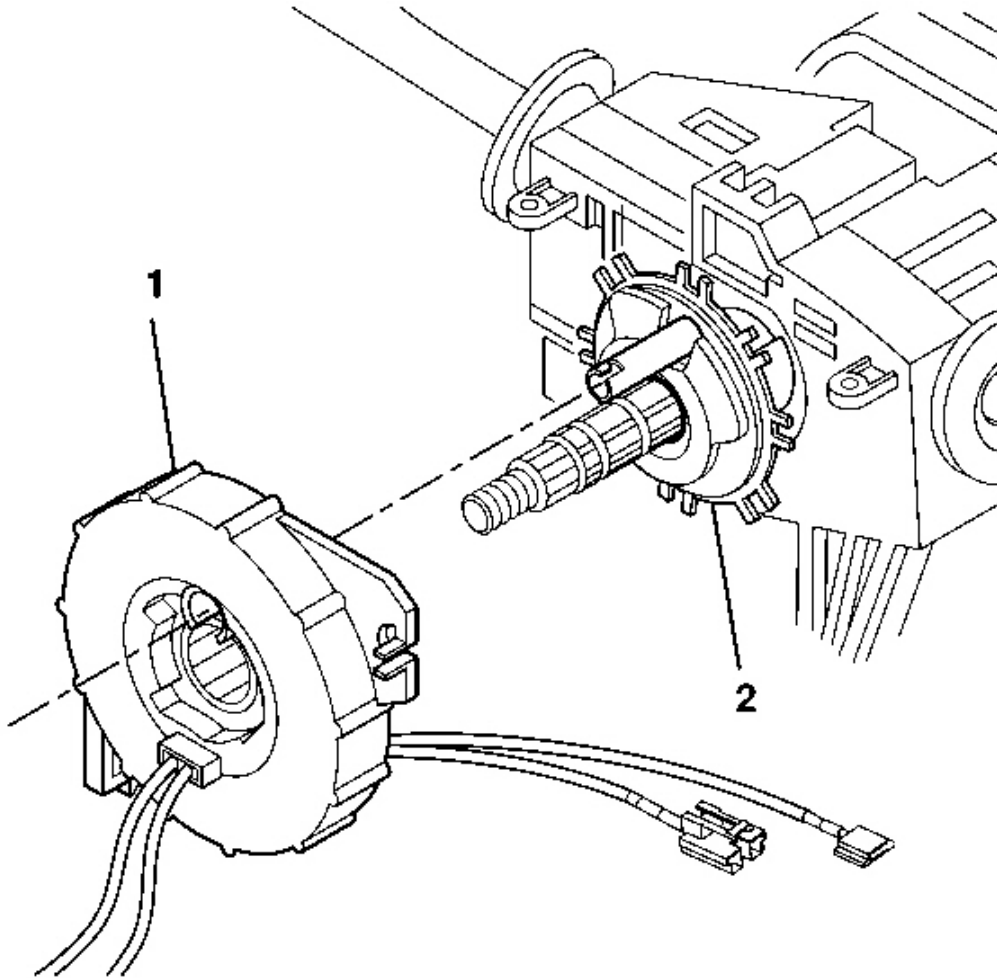
**the module. Route the driver inflator wires, the redundant control wires, and the horn wires correctly.**

5. Align the driver inflator module fasteners to the steering column fastener holes.
6. Push the driver inflator module firmly into the steering column in order to engage the fasteners.
7. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 3**.

## **INFLATABLE RESTRAINT STEERING WHEEL MODULE COIL REPLACEMENT**

### **Removal Procedure**

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 3**.

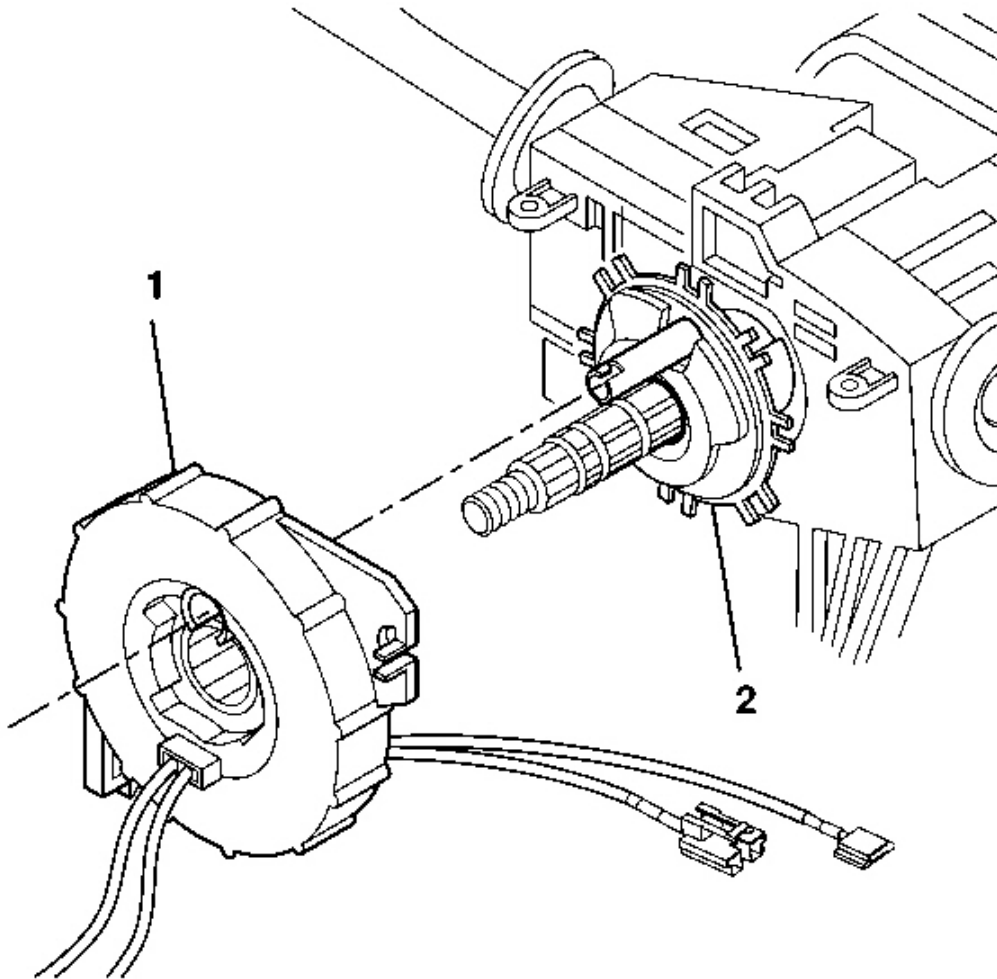


**Fig. 62: Aligning SIR Coil Assembly With Horn Tower**  
Courtesy of GENERAL MOTORS CORP.

2. Remove the inflatable restraint steering wheel module. Refer to **Inflatable Restraint Steering Wheel Module Replacement**.
3. Remove the steering wheel. Refer to **Steering Wheel Replacement** in Steering Wheel and Column.
4. Remove the upper and lower shrouds. Refer to **Steering Column Trim Covers Replacement** in Steering Wheel and Column.
5. Remove the wire harness straps from the steering wheel column wire harness.

6. Remove the inflatable restraint steering wheel module coil (1) from the steering shaft (2).

#### Installation Procedure



**Fig. 63: Aligning SIR Coil Assembly With Horn Tower**  
Courtesy of GENERAL MOTORS CORP.

1. Install the inflatable restraint steering wheel module coil (1) to the steering shaft (2).
2. Center the inflatable restraint steering wheel module coil. Refer to **Inflatable Restraint Steering Wheel Module Coil Centering** in Steering Wheel and Column.

3. Route the lower coil wire harness along the steering column jacket.
4. Install the wire harness straps to the steering column wire harness.
5. Install the upper and lower shrouds. Refer to **Steering Column Trim Covers Replacement** in Steering Wheel and Column.
6. Install the steering wheel. Refer to **Steering Wheel Replacement** in Steering Wheel and Column.
7. Install the inflatable restraint steering wheel module. Refer to **Inflatable Restraint Steering Wheel Module Replacement**.
8. Enable the SIR System. Refer to **SIR Disabling and Enabling Zone 3**.

## INFLATABLE RESTRAINT INSTRUMENT PANEL MODULE REPLACEMENT

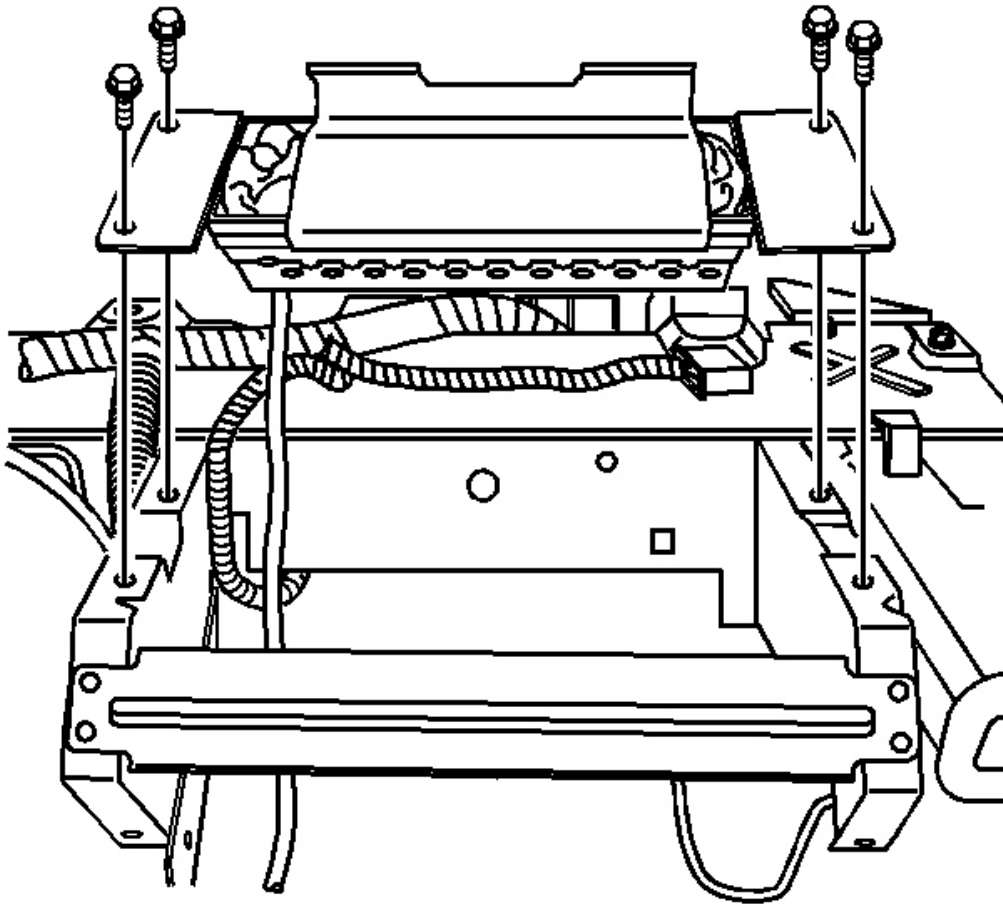
### Removal Procedure

**CAUTION:** Refer to **SIR Inflator Module Handling and Storage Caution** in Cautions and Notices.

**CAUTION:** A deployed dual stage inflator module will look the same whether one or both stages were used. Always assume a deployed dual stage inflator module has an active stage 2. Improper handling or servicing can activate the inflator module and cause personal injury.

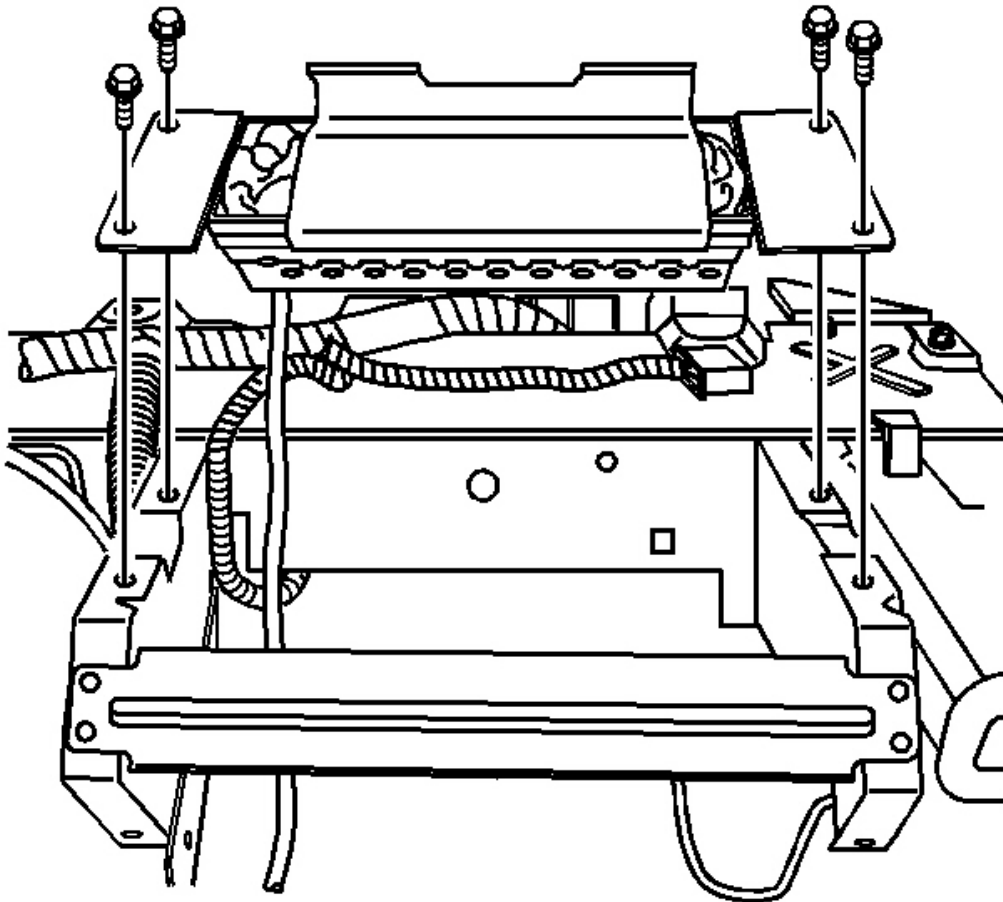
**CAUTION:** Refer to **SIR Caution** in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 5**.
2. Remove the trim pad from the instrument panel (I/P). Refer to **Instrument Panel (I/P) Assembly Replacement**.



**Fig. 64: Identifying Inflator Restraint Module Bracket Mounting Bolts**  
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the inflator module connector.
4. Remove the 4 bolts from the inflator restraint module bracket.
5. Remove the inflatable restraint module from the I/P.
6. Fully deploy the module before disposal. If the module was replaced under warranty, fully deploy and dispose of the module after the required retention period. Refer to **Inflator Module Handling and Scrapping**.



**Fig. 65: Identifying Inflator Restraint Module Bracket Mounting Bolts**  
Courtesy of GENERAL MOTORS CORP.

1. Install the inflatable restraint module to the instrument panel (I/P).

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

2. Install the I/P bolts to the inflatable restraint module.

**Tighten:** Tighten the bolts to 10 N.m (89 lb in).

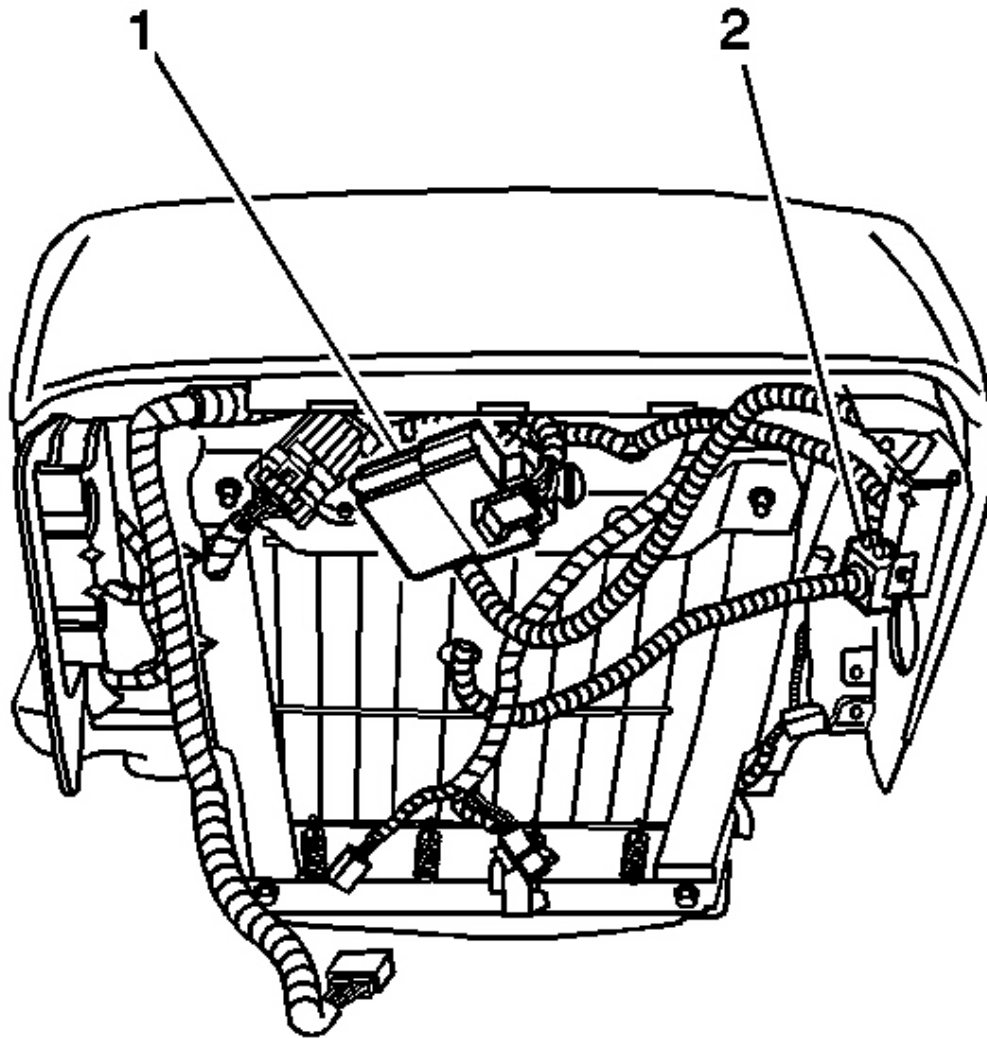
3. Connect the inflatable module connector.
4. Install the trim pad to the I/P. Refer to **Instrument Panel (I/P) Assembly Replacement**.

5. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 5**.

## **INFLATABLE RESTRAINT PASSENGER PRESENCE SYSTEM REPLACEMENT - FRONT**

### **Removal Procedure**

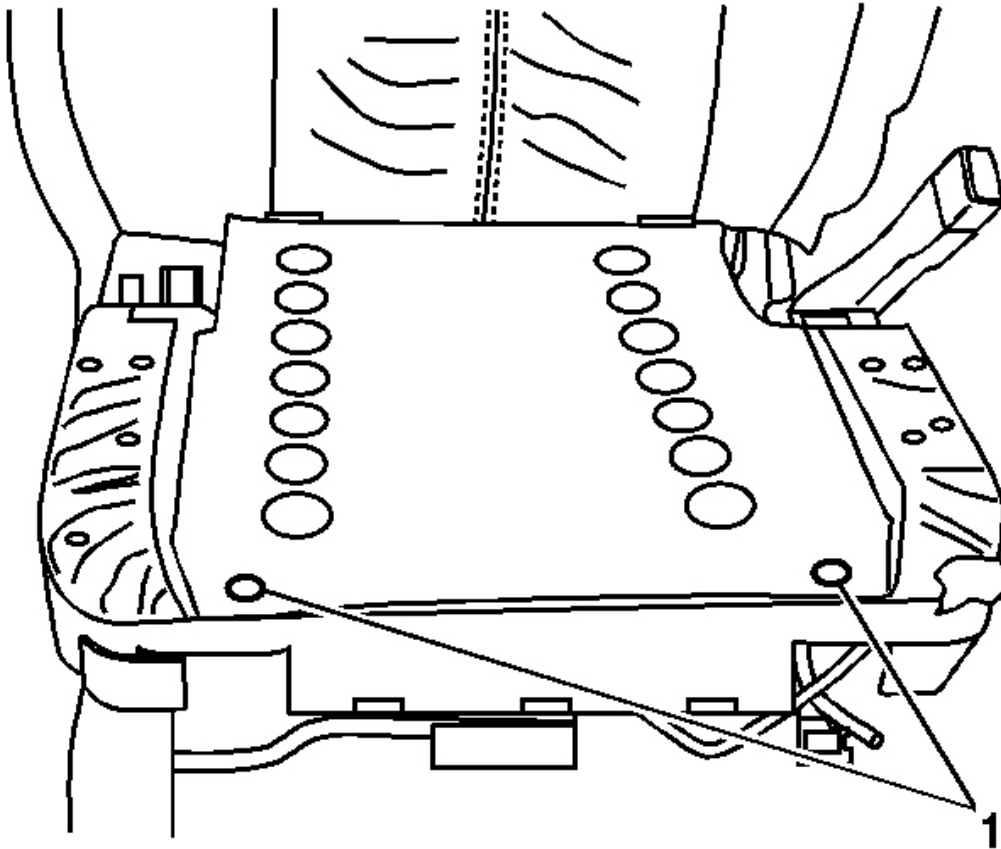
**CAUTION:** Replace the passenger presence system as a complete assembly to prevent possible injury to the occupant. The bladder, the pressure sensor, the seat cushion, and the control module are assembled and calibrated as a unit. Using only some of the components in the service kit will cause the passenger presence system to operate improperly.



**Fig. 66: View Of Electronic Control Unit & Pressure Switch**  
Courtesy of GENERAL MOTORS CORP.

1. Remove the seat cushion trim cover and pad. Refer to **Seat Cushion Cover Replacement - Front** in Seats.
2. Disconnect the electrical connectors.
3. Remove the bolts that retain the electronic control unit (ECU) (1) from the bottom of the passenger seat cushion frame.

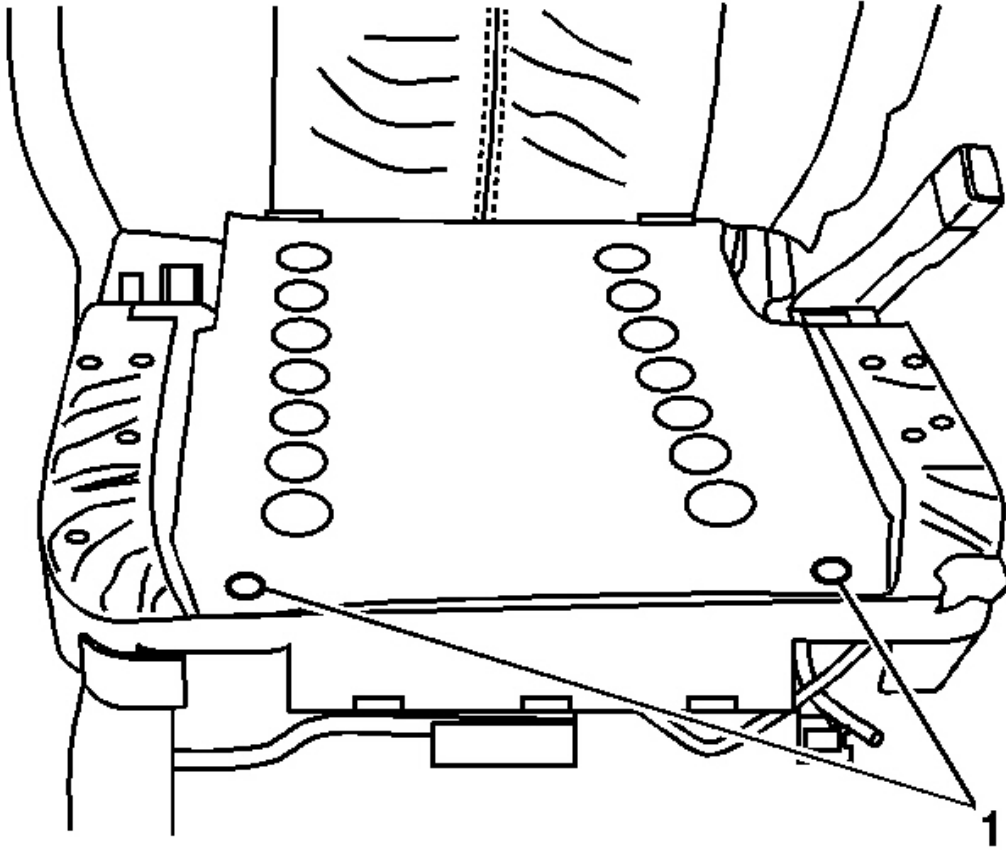
4. Remove the pressure switch (2) from the bottom of the passenger seat cushion frame.



**Fig. 67: Seat Cushion Frame Bladder Retainers**  
**Courtesy of GENERAL MOTORS CORP.**

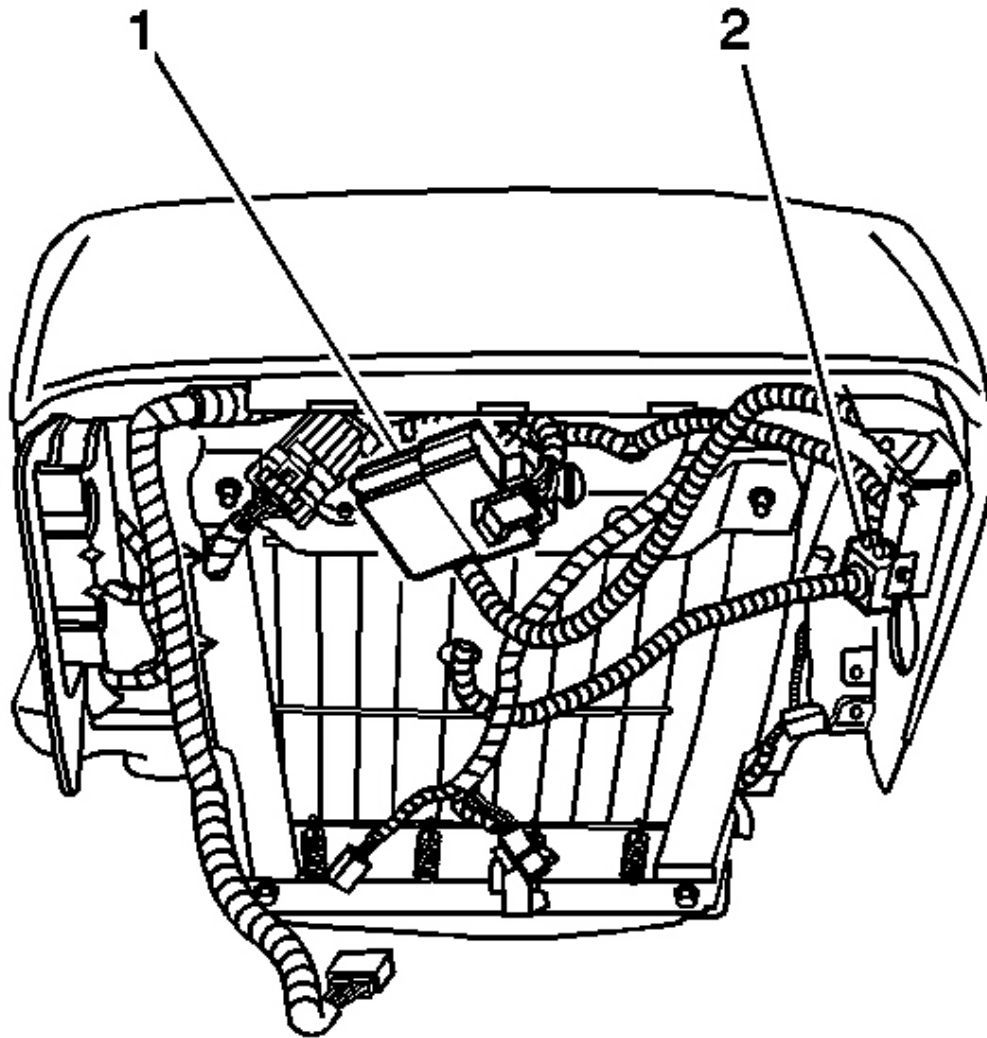
5. Remove the push in retainers (1) that hold the bladder to the seat cushion frame.
6. Remove the inflatable restraint passenger presence system from the seat.

#### **Installation Procedures**



**Fig. 68: Seat Cushion Frame Bladder Retainers**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the inflatable restraint passenger presence system to the seat.
2. Install the push in retainers (1) that hold the bladder to the seat cushion frame.



**Fig. 69: View Of Electronic Control Unit & Pressure Switch**  
Courtesy of GENERAL MOTORS CORP.

3. Install the pressure sensor (2) to the bottom of the passenger seat cushion frame.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

4. Install the bolts that retain the (ECU) (1) to the bottom the passenger seat cushion frame.

**Tighten:** Tighten the bolts to 2 N.m (18 lb in).

5. Connect the electrical connectors.
6. Install the seat cushion trim cover and pad. Refer to **Seat Cushion Cover Replacement - Front** in Seats.
7. Re-zero the inflatable restraint passenger presence system. Refer to **Passenger Presence System Rezeroing Procedure** in SIR.

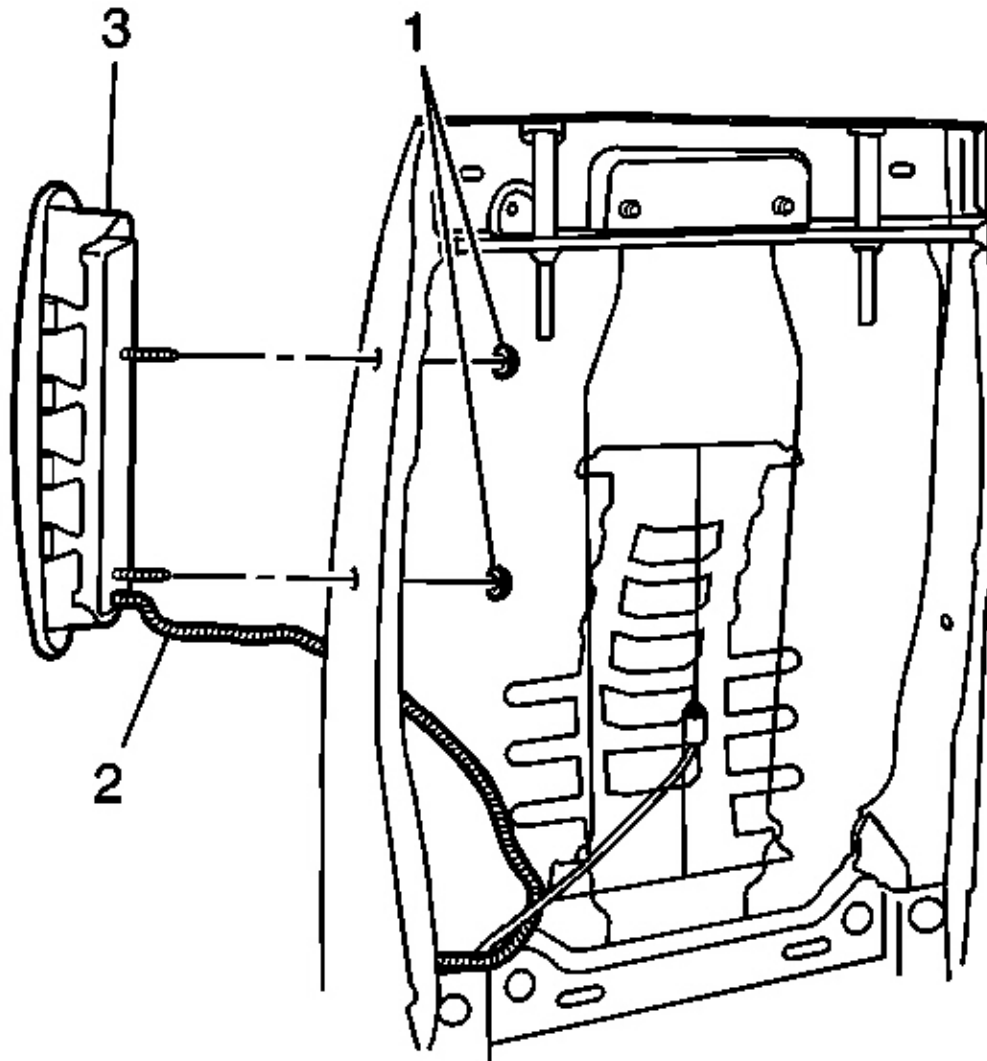
## INFLATABLE RESTRAINT SIDE IMPACT MODULE REPLACEMENT - LH

### Removal Procedure

**CAUTION:** Refer to **SIR Caution** in Cautions and Notices.

**CAUTION:** Refer to **SIR Inflator Module Handling and Storage Caution** in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7**.
2. Remove the driver seat. Refer to **Seat Replacement - Bucket** in Seats.
3. Remove the J-clip from the lower rear seat back.
4. Remove the seat back cover. Refer to **Seat Back Cover Replacement - Front** in Seats.



**Fig. 70: View Of Air Bag & Fasteners**  
**Courtesy of GENERAL MOTORS CORP.**

5. Remove the air bag fasteners (1).
6. Note the routing of the air bag wiring harness (2) and the retaining clip attachments within the driver seat.
7. Remove the retaining clips on the air bag wiring harness from the driver seat frame.

8. Gently pull the air bag wiring harness (2) up into the seat back while guiding the harness through the wire triangle of the seat frame.
9. Remove the air bag (3) from the seat back frame.

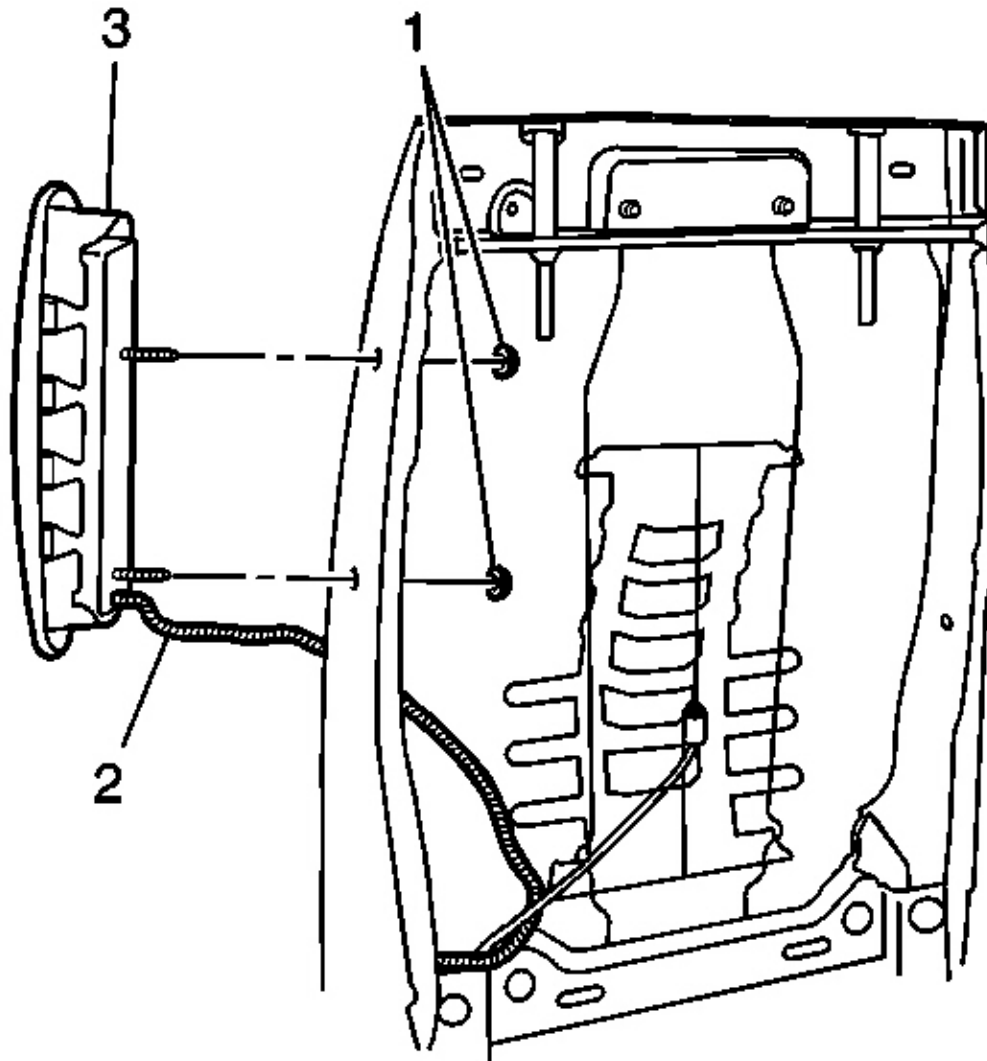
**CAUTION: Following the deployment of a side impact air bag, inspect the following parts for damage. Replace these parts if necessary:**

- The seat cushion frame
- The seat recliner, if equipped
- The seat adjuster
- The seat back frame

**Failure to do so may cause future personal injury.**

10. Fully deploy the module before disposal. If the module was replaced under warranty, fully deploy and dispose of the module after the required retention period. Refer to **Inflator Module Handling and Scrapping**.

#### **Installation Procedure**



**Fig. 71: View Of Air Bag & Fasteners**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the driver side air bag (3) to the seat while guiding the air bag wiring harness (2) through the trim cup.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

2. Install the air bag fasteners (1).

**Tighten:** Tighten the fasteners (1) to 10 N.m (89 lb in).

3. Gently pull the air bag wiring harness (2) down into the seat cushion while guiding the harness through the wire triangle of the seat frame.
4. Install the harness retaining clips to the seat frame.
5. Install the seat back cover. Refer to **Seat Back Cover Replacement - Front** in Seats.
6. Connect together the J-clip that is along the lower rear seat back.
7. Install the driver seat. Refer to **Seat Replacement - Bucket** in Seats.
8. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7**.

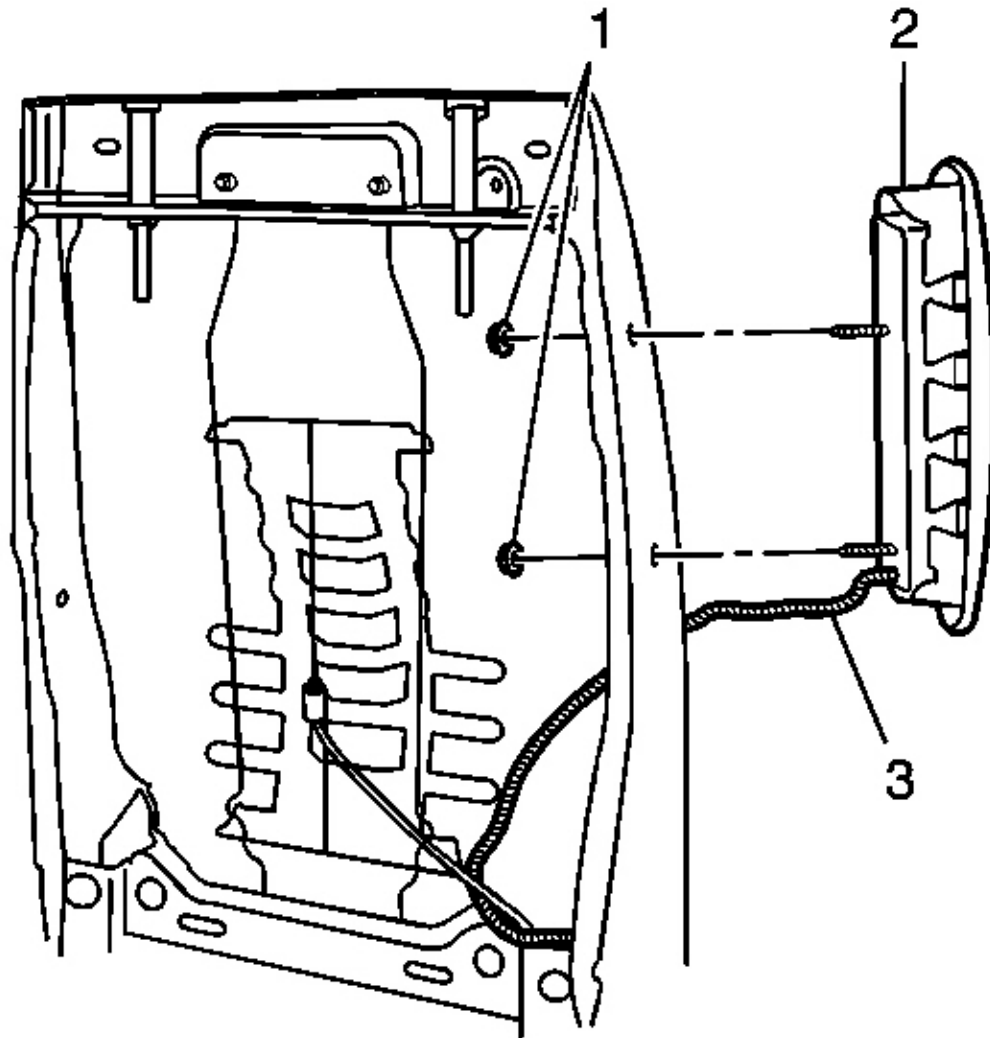
## INFLATABLE RESTRAINT SIDE IMPACT MODULE REPLACEMENT - RH

### Removal Procedure

**CAUTION:** Refer to **SIR Inflator Module Handling and Storage Caution** in Cautions and Notices.

**CAUTION:** Refer to **SIR Caution** in Cautions and Notices.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 9**.
2. Remove the passenger seat. Refer to **Seat Replacement - Bucket** in Seats.
3. Remove the J-clip from the lower rear seat back.
4. Remove the seat back cover. Refer to **Seat Back Cover Replacement - Front** in Seats.



**Fig. 72: Alignment Of Air Bag Wiring Harness**  
**Courtesy of GENERAL MOTORS CORP.**

5. Remove the air bag fasteners (1).
6. Note the routing of the air bag wiring harness (3) and the retaining clip attachments within the passenger seat.
7. Remove the retaining clips on the air bag wiring harness from the passenger seat frame.
8. Gently pull the air bag wiring harness (3) up into the seat back while guiding the harness

through the wire triangle of the seat frame.

9. Remove the air bag (2) from the seat back frame.

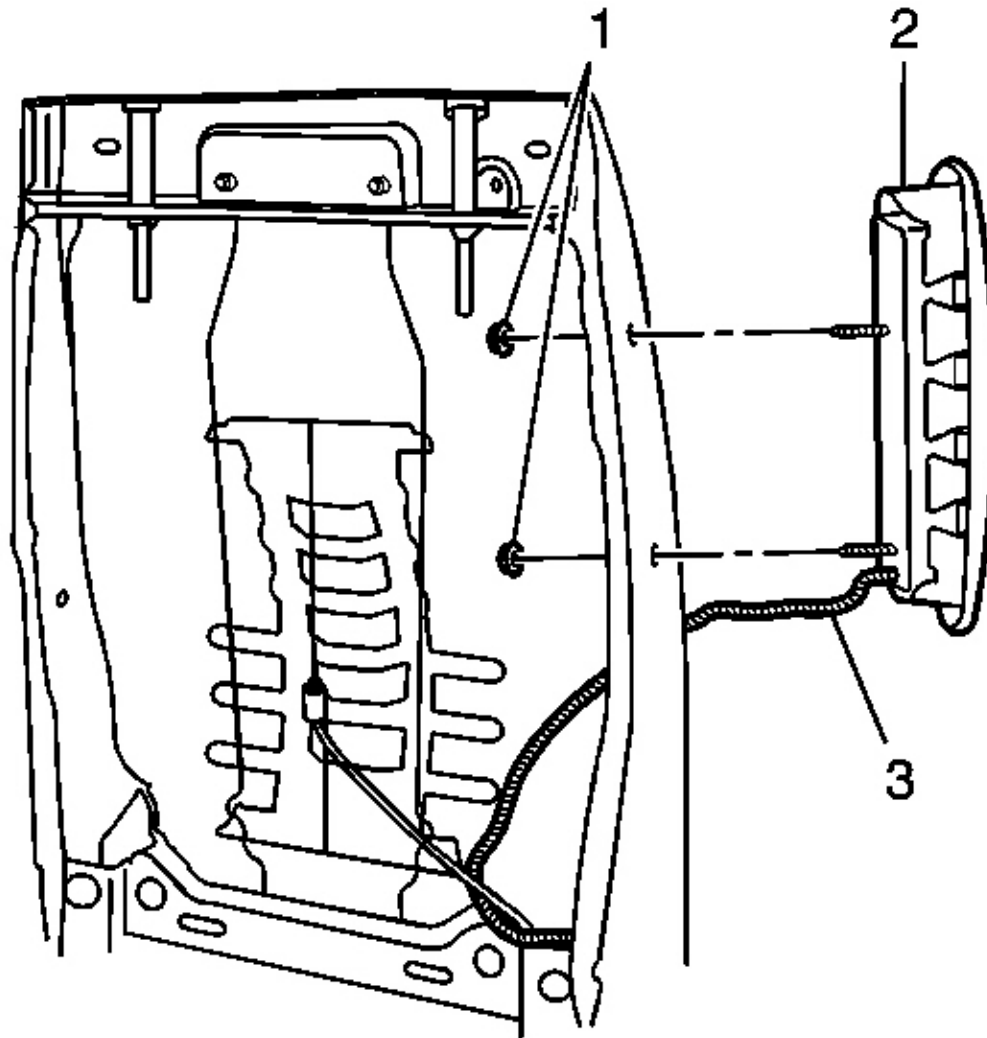
**CAUTION:** Following the deployment of a side impact air bag, inspect the following parts for damage. Replace these parts if necessary:

- The seat cushion frame
- The seat recliner, if equipped
- The seat adjuster
- The seat back frame

**Failure to do so may cause future personal injury.**

10. Fully deploy the module before disposal. If the module was replaced under warranty, fully deploy and dispose of the module after the required retention period. Refer to **Inflator Module Handling and Scrapping**.

#### **Installation Procedure**



**Fig. 73: Alignment Of Air Bag Wiring Harness**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the passenger side air bag (2) to the seat while guiding the air bag wiring harness (3) through the trim cup.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

2. Install the air bag fasteners (1).

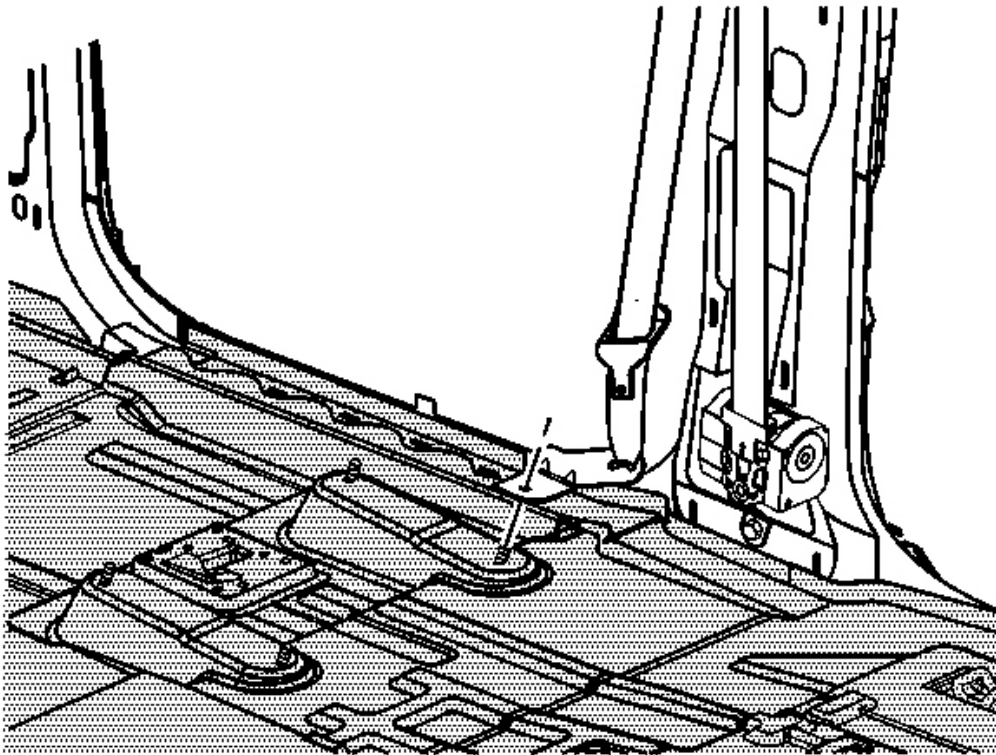
**Tighten:** Tighten the fasteners (1) to 10 N.m (89 lb in).

3. Gently pull the air bag wiring harness (3) down into the seat cushion while guiding the harness through the wire triangle of the seat frame.
4. Install the harness retaining clips to the seat frame.
5. Install the seat back cover. Refer to **Seat Back Cover Replacement - Front** in Seats.
6. Connect together the J-clip that is along the lower rear seat back.
7. Install the passenger seat. Refer to **Seat Replacement - Bucket** in Seats.
8. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 9**.

## SEAT BELT RETRACTOR PRETENSIONER REPLACEMENT - LEFT FRONT

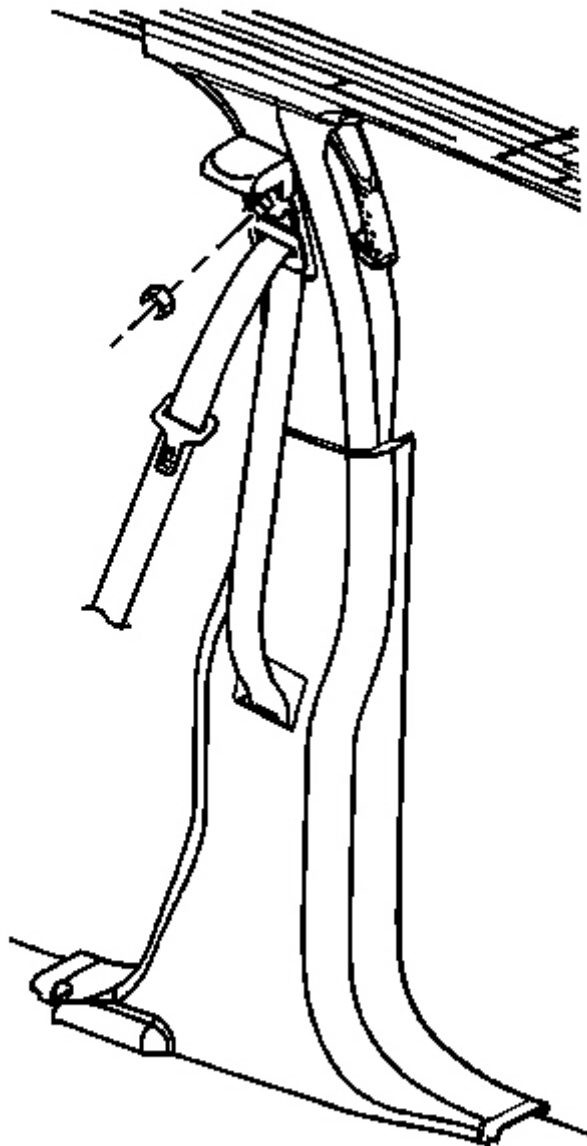
### Removal Procedure

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 7**.



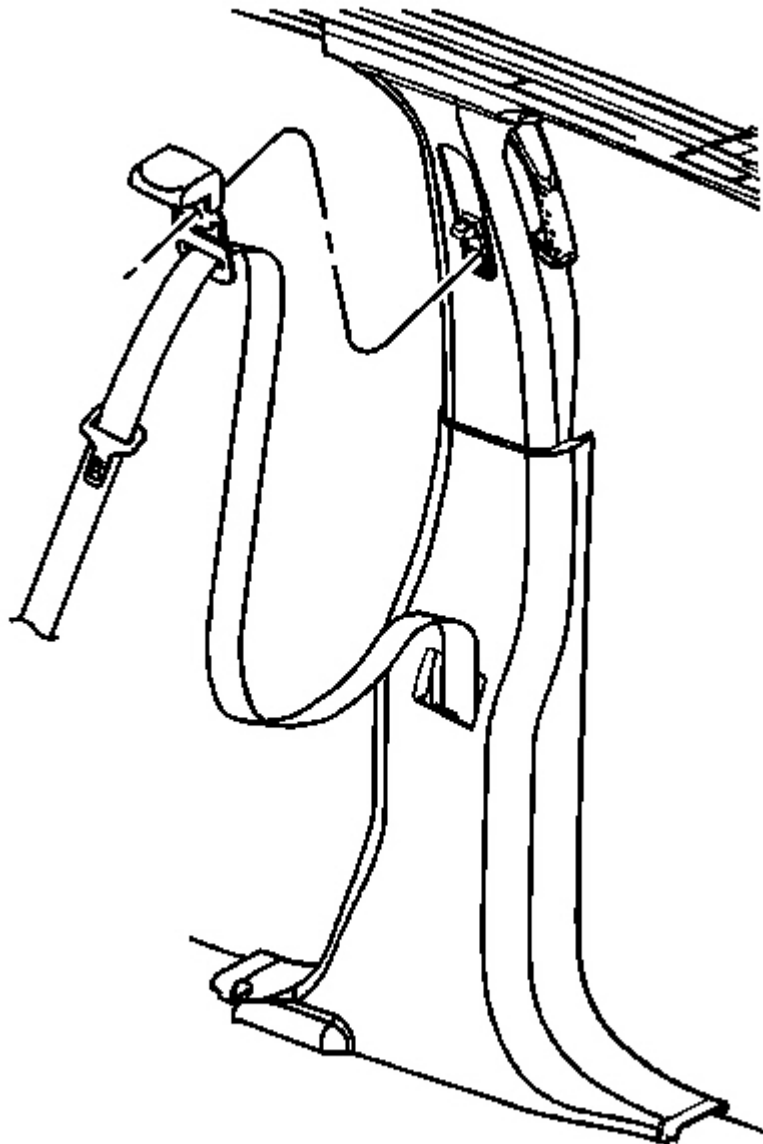
**Fig. 74: View Of Front Seat Belt Anchor**  
**Courtesy of GENERAL MOTORS CORP.**

2. Remove the front bucket seat. Refer to **Seat Replacement - Bucket** in Seats.
3. Remove the front seat belt anchor from the rear outboard stud.



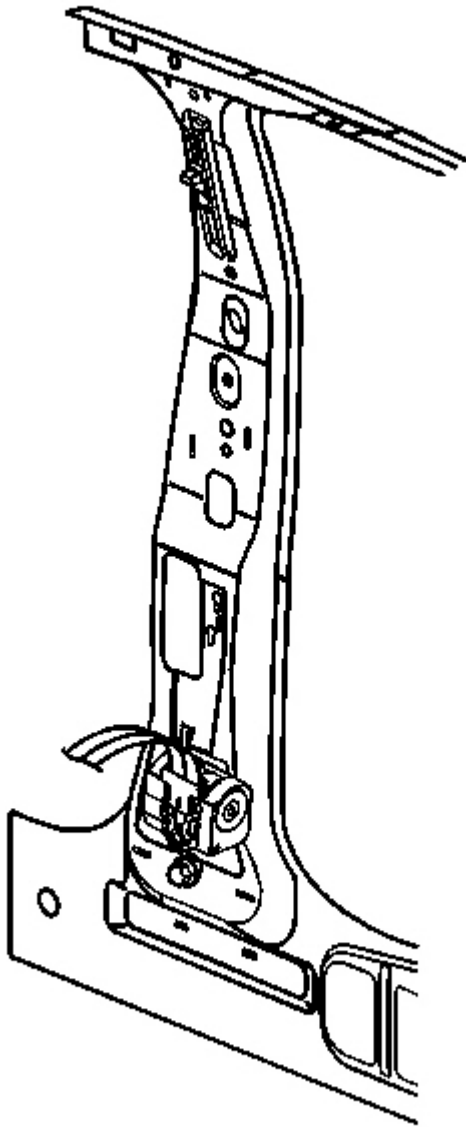
**Fig. 75: View Of Seat Belt Guide Loop Nut**  
**Courtesy of GENERAL MOTORS CORP.**

4. Open the seat belt guide loop cover.
5. Remove the nut from seat belt guide loop.



**Fig. 76: Locating Seat Belt Guide Loop**  
**Courtesy of GENERAL MOTORS CORP.**

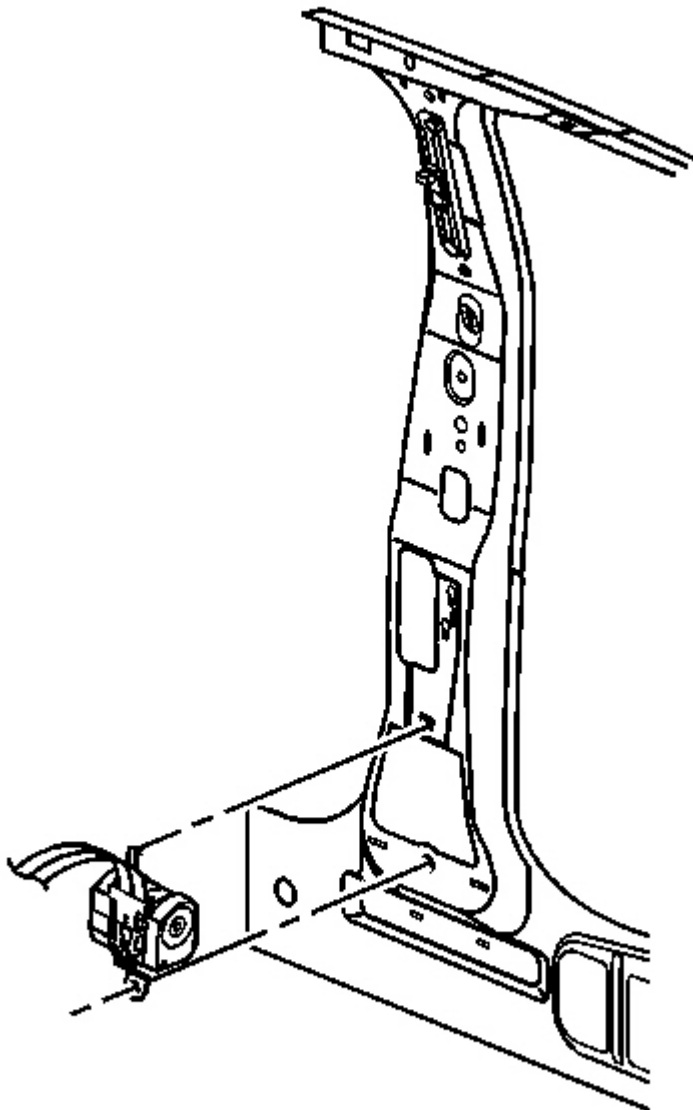
6. Remove the seat belt guide loop from the guide adjuster bracket.



**Fig. 77: View Of Seat Belt Retractor Bolt**

Courtesy of GENERAL MOTORS CORP.

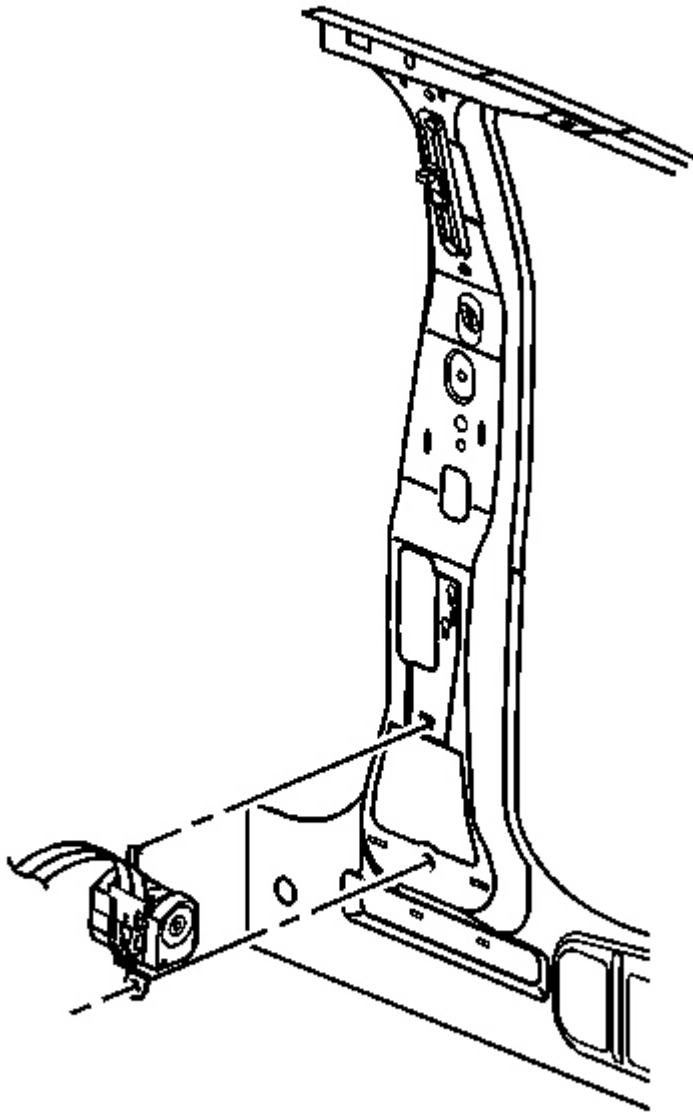
7. Remove the center pillar lower trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
8. Remove the bolt from the seat belt retractor.



**Fig. 78: Removing/Installing Seat Belt Retractor**  
**Courtesy of GENERAL MOTORS CORP.**

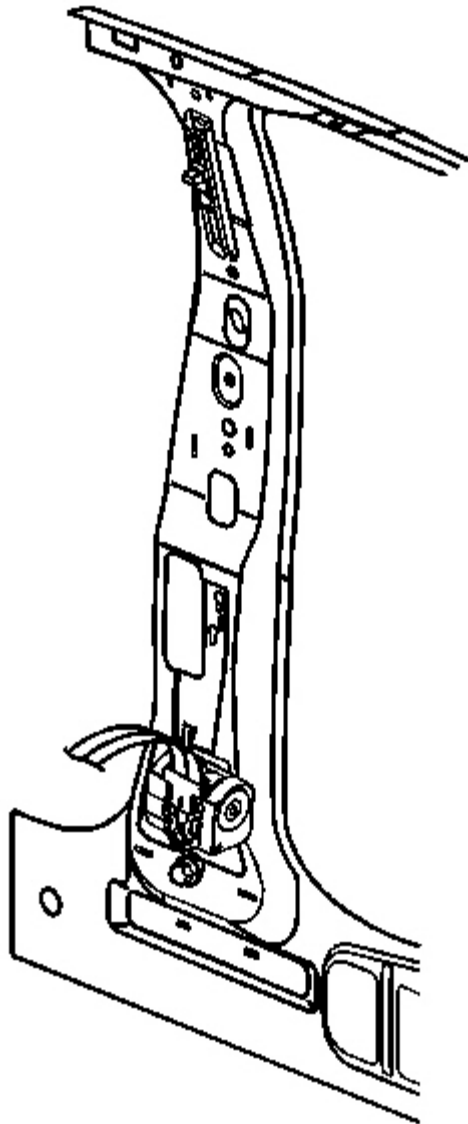
9. Remove the seat belt retractor from the center pillar.
10. Remove the front seat belt from the vehicle.

**Installation Procedure**



**Fig. 79: Removing/Installing Seat Belt Retractor**  
Courtesy of GENERAL MOTORS CORP.

1. Install the seat belt retractor to the center pillar.



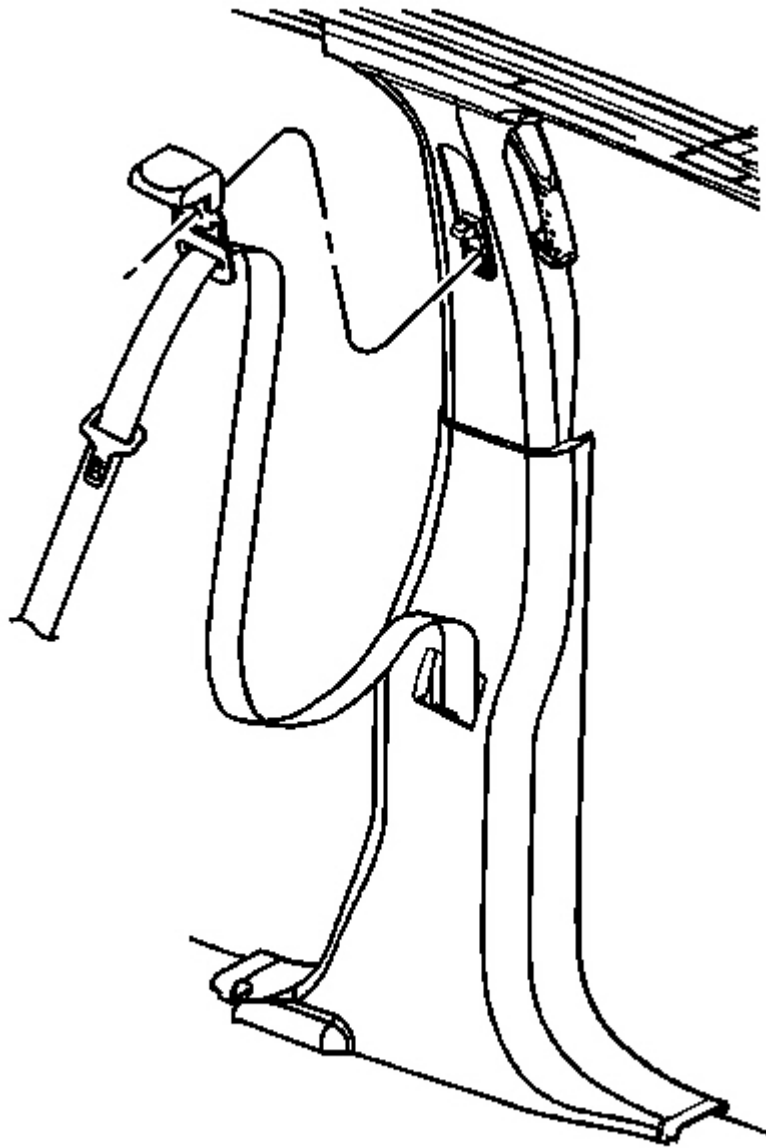
**Fig. 80: View Of Seat Belt Retractor Bolt**  
Courtesy of GENERAL MOTORS CORP.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

2. Install the bolt to the seat belt retractor.

**Tighten:** Tighten the bolt to 42 N.m (31 lb ft).

3. Install the center pillar lower trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.



**Fig. 81: Locating Seat Belt Guide Loop**

Courtesy of GENERAL MOTORS CORP.

4. Place the seat belt guide loop to the guide adjuster bracket.

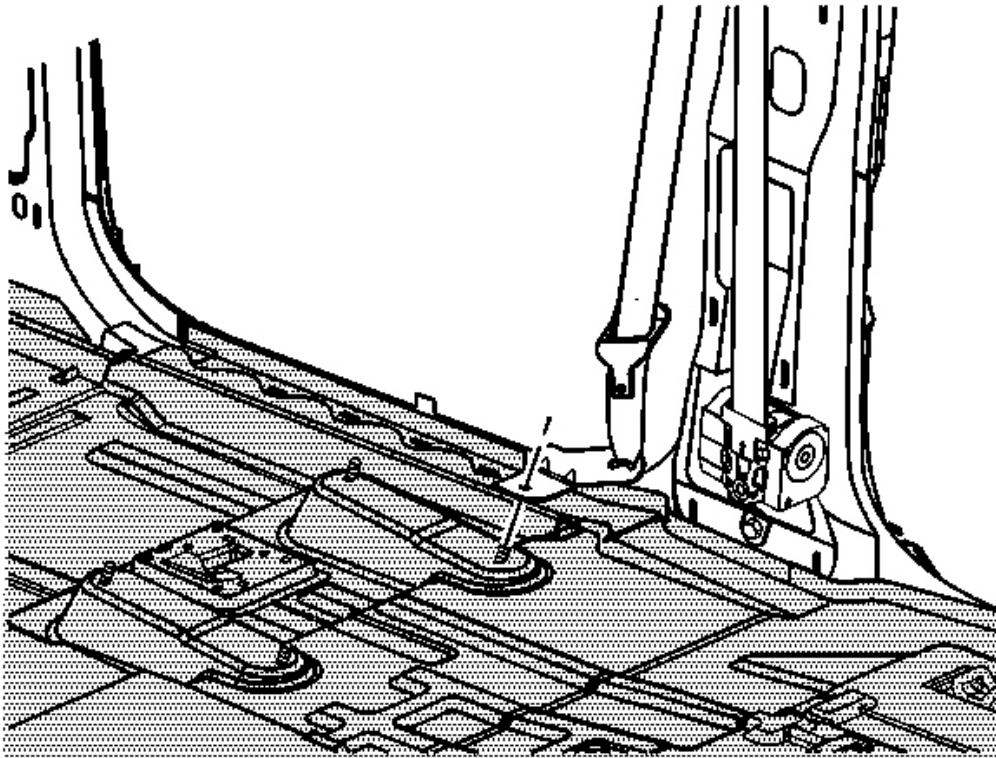


**Fig. 82: View Of Seat Belt Guide Loop Nut**  
Courtesy of GENERAL MOTORS CORP.

5. Install the nut to the seat belt guide loop.

**Tighten:** Tighten the nut to 42 N.m (31 lb ft).

6. Install the seat belt guide loop cover.



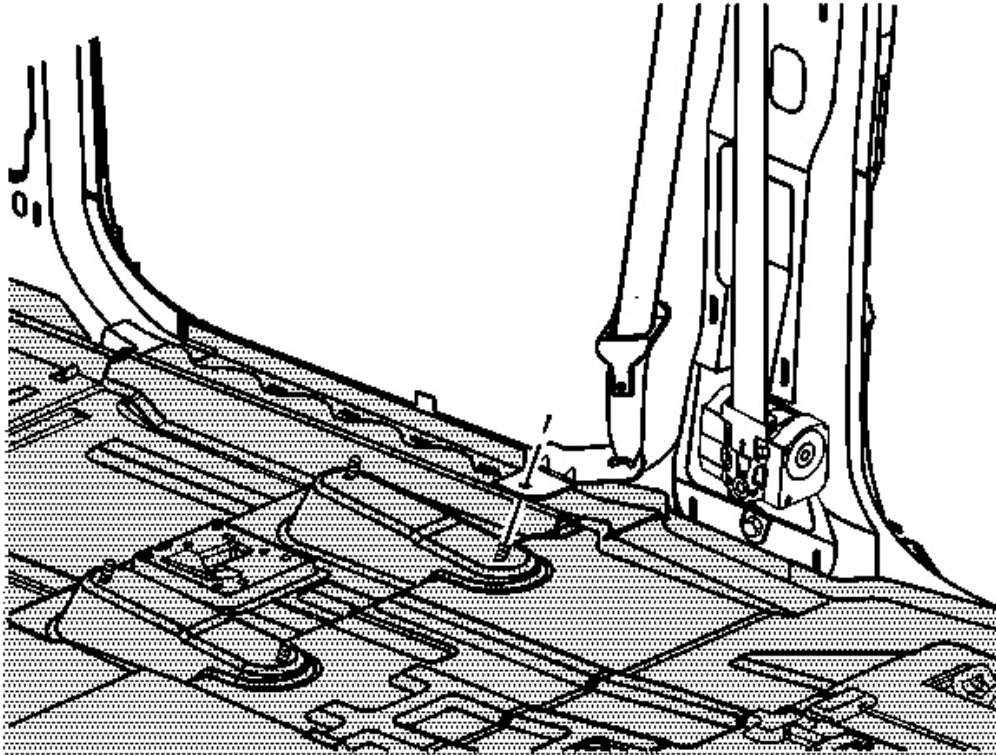
**Fig. 83: View Of Front Seat Belt Anchor**  
**Courtesy of GENERAL MOTORS CORP.**

7. Place the seat belt anchor plate to the seat rear outboard stud.
8. Install the front bucket seat. Refer to **Seat Replacement - Bucket** in Seats.
9. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 7**.

## **SEAT BELT RETRACTOR PRETENSIONER REPLACEMENT - RIGHT FRONT**

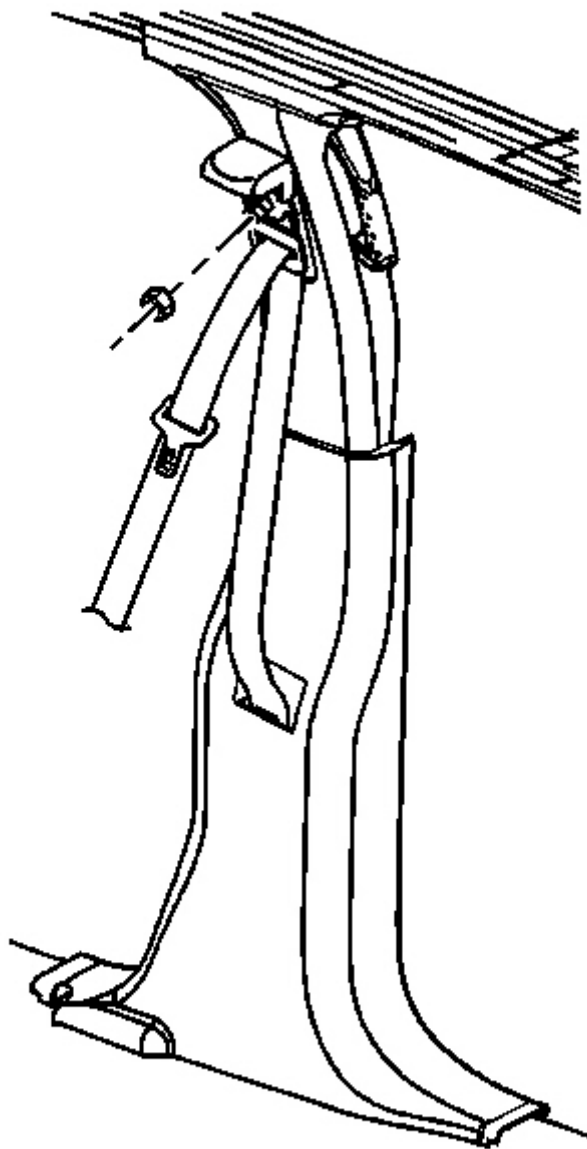
### **Removal Procedure**

1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 9.**



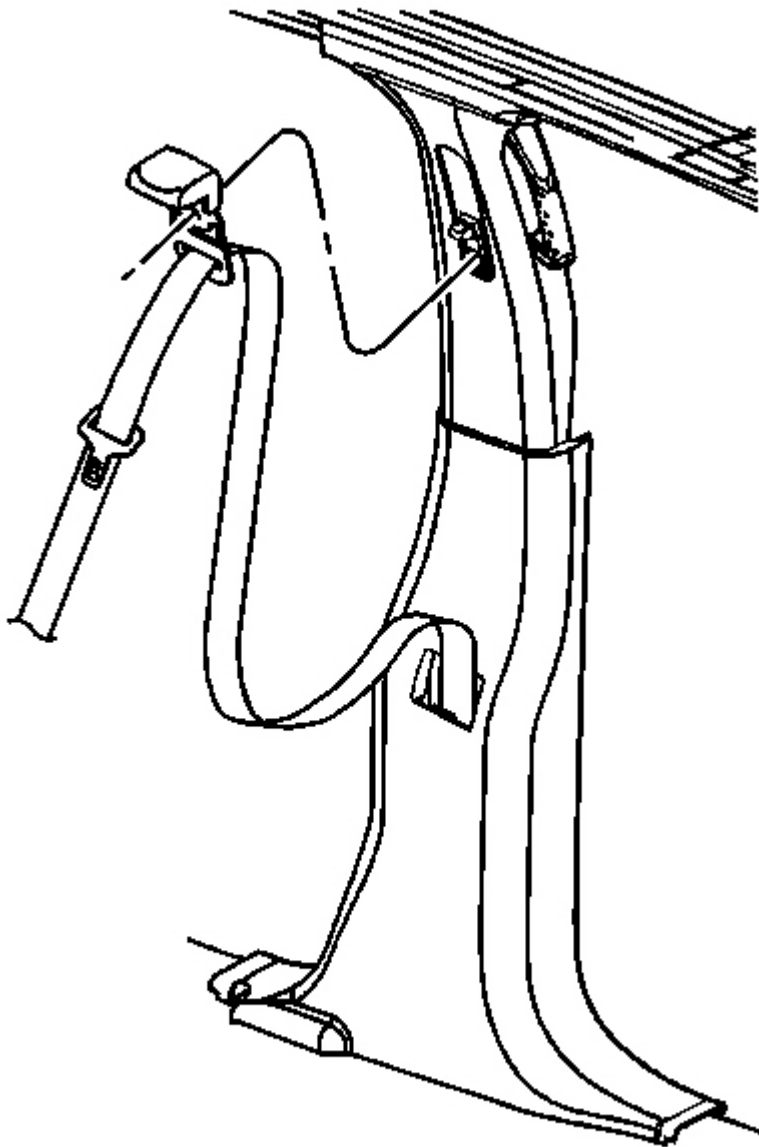
**Fig. 84: View Of Front Seat Belt Anchor**  
Courtesy of GENERAL MOTORS CORP.

2. Remove the front bucket seat. Refer to **Seat Replacement - Bucket** in Seats.
3. Remove the front seat belt anchor from the rear outboard stud.



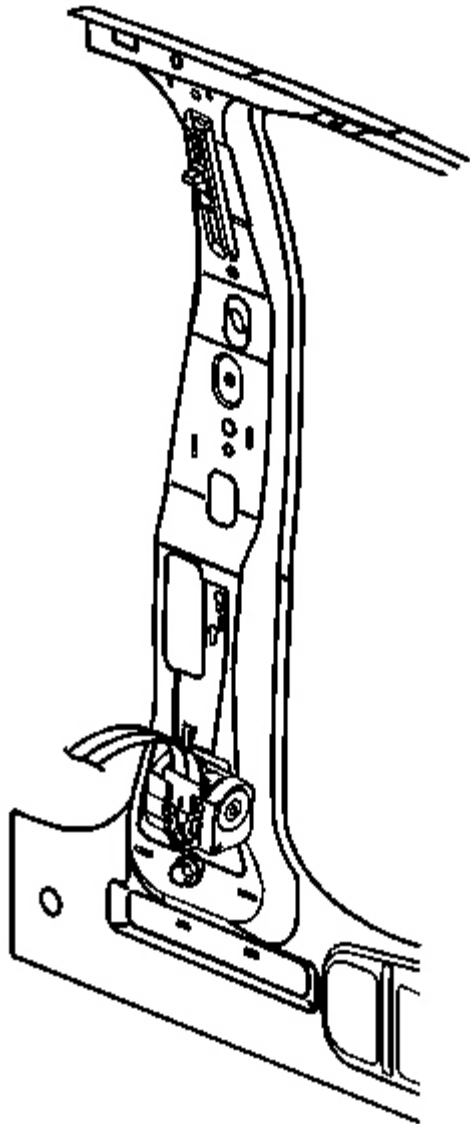
**Fig. 85: View Of Seat Belt Guide Loop Nut**  
**Courtesy of GENERAL MOTORS CORP.**

4. Open the seat belt guide loop cover.
5. Remove the nut from seat belt guide loop.



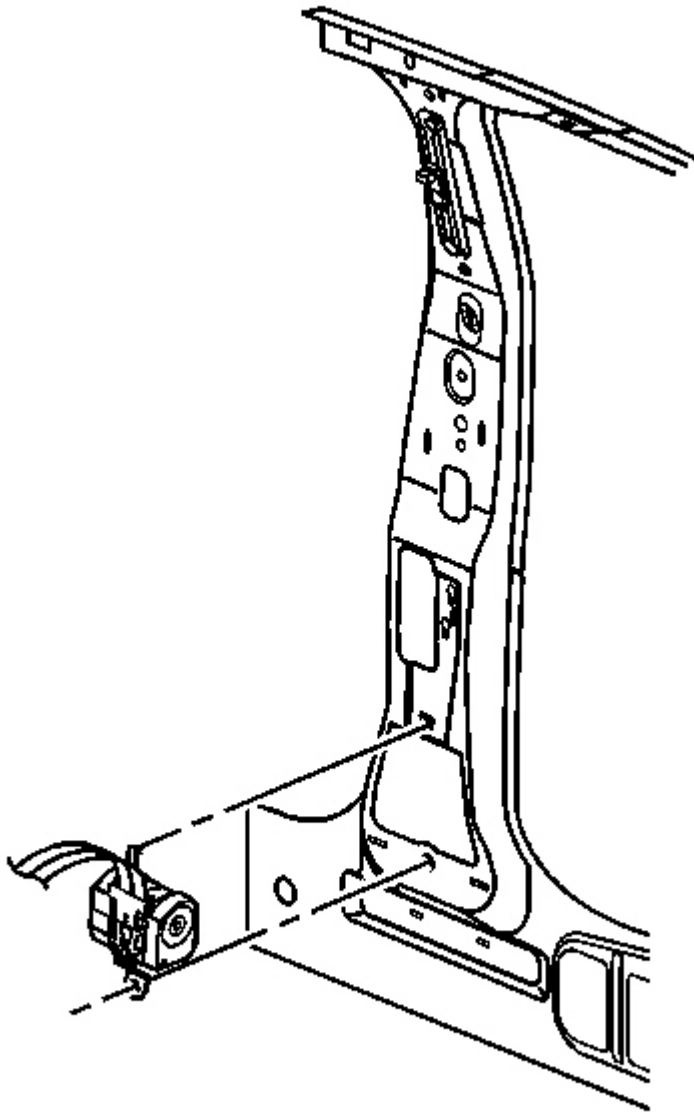
**Fig. 86: Locating Seat Belt Guide Loop**  
Courtesy of GENERAL MOTORS CORP.

6. Remove the seat belt guide loop from the guide adjuster bracket.



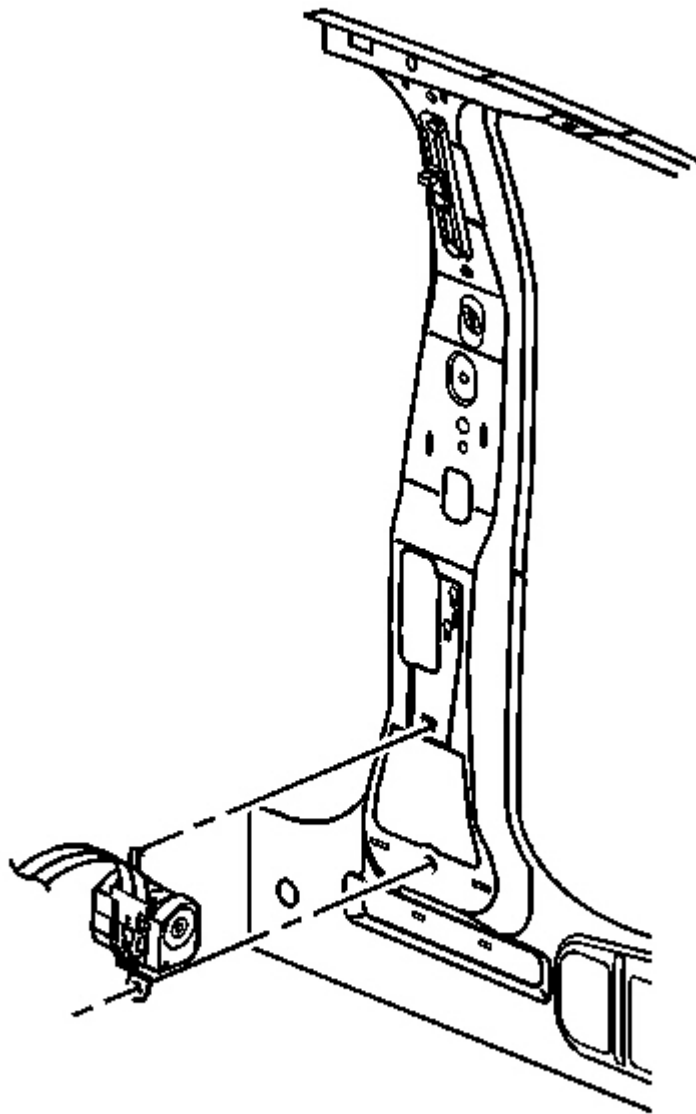
**Fig. 87: View Of Seat Belt Retractor Bolt**  
Courtesy of GENERAL MOTORS CORP.

7. Remove the center pillar lower trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
8. Remove the bolt from the seat belt retractor.



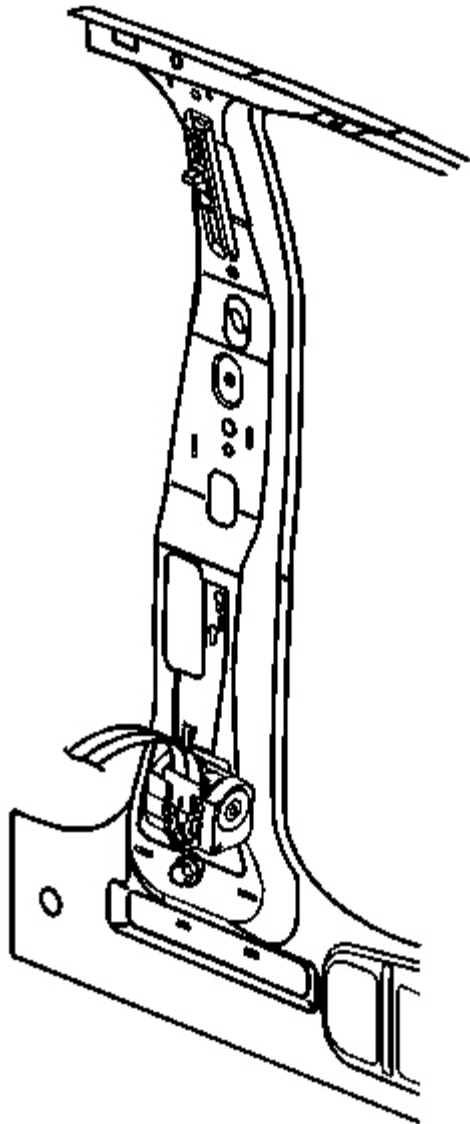
**Fig. 88: Removing/Installing Seat Belt Retractor**  
Courtesy of GENERAL MOTORS CORP.

9. Remove the seat belt retractor from the center pillar.
10. Remove the front seat belt from the vehicle.



**Fig. 89: Removing/Installing Seat Belt Retractor**  
Courtesy of GENERAL MOTORS CORP.

1. Install the seat belt retractor to the center pillar.



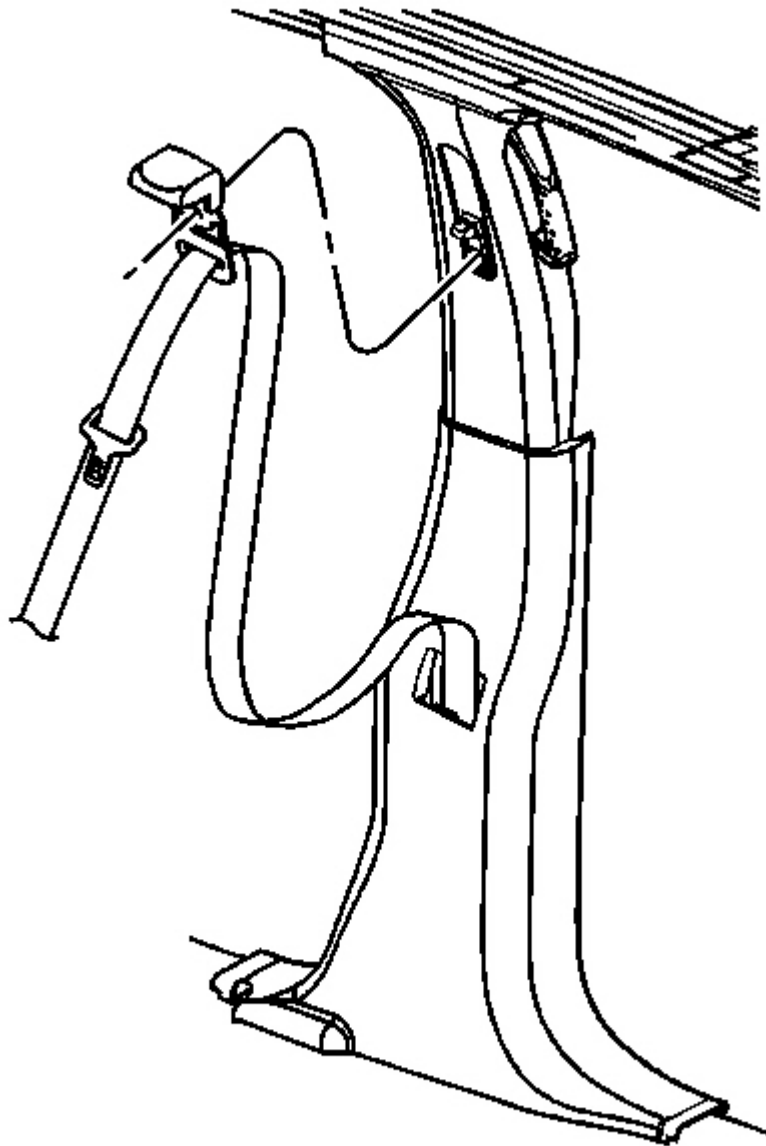
**Fig. 90: View Of Seat Belt Retractor Bolt**  
Courtesy of GENERAL MOTORS CORP.

**NOTE:** Refer to Fastener Notice in Cautions and Notices.

2. Install the bolt to the seat belt retractor.

**Tighten:** Tighten the bolt to 42 N.m (31 lb ft).

3. Install the center pillar lower trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.



**Fig. 91: Locating Seat Belt Guide Loop**

**Courtesy of GENERAL MOTORS CORP.**

4. Place the seat belt guide loop to the guide adjuster bracket.

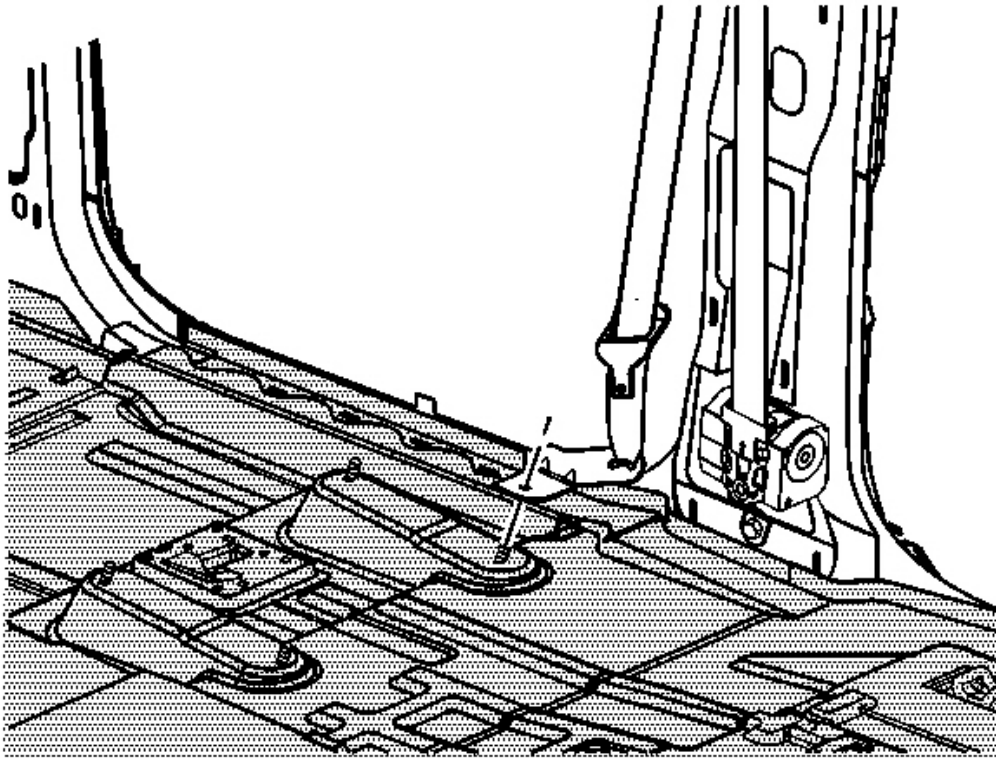


**Fig. 92: View Of Seat Belt Guide Loop Nut**  
**Courtesy of GENERAL MOTORS CORP.**

5. Install the nut to the seat belt guide loop.

**Tighten:** Tighten the nut to 42 N.m (31 lb ft).

6. Install the seat belt guide loop cover.



**Fig. 93: View Of Front Seat Belt Anchor**  
**Courtesy of GENERAL MOTORS CORP.**

7. Place the seat belt anchor plate to the seat rear outboard stud.
8. Install the front bucket seat. Refer to **Seat Replacement - Bucket** in Seats.
9. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 9**.

## REPAIRS AND INSPECTIONS REQUIRED AFTER A COLLISION

### Accident With or Without Air Bag Deployment - Component Inspections

**CAUTION:** Proper operation of the SIR sensing system requires that any repairs to the vehicle structure return the vehicle structure to the original production configuration. Not properly repairing the vehicle structure could cause non-deployment in a collision or deployment for conditions less severe than intended.

After a collision, inspect the following components as indicated. If any damage is detected, replace the component. If damage to the mounting points or mounting hardware is detected, repair the component or replace the hardware as needed.

- Steering column-Perform the steering column accident damage checking procedures. Refer to **Steering Column Accident Damage Inspection** in Steering Wheel and Column.
- Instrument panel (I/P) knee bolsters and mounting points-Inspect the knee bolsters for bending, twisting, buckling, or any other type of damage.
- I/P brackets, braces, etc.-Inspect for bending, twisting, buckling, or any other type of damage.
- Seat belts-Perform the seat belt operational and functional checks. Refer to **Operational and Functional Checks** in Seat Belts.
- Seats and seat mounting points-Inspect for bending, twisting, buckling, or any other type of damage.
- Passenger seat bottom with passenger presence system (PPS)-Check for any DTCs or problems that may cause the PPS not to function properly, Rendezvous only.

#### Frontal Inflator Module Deployment

After a collision involving air bag deployment, replace the following components.

**IMPORTANT:** The front passenger seat is equipped with a PPS, which detects an occupant. If the requirements for disabling the I/P air bag are met then the PPS will communicate with the SDM to disable/turn off the I/P air bag, even in a accident. For more information on the PPS refer to **SIR System Description and Operation**.

- Inflatable restraint I/P module, if deployed and after performing the necessary inspections listed above
- Inflatable restraint steering wheel module
- Inflatable restraint sensing and diagnostic module (SDM)

## 2006 Buick Rendezvous CX

### 2006 RESTRAINTS SIR - Rendezvous

- Inflatable restraint PPS, Rendezvous only
- Inflatable restraint front end sensor, Left/Right, Rendezvous only
- Inflatable restraint seat belt retractor pretensioner, Left/Right, Rendezvous only

Perform additional inspections on the following components.

- Steering wheel module coil and the coil wiring pigtail-Inspect for melting, scorching, or other damage due to excessive heat.
- Mounting points or mounting hardware for the I/P module, steering wheel module, SDM, and pretensioners-Inspect for any damage and repair or replace each component as needed.

#### Accident With Side Air Bag Deployment for Rendezvous only - Component Replacement and Inspections

After a collision involving side air bag deployment, replace the following components.

- Inflatable restraint side impact sensors (SIS), Left/Right, on the side of the impact
- Inflatable restraint side impact module, Left/Right, on the side of the impact
- Inflatable restraint SDM
- Inflatable restraint PPS
- Inflatable restraint seat belt retractor pretensioner, Left/Right

Perform additional inspections on the following components.

- Mounting points or mounting hardware for the SIS-Inspect for any damage and repair or replace each component as needed.
- Mounting points or mounting hardware for the roof rail module (left/right) on the side of impact-Inspect for any damage and repair or replace each component as needed.
- Mounting points or mounting hardware for the SDM and seat belt pretensioners-Inspect for any damage and repair or replace each component as needed.

#### INFLATOR MODULE HANDLING AND SCRAPPING

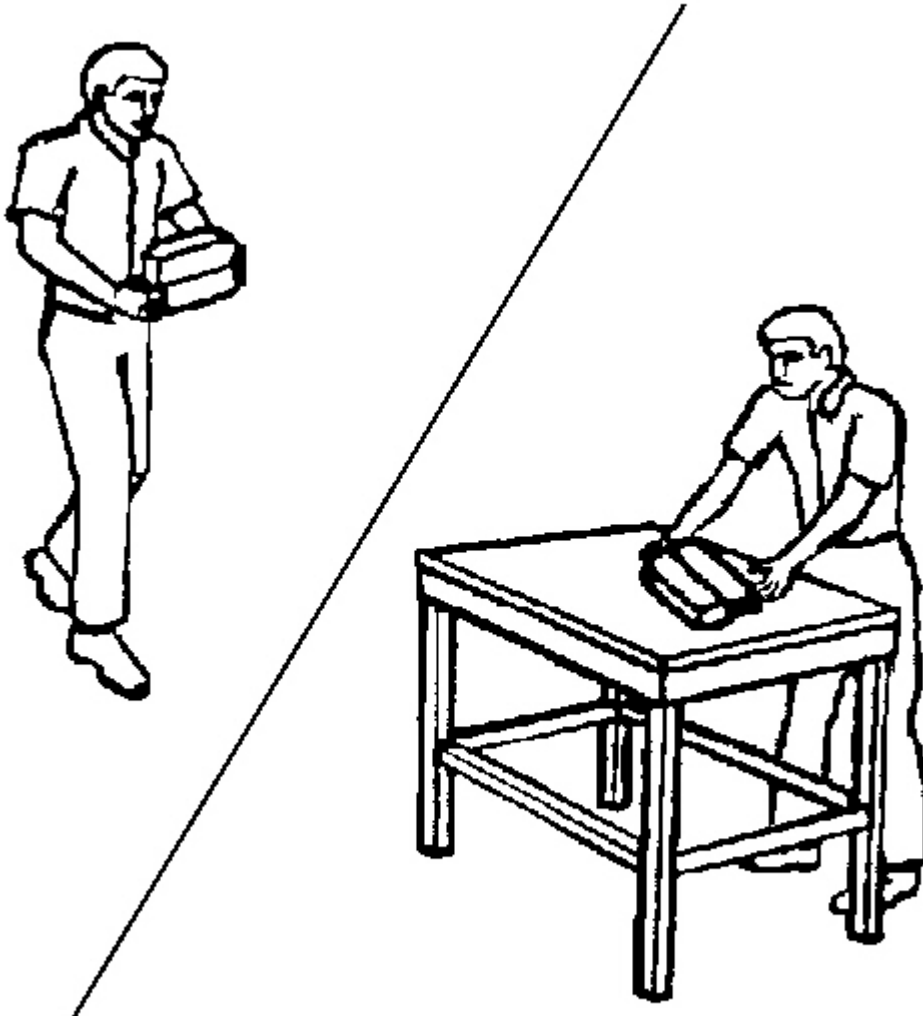
##### Tools Required

- **J 38826** SIR Deployment Harness. See **Special Tools**.
- **J 39401-B** Deployment Fixture. See **Special Tools**.
- J 38826-25 Side Impact Module Adapter
- J 38826-75 Steering Wheel Module Adapter (Dual Stage Air Bags)

- J 38826-80 I/P Module Adapter (Dual Stage Air Bags)
- J 38826-100 Steering Wheel Module and I/P Module Adapter (Single Stage Air Bags), Aztek Only

**Live and Undeployed Inflator Module**

**CAUTION:** Refer to SIR Inflator Module Handling and Storage Caution in Cautions and Notices.



**Fig. 94: View Of Proper Handling Of Undeployed Inflator Module**  
**Courtesy of GENERAL MOTORS CORP.**

Take special care when handling or storing a live (undeployed) inflator module. An inflator module deployment produces a rapid generation of gas. This may cause the inflator module, or an object in front of the inflator module, to project through the air in the event of an unlikely deployment.

**Dual Stage Inflator Module**

Dual stage inflator modules have 2 deployment stages. If stage 1 was used to deploy a dual stage inflator module, stage 2 may still be active. Therefore, a deployed inflator module must still be treated as an active inflator module. If disposal of a deployed or undeployed dual stage module is required, both deployment loops must be energized to deploy the inflator module.

**Scrapping Procedure**

During the course of a vehicle's useful life, certain situations may arise which will require the disposal of a live and undeployed inflator module. Do not dispose a live and undeployed inflator module through normal disposal channels until the inflator module has been deployed. If scrapping a deployed dual stage inflator module, both stages must be energized. The following information covers the proper procedures for disposing of a live and undeployed inflator module. Do not deploy the inflator module in the following situations:

- After replacement of an inflator module under warranty-The inflator module may need to be returned undeployed to the manufacturer.
- If the vehicle is the subject of a product liability report, GM-1241, related to the SIR or seat belt system-When a vehicle is the subject of a product liability report, do not alter the SIR or seat belt system in any manner.
- If the vehicle is involved in a campaign affecting the inflator modules-Follow the instructions in the campaign service bulletin for proper SIR handling procedures.

**Deployment Procedures**

The inflator module can be deployed inside or outside of the vehicle. The method used depends upon the final disposition of the vehicle. Review the following procedures in order to determine which will work best in a given situation:

**Deployment Outside Vehicle - Steering Wheel Module, I/P Module, and Side Impact Module**

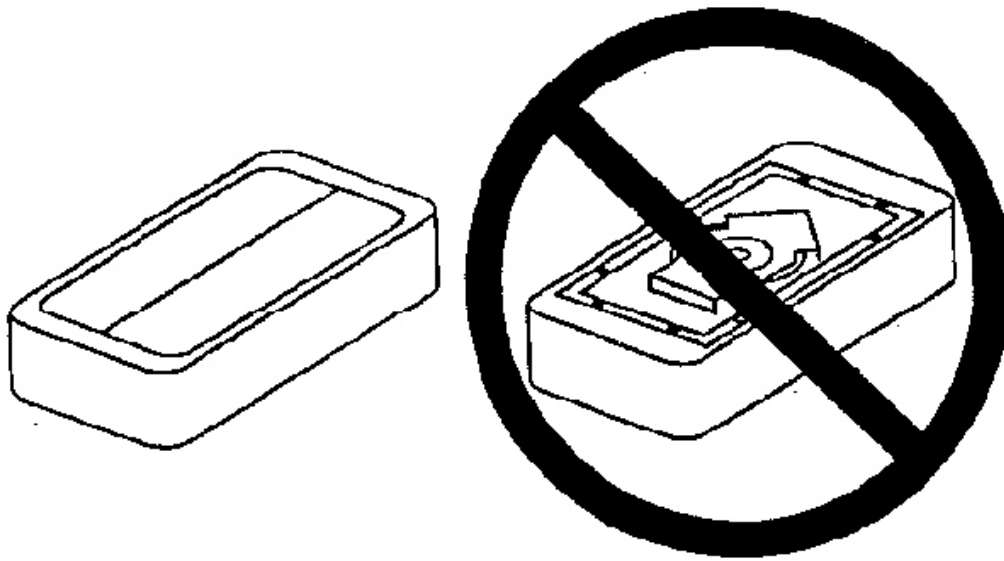
Deploy the inflator module outside of the vehicle when the vehicle will be returned to service. Situations that require deployment outside of the vehicle include the following:

- Using the SIR diagnostics, you determine that the inflator module is malfunctioning.
- The inflator module is cosmetically damaged, scratched, or ripped.
- The inflator module pigtail, if equipped, is damaged.
- The inflator module connector is damaged.
- The inflator module connector terminals are damaged.

Deployment and disposal of a malfunctioning inflator module is subject to any required retention period.

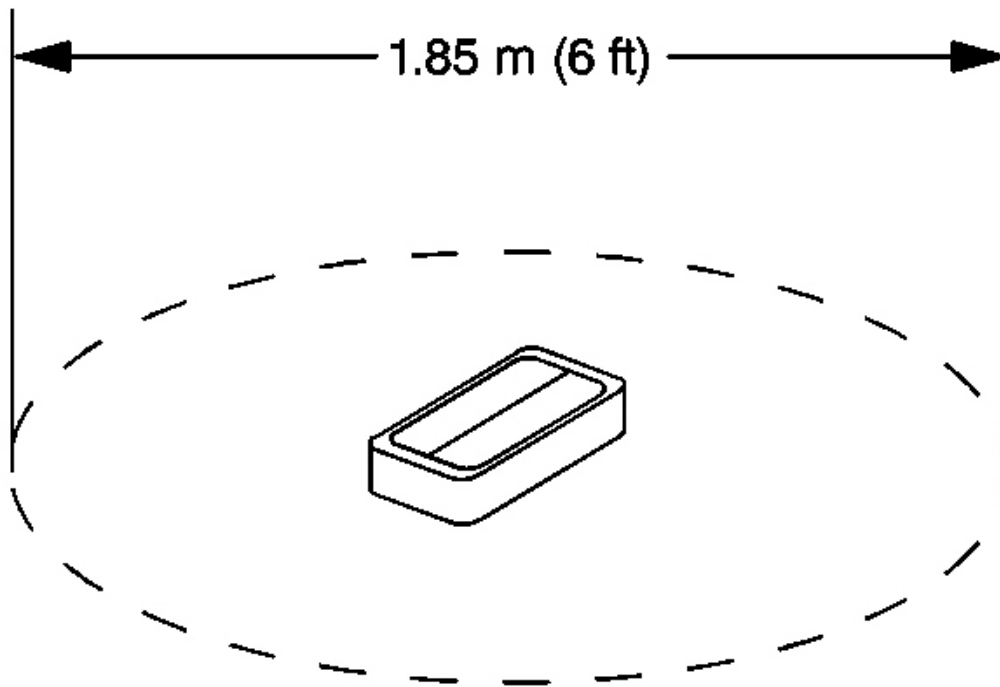
**CAUTION: Refer to SIR Inflator Module Disposal Caution in Cautions and Notices.**

1. Turn OFF the ignition.
2. Remove the ignition key.
3. Put on safety glasses.
4. Remove the inflator module. Refer to the following:
  - If you are removing the steering wheel module, refer to **Inflatable Restraint Steering Wheel Module Replacement**.
  - If you are removing the instrument panel (I/P) module, refer to **Inflatable Restraint Instrument Panel Module Replacement**.
  - If you are removing the side impact module LF, refer to **Inflatable Restraint Side Impact Module Replacement - LH**.
  - If you are removing the side impact module RF, refer to **Inflatable Restraint Side Impact Module Replacement - RH**.



**Fig. 95: Illustrating Proper Storage Of Inflator Module**  
**Courtesy of GENERAL MOTORS CORP.**

5. Place the inflator module with the vinyl trim cover facing up and away from the surface on a work bench.

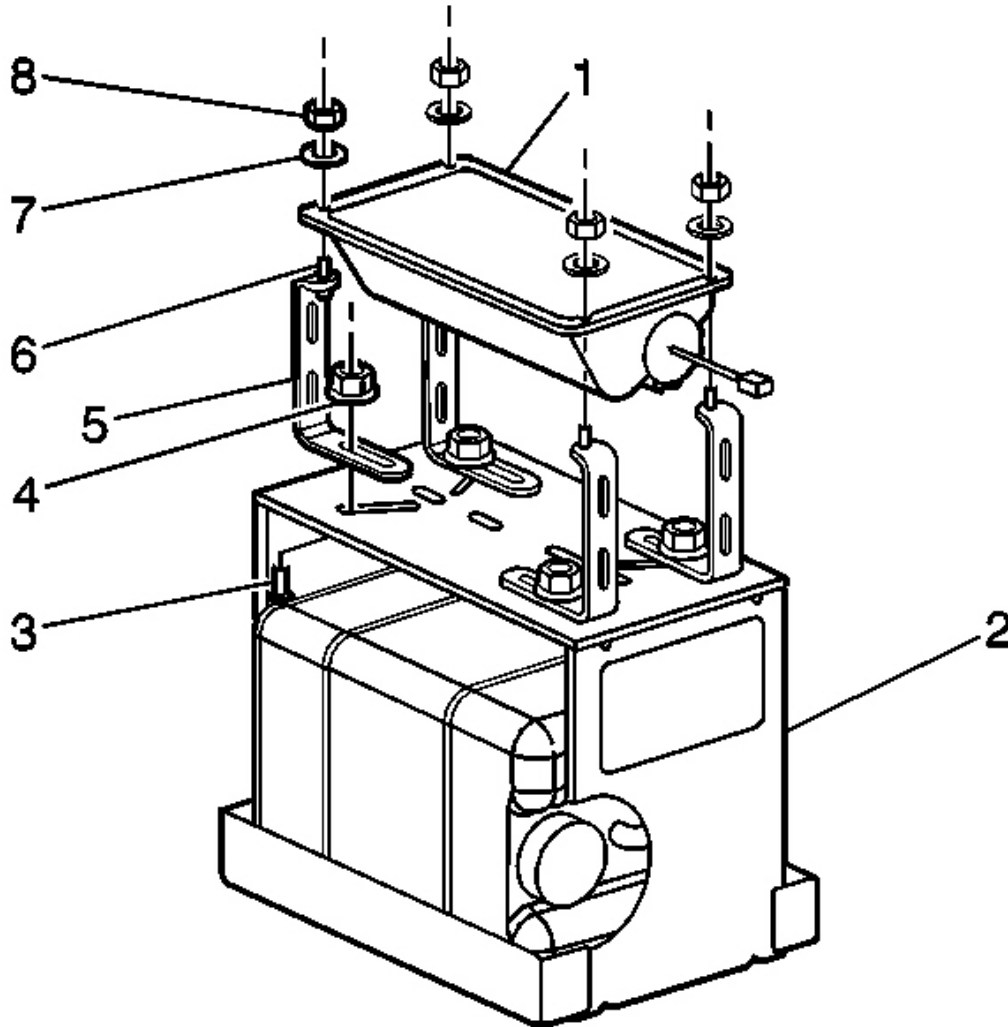


**Fig. 96: Clearance For Deployment Of Inflator Module**  
**Courtesy of GENERAL MOTORS CORP.**

6. Clear a space on the ground about 1.85 m (6 ft) in diameter for deployment of the inflator module or deployment fixture. If possible, use a paved, outdoor location free of activity. Otherwise, use a space free of activity on the shop floor. Make sure you have sufficient ventilation.
7. Make sure no loose or flammable objects are in the area.

**IMPORTANT:** Dual stage air bag deployments are only used in steering wheel and instrument panel (I/P) inflator modules, if the vehicle is equipped. If stage 1 was used to deploy a dual stage inflator module, stage 2 may still be active. If disposal of a deployed or undeployed dual stage module is required, both deployment loops must be energized to deploy the air bag.

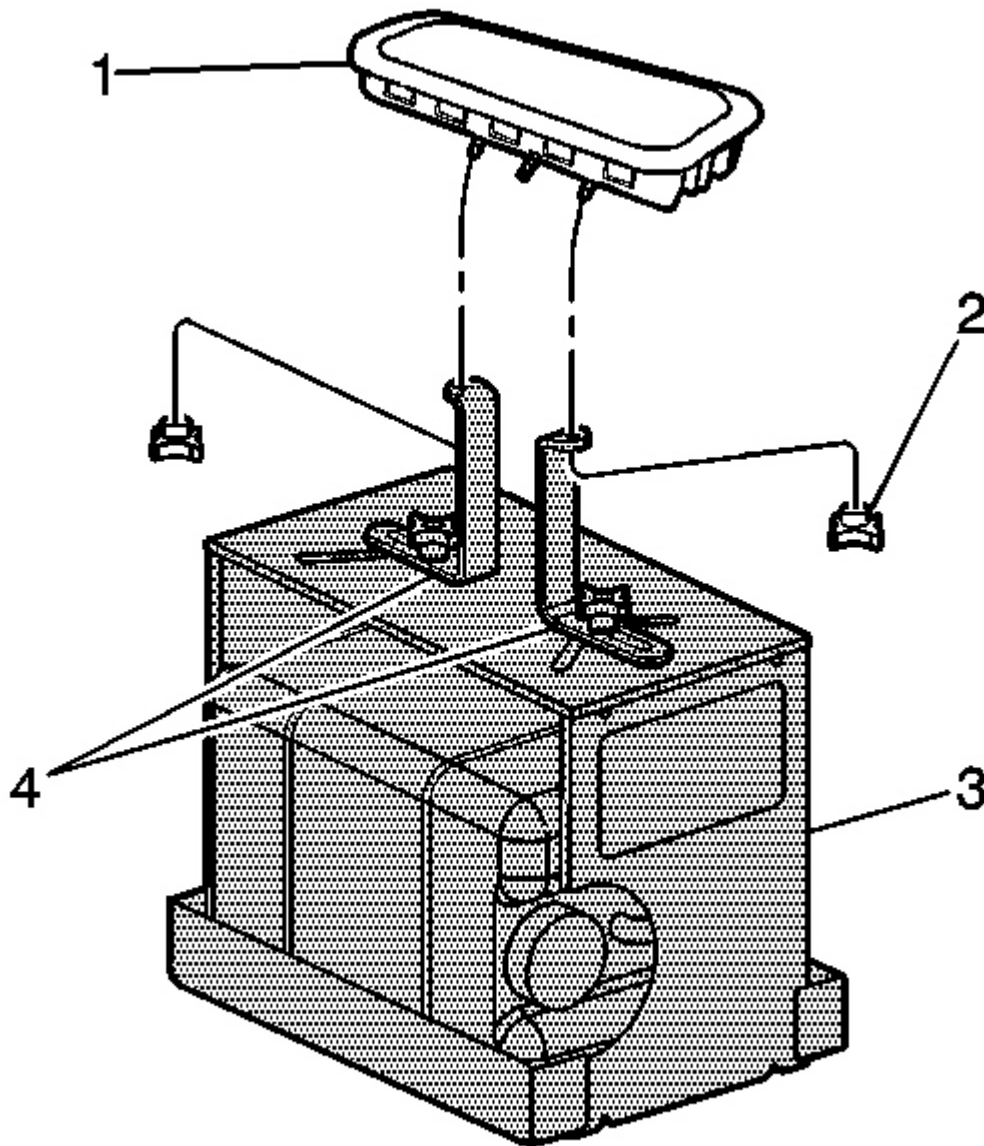
8. If you have a steering wheel inflator module, place the inflator module in the center of the space.



**Fig. 97: Identifying I/P Module Components**  
Courtesy of GENERAL MOTORS CORP.

9. If you have an I/P inflator module, refer to the following instructions:
- Place the **J 39401-B** (2) in the center of the cleared area. See **Special Tools**.
  - Fill the deployment fixture with water or sand.

- Using the proper nuts and bolts, mount the I/P module (1) to the deployment fixture (2), with the vinyl trim facing up.
- Tighten all fasteners that hold the I/P module (1) to the deployment fixture (2).

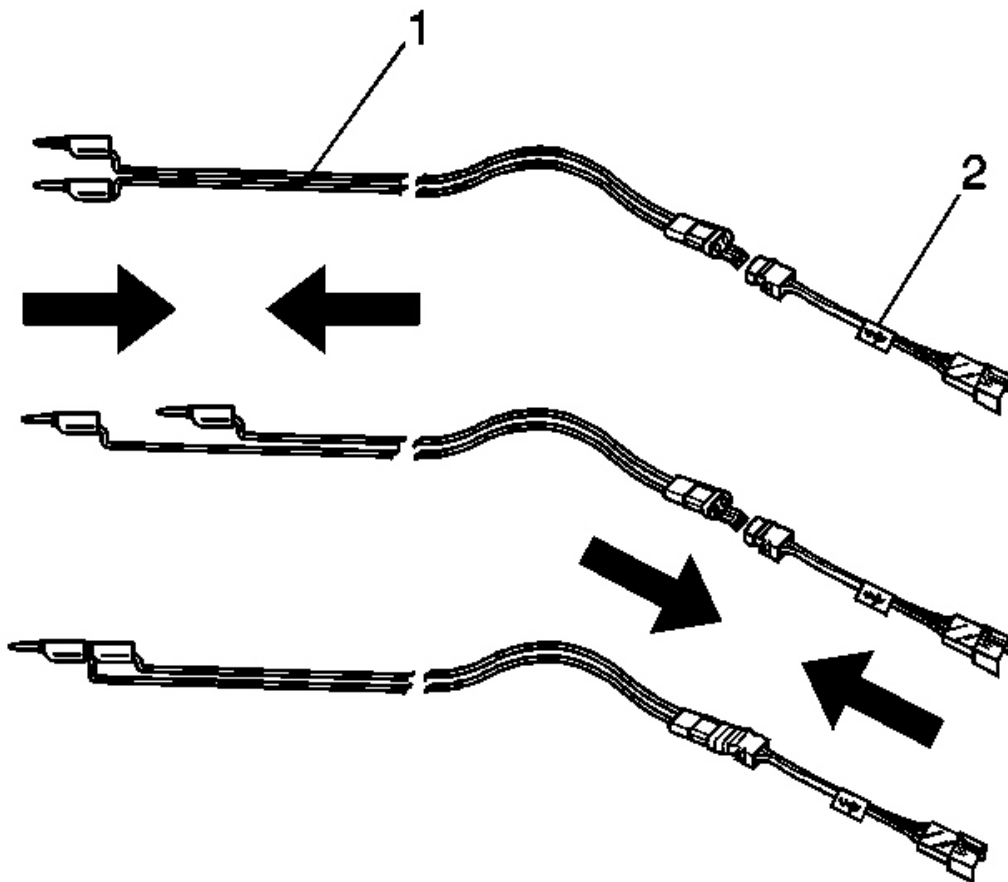


**Fig. 98: View Of Side Impact Module & Components**

**Courtesy of GENERAL MOTORS CORP.**

10. If you have a side impact module, refer to the following instructions:

- Place the **J 39401-B (3)** in the center of the cleared area. See **Special Tools**.
- Fill the deployment fixture with water or sand.
- Using the proper nuts and mount the side impact module (1) to the deployment fixture (3), with the vinyl trim facing up.
- Adjust and secure the fixture arms (4) to the deployment fixture (3).
- Tighten all fasteners that hold the side impact module (1) to the deployment fixture (3).



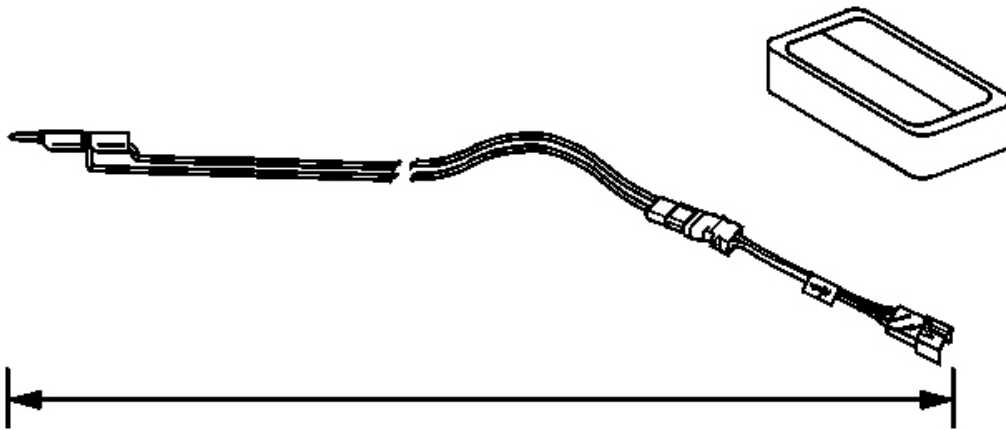
**Fig. 99: Identifying SIR Deployment Harness & Adapter**

**Courtesy of GENERAL MOTORS CORP.**

11. Inspect the **J 38826** and the appropriate pigtail adapter for damage. See **Special Tools**. Replace as needed.
12. Short the 2 SIR deployment harness leads (1) together using one banana plug seated into the other.

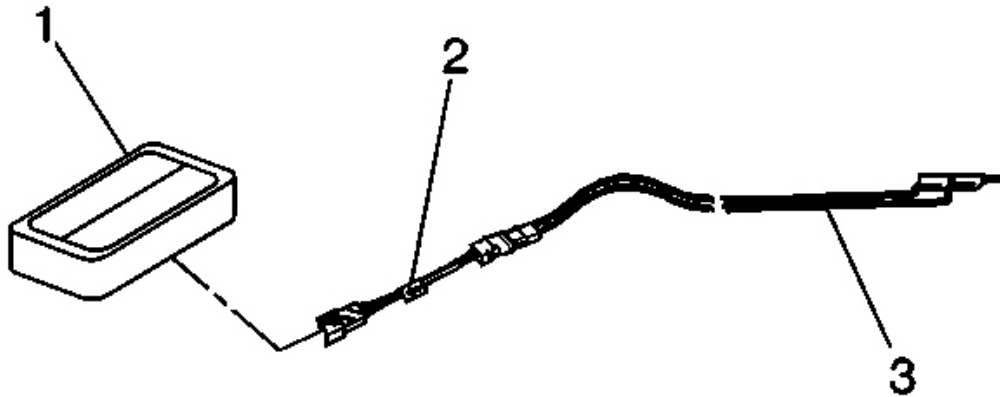
**IMPORTANT: Refer to Tools Required list for the correct adapter.**

13. Connect the appropriate pigtail adapter (2) to the SIR deployment harness (1).



**Fig. 100: Extending SIR Deployment Harness & Adapter**  
**Courtesy of GENERAL MOTORS CORP.**

14. Extend the SIR deployment harness and adapter to full length from the deployment fixture.



**Fig. 101: Inflator Module & SIR Deployment Harness Adapter**  
Courtesy of GENERAL MOTORS CORP.

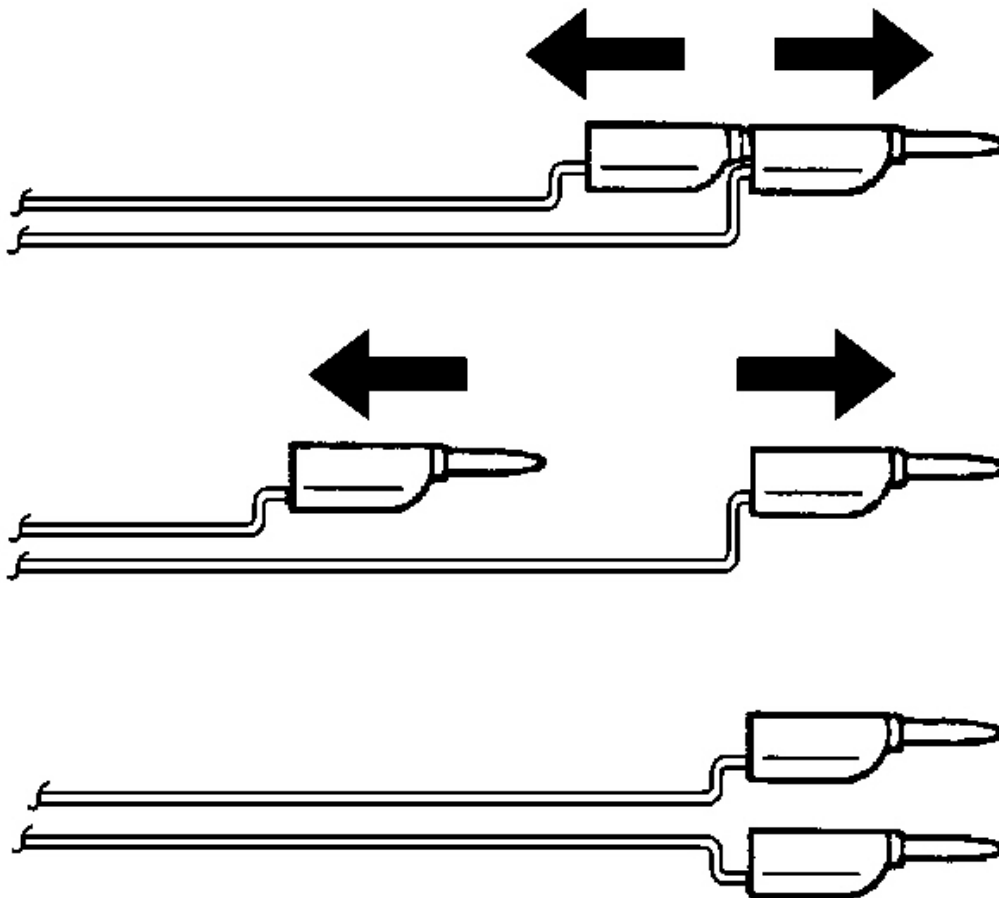
**IMPORTANT:** On the steering wheel dual stage inflator module both connectors must be attached to the deployment harness adapter. This will ensure that both stage 1 and stage 2 of the deployment loops are energized, regardless of the deployment state.

15. Connect the inflator module to the adapter (2) on the SIR deployment harness (1).
16. Place a 12 volt minimum/2 amp minimum power source, i.e., vehicle battery, near the shorted end of the harness.

- IMPORTANT:**
- The rapid expansion of gas involved with deploying an inflator module is very loud. Notify all the people in the immediate area that you intend to deploy the inflator module.
  - When the inflator module deploys, the deployment fixture may jump about 30 cm (1 ft) vertically. This is a normal reaction of the inflator module due to the force of the rapid expansion of gas inside the inflator module.
  - If you are deploying a dual stage inflator module with stage 1 already deployed, the fixture may not move and

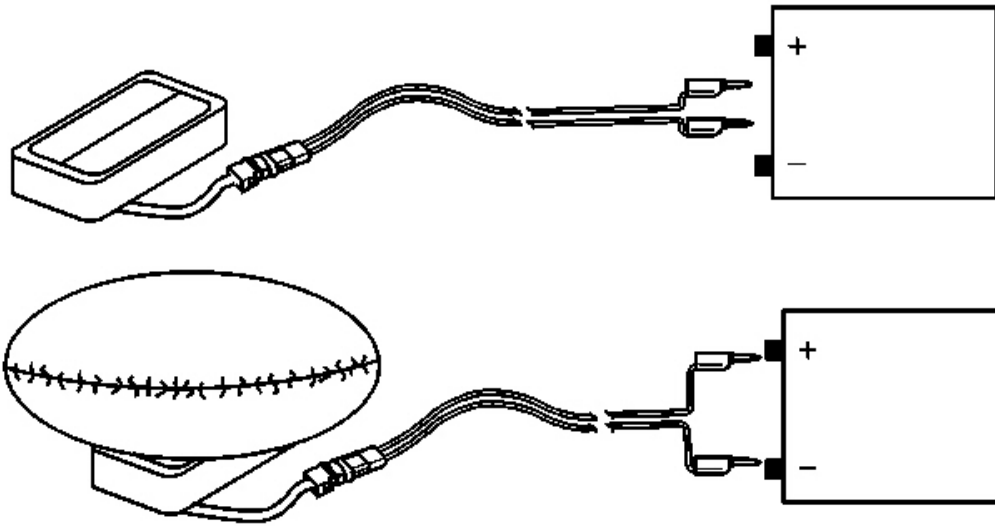
the noise may have been reduced.

17. Clear the area of people.



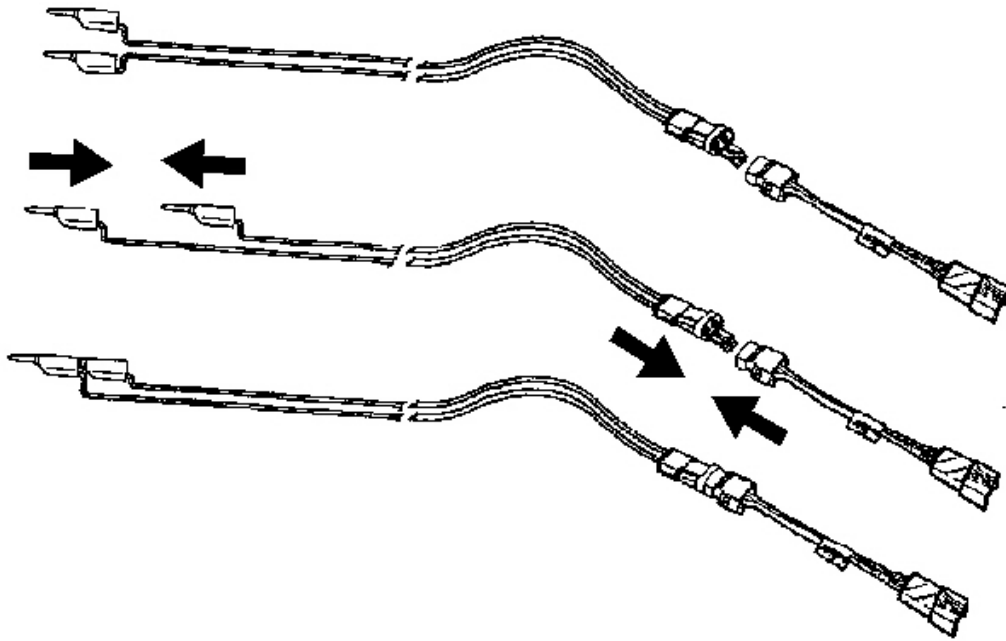
**Fig. 102: Separating Banana Plugs**  
**Courtesy of GENERAL MOTORS CORP.**

18. Separate the 2 banana plugs on the SIR deployment harness.



**Fig. 103: Connecting SIR Deployment Harness Wires To Power Source**  
Courtesy of GENERAL MOTORS CORP.

19. Connect the SIR deployment harness wires to the power source. Inflator module deployment will occur when contact is made.

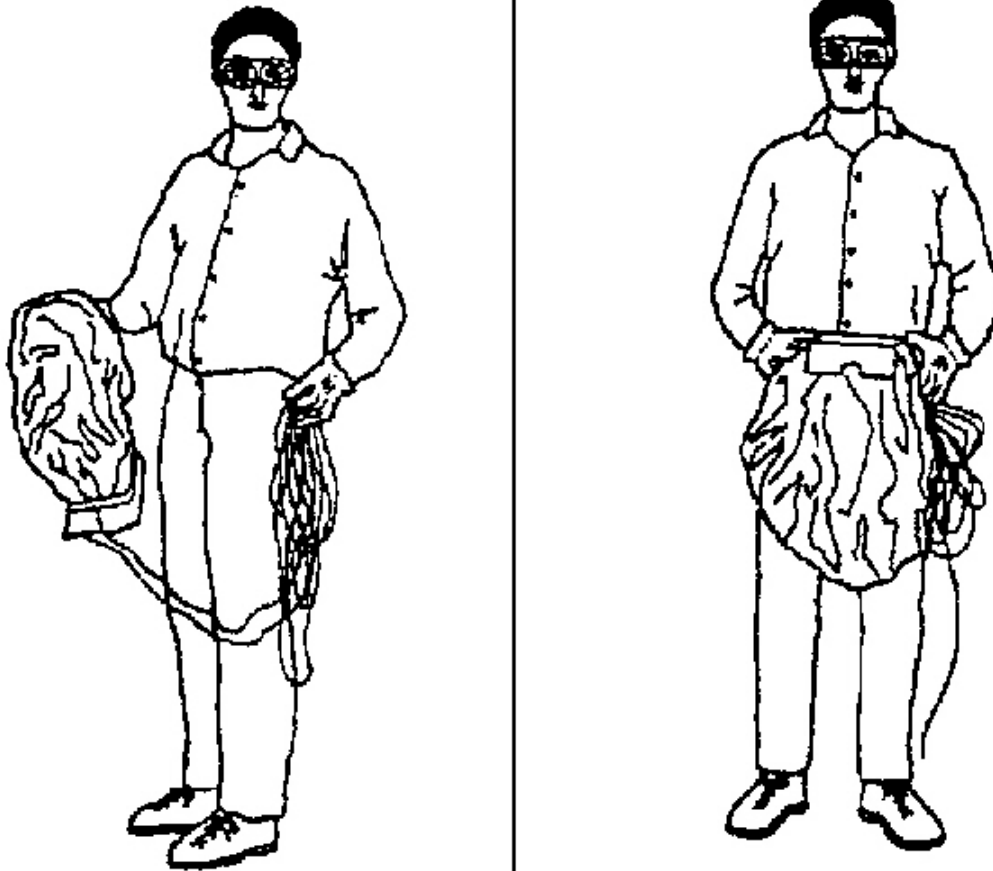


**Fig. 104: View Of Deployment Harness Leads**  
**Courtesy of GENERAL MOTORS CORP.**

20. Disconnect the SIR deployment harness from the power source after the inflator module deploys.
21. If the inflator module did not deploy, disconnect the adapter and discontinue the procedure. Contact the Technical Assistance Group. Otherwise, proceed to the following steps.

**CAUTION: Refer to SIR Deployed Inflator Modules Are Hot Caution in Cautions and Notices.**

22. Seat one banana plug into the other in order to short the deployment harness leads.



**Fig. 105: Disposing Of Deployed Inflator Module**  
**Courtesy of GENERAL MOTORS CORP.**

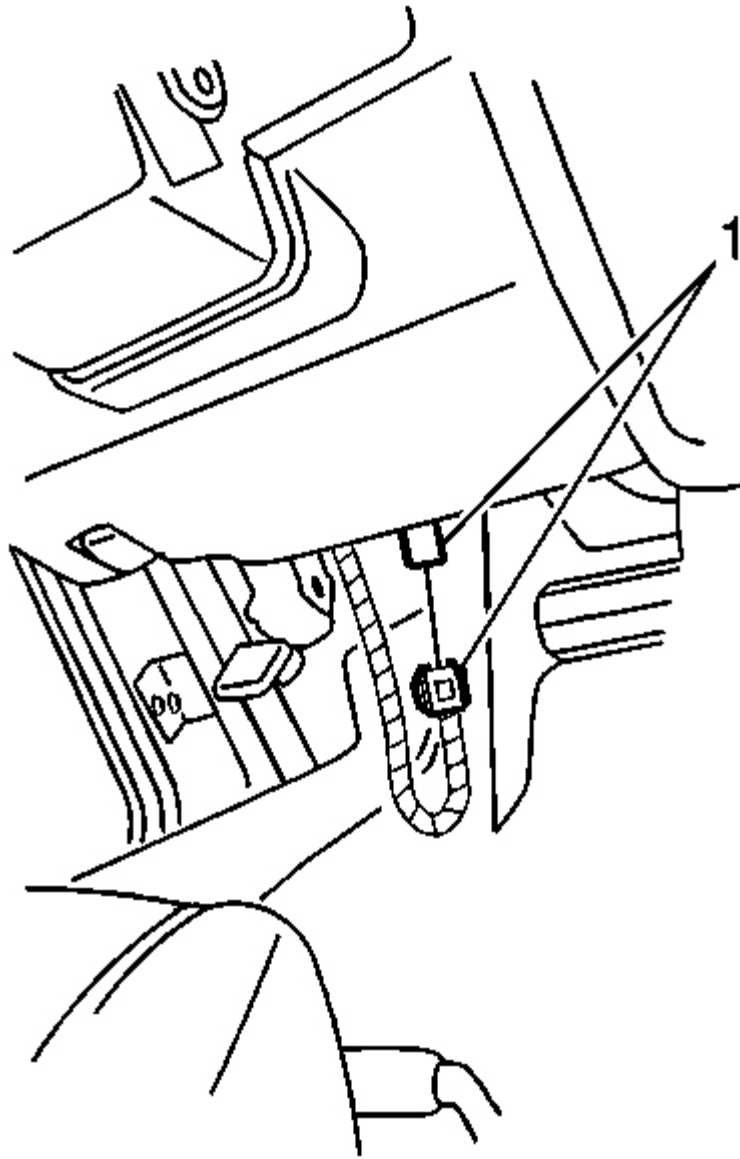
23. Put on a pair of shop gloves.
24. Disconnect the pigtail adapter from the inflator module as soon as possible.
25. Inspect the pigtail adapter and the SIR deployment harness. Replace as needed.
26. Dispose of the deployed inflator module through normal refuse channels.
27. Wash hands with a mild soap.

|                                  |
|----------------------------------|
| <b>2006 Buick Rendezvous CX</b>  |
| 2006 RESTRAINTS SIR - Rendezvous |

Deploy the inflator modules inside of the vehicle when destroying the vehicle or when salvaging the vehicle for parts. This includes but is not limited to the following situations:

- The vehicle has completed its useful life.
- Irreparable damage occurs to the vehicle in a non-deployment type accident.
- Irreparable damage occurs to the vehicle during a theft.
- The vehicle is being salvaged for parts to be used on a vehicle with a different VIN as opposed to rebuilding as the same VIN.

**CAUTION: Refer to SIR Inflatable Module Deployment Outside Vehicle Caution in Cautions and Notices.**



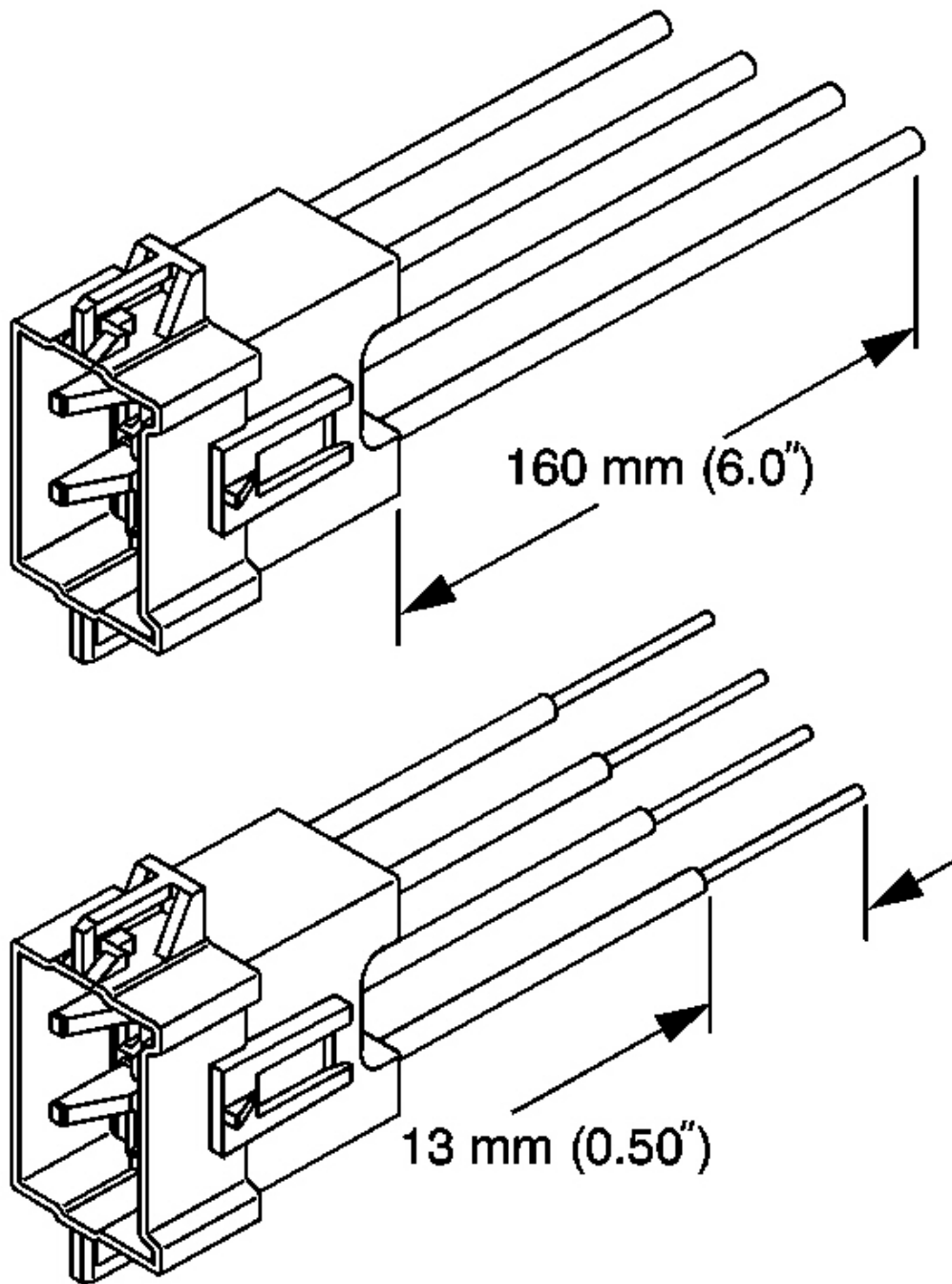
**Fig. 106: Locating Inflation Restraint Steering Wheel Module Coil Connector**  
Courtesy of GENERAL MOTORS CORP.

1. Turn the ignition switch to the OFF position.
2. Remove the ignition key.

3. Put on safety glasses.
4. Remove all loose objects from the front seats.
5. Disable the SIR system. Refer to **SIR Disabling and Enabling Zones**.

**CAUTION: A deployed dual stage inflator module will look the same whether one or both stages were used. Always assume a deployed dual stage inflator module has an active stage 2. Improper handling or servicing can activate the inflator module and cause personal injury.**

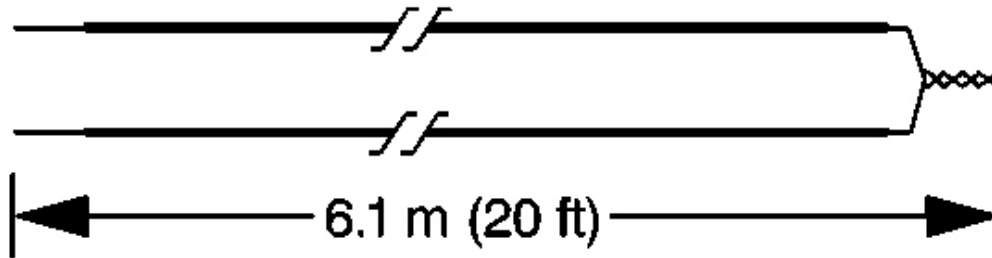
6. Disconnect the steering wheel module yellow connector (4) located next to steering column (2).



**Fig. 107: Stripping SIR Wires**  
Courtesy of GENERAL MOTORS CORP.

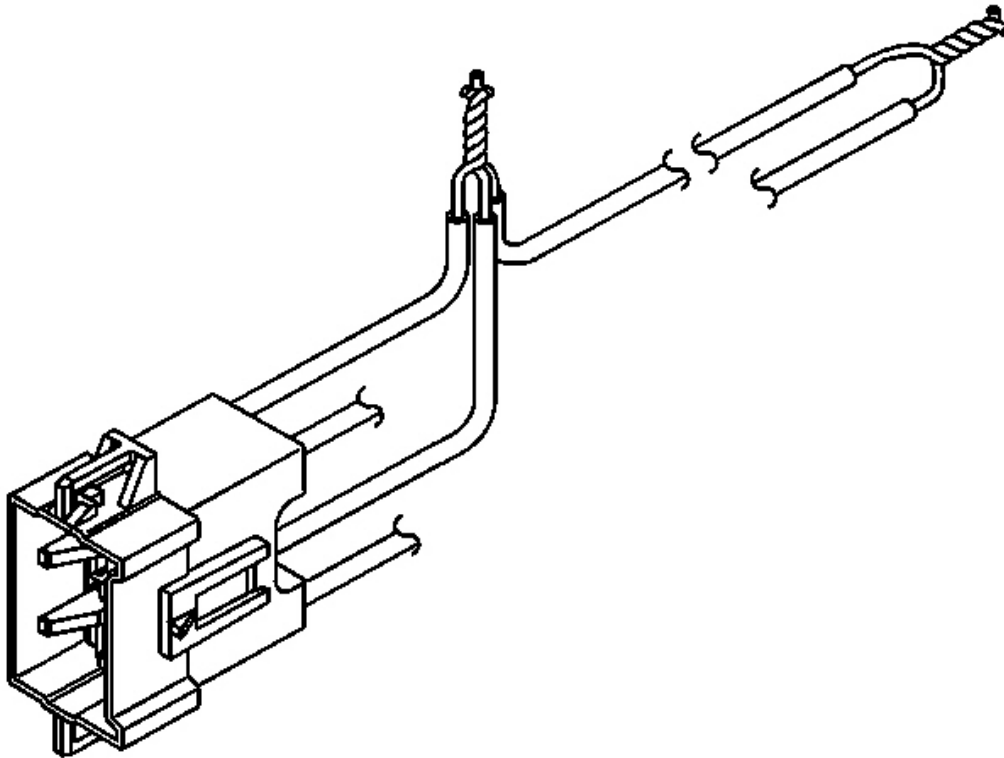
**IMPORTANT:** If the vehicle is equipped with dual stage air bags, the steering wheel module and I/P module will each have 4 wires and standard air bags will only have 2 wires. Refer to SIR Connector End Views for determining high and low circuits.

7. Cut the yellow harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
8. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



**Fig. 108: Fabricating 20 Ft. Deployment Harness**  
Courtesy of GENERAL MOTORS CORP.

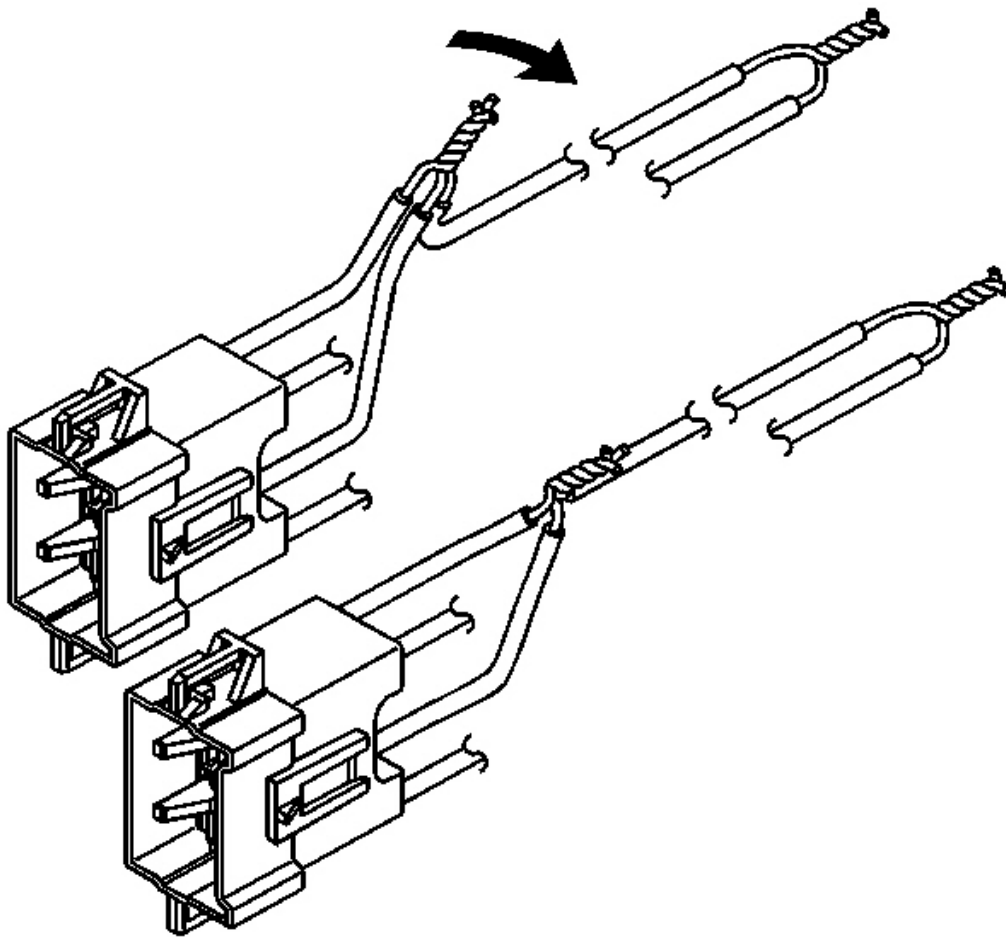
9. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. Use these wires to fabricate the driver deployment harness.
10. Strip 13 mm (0.5 in) of insulation from both ends of the wires cut in the previous step.
11. Twist together one end from each of the wires in order to short the wires. Deployment wires shall remain shorted, and not connected to a power source until you are ready to deploy the inflator module.



**Fig. 109: Twisting Connector Wire Leads (High Circuits) To Deployment Harness Wire**

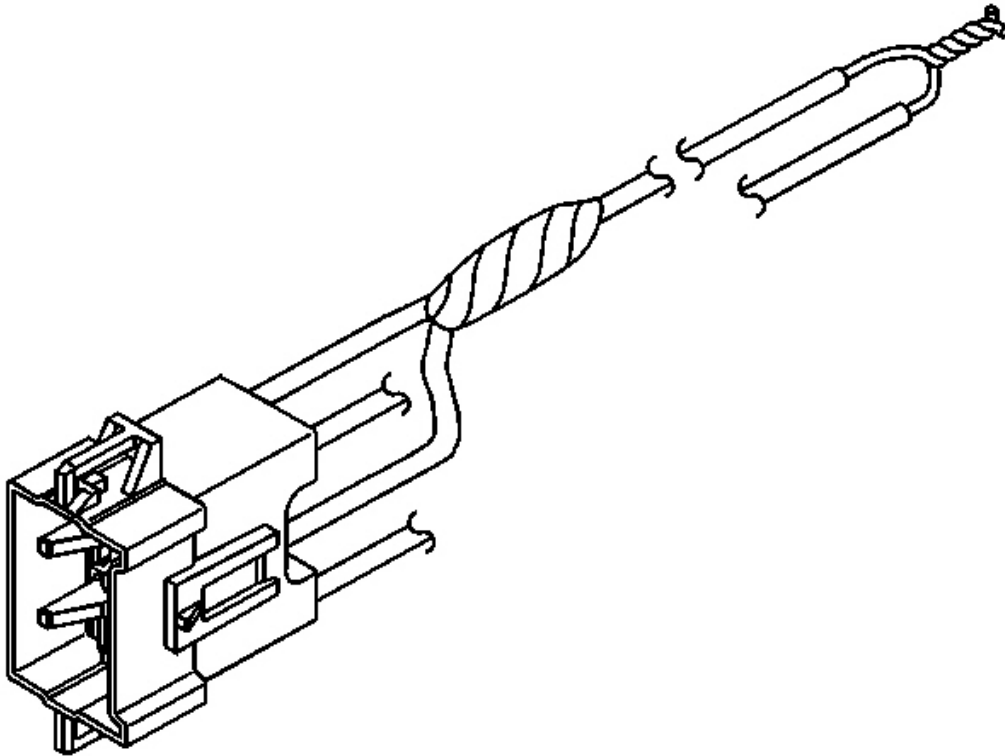
**Courtesy of GENERAL MOTORS CORP.**

12. Twist together the 2 connector wire leads of the high circuits from both stages of the steering wheel module to one of the deployment harness wires. Refer to **SIR Connector End Views** in order to determine the correct circuits.
13. Inspect that the 3 wire connection is secure.



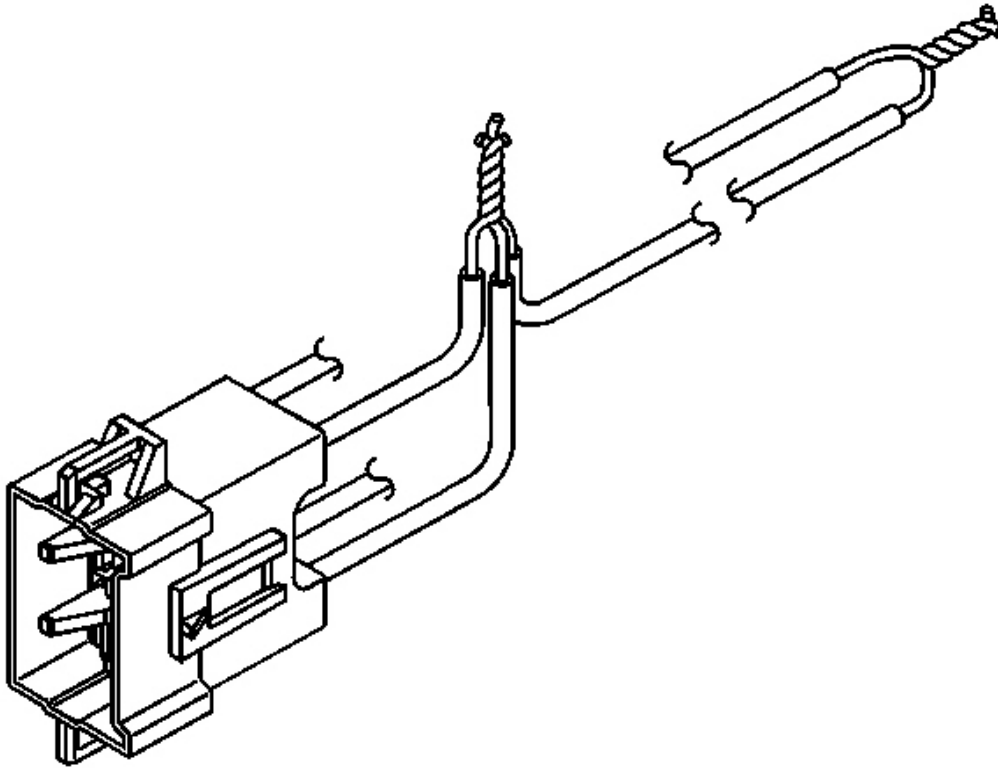
**Fig. 110: Bending Twisted Connection Flat**  
Courtesy of GENERAL MOTORS CORP.

14. Bend flat the twisted connection.



**Fig. 111: Insulating Connection With Electrical Tape**  
Courtesy of GENERAL MOTORS CORP.

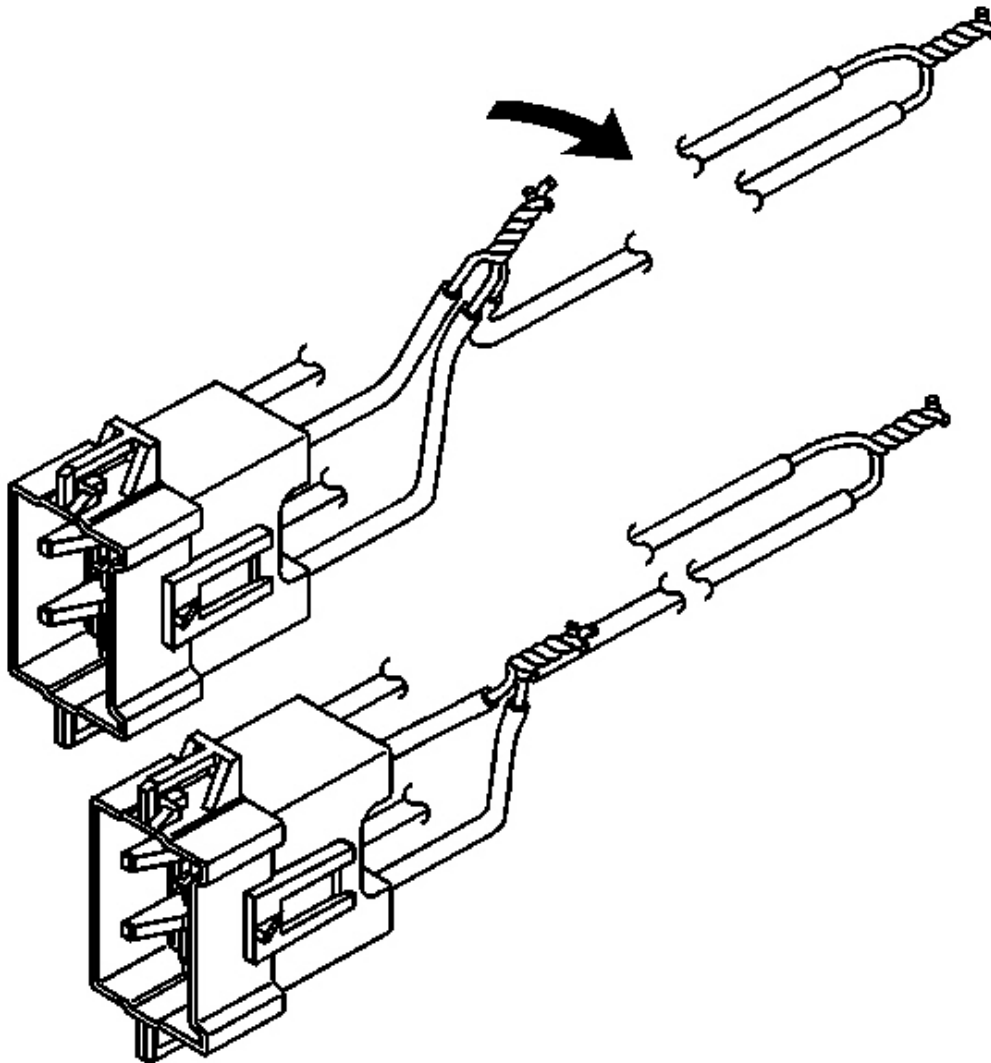
15. Secure and insulate the 3-wire connection to deployment harness using electrical tape.



**Fig. 112: Twisting Connector Wire Leads (Low Circuits) To Deployment Harness Wire**

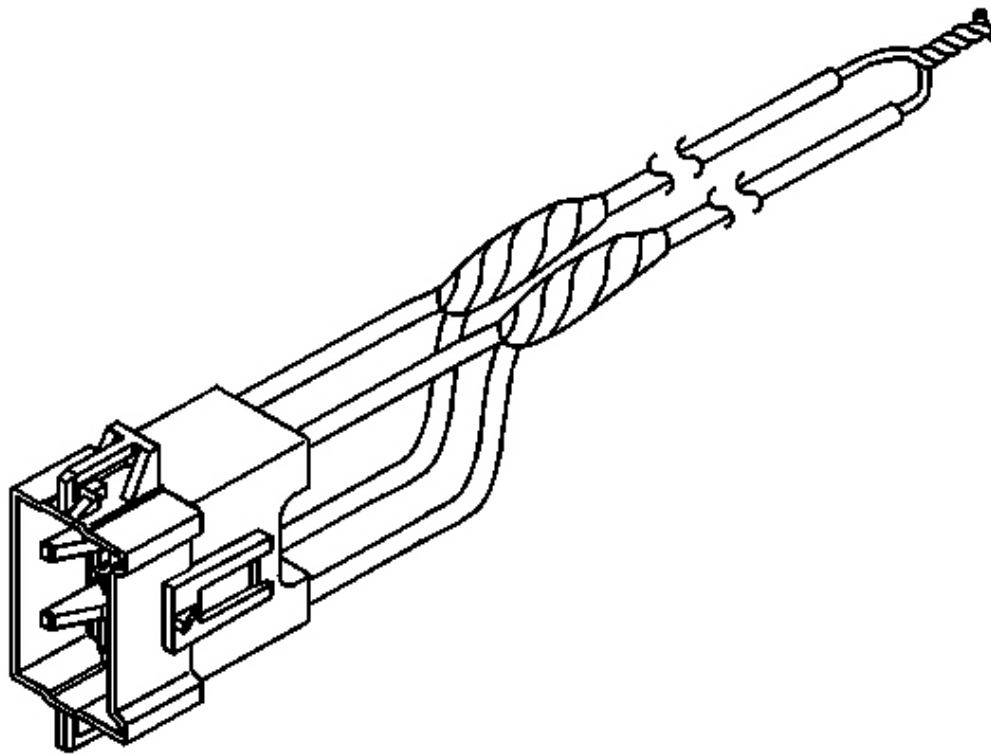
**Courtesy of GENERAL MOTORS CORP.**

16. Twist together 2 connector wire leads of the low circuits from both stages of the steering wheel module to one sets of deployment wires. Refer to **SIR Connector End Views** in order to determine the correct circuits.
17. Inspect that the 3 wire connection is secure.



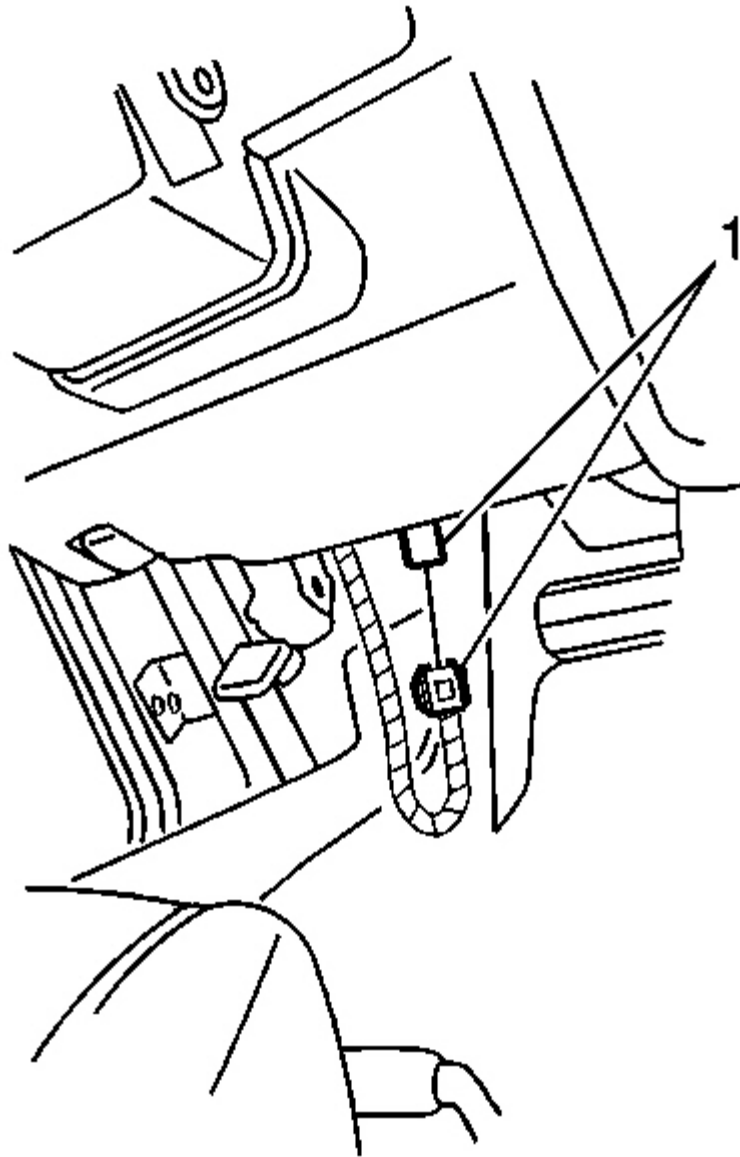
**Fig. 113: Bending Twisted Connection Flat**  
**Courtesy of GENERAL MOTORS CORP.**

18. Bend flat the twisted connection.



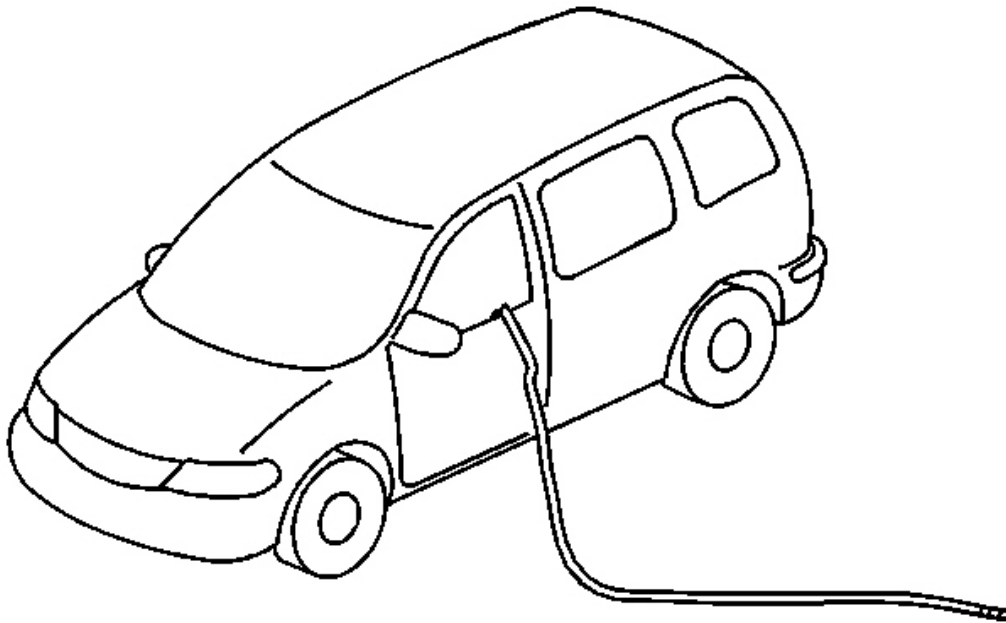
**Fig. 114: Insulating Connection With Electrical Tape**  
**Courtesy of GENERAL MOTORS CORP.**

19. Secure and insulate the 3-wire connection to deployment harness using electrical tape.



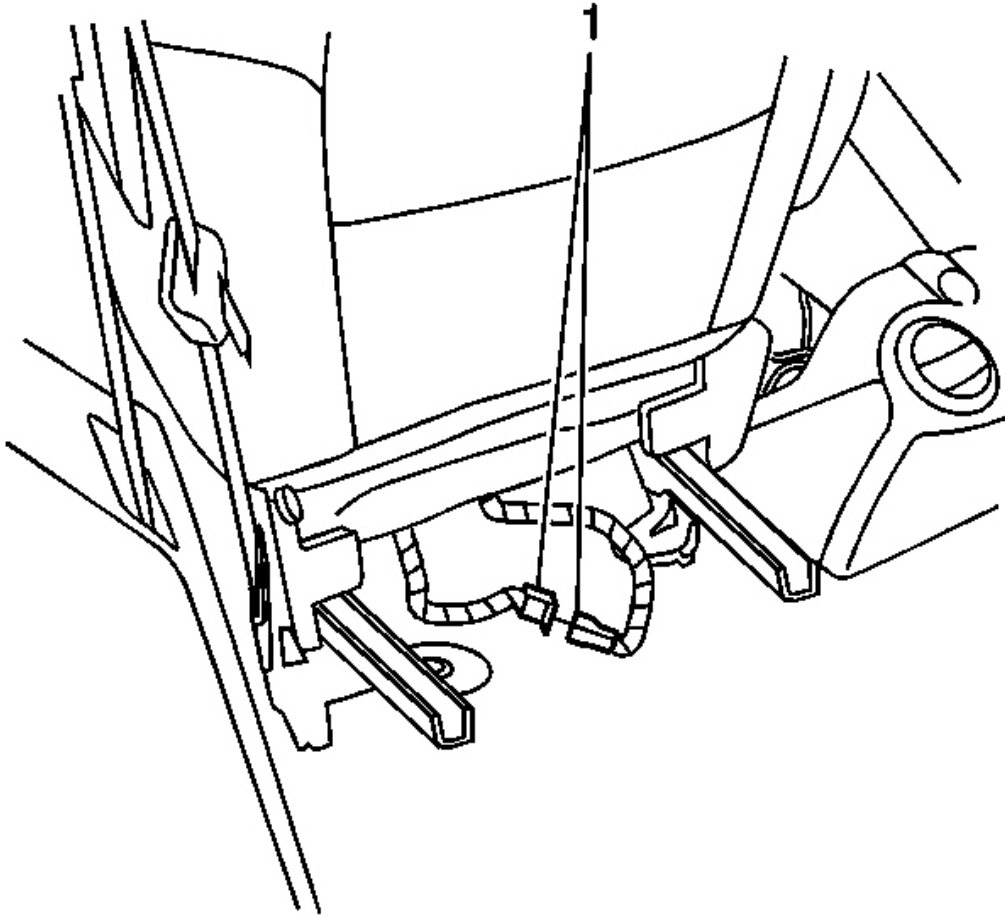
**Fig. 115: Locating Inflation Restraint Steering Wheel Module Coil Connector**  
Courtesy of GENERAL MOTORS CORP.

20. Connect the deployment harness to the steering wheel module in-line connector.



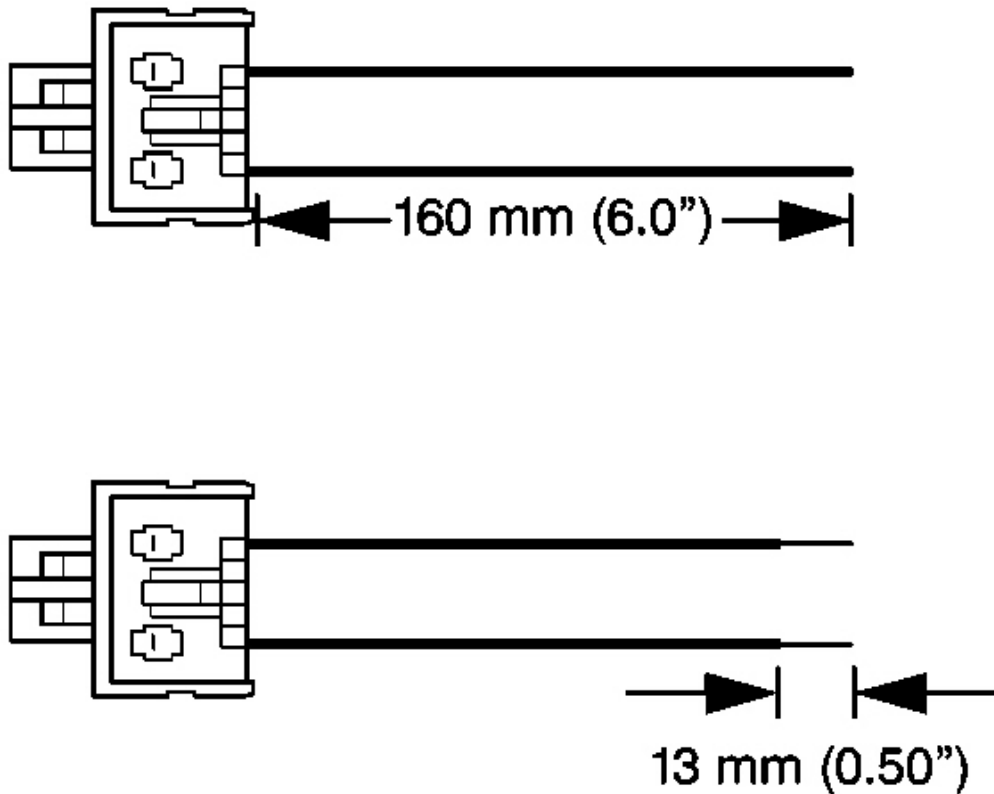
**Fig. 116: Routing Deployment Harness Out of Driver Side Of Vehicle**  
**Courtesy of GENERAL MOTORS CORP.**

21. Route the deployment harness out of the driver side of the vehicle.



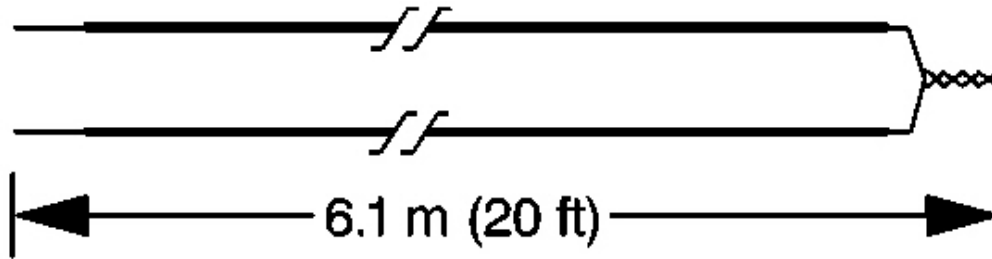
**Fig. 117: View Of Deployment Harness At Side Impact Module**  
**Courtesy of GENERAL MOTORS CORP.**

22. Disconnect the driver side impact module yellow connector (1) from the vehicle wiring harness (4) located under the driver seat.



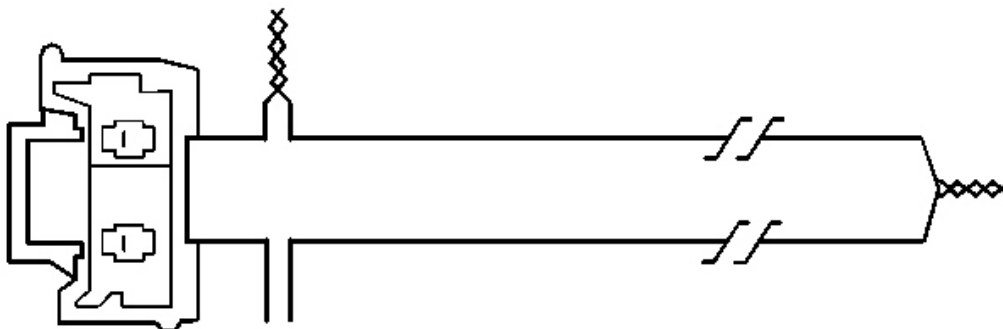
**Fig. 118: Identifying Proper Stripping Of Connection Wire Leads**  
Courtesy of GENERAL MOTORS CORP.

23. Cut the 2 side impact module wires leading to the yellow harness connector, leaving at least 16 cm (6 in) of wire at the connector.
24. Strip 13 mm (0.5 in) of insulation from each of the side impact module connector wire leads.



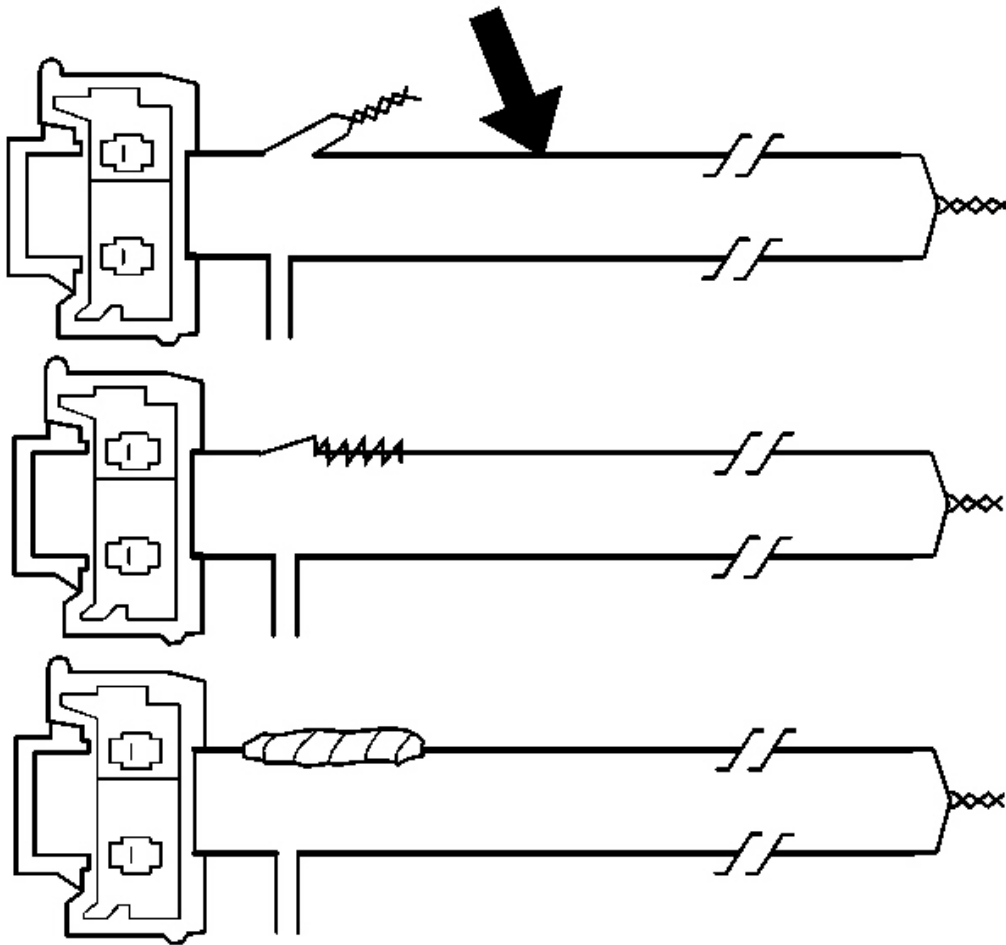
**Fig. 119: Fabricating 20 Ft. Deployment Harness**  
Courtesy of GENERAL MOTORS CORP.

25. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. Use these wires to fabricate the deployment harness.
26. Strip 13 mm (0.5 in) of insulation from both ends of the wires cut in the previous step.
27. Twist together one end from each of the wires in order to short the wires. Deployment wires shall remain shorted, and not connected to a power source until you are ready to deploy the side impact module.



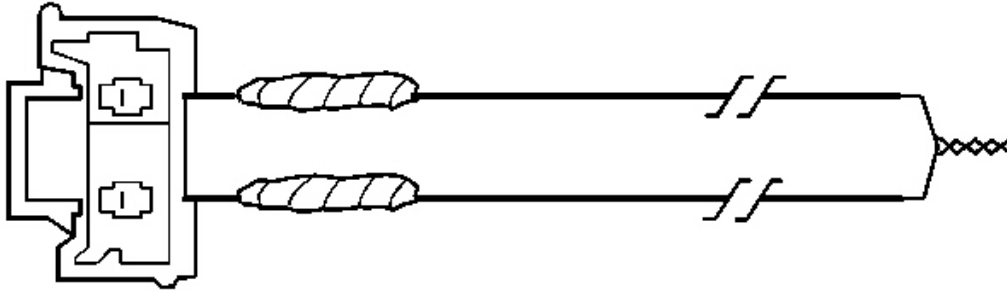
**Fig. 120: View Of Twisted Connector Wire To Deployment Wire**  
Courtesy of GENERAL MOTORS CORP.

28. Twist together one connector wire lead to one deployment wire.
29. Inspect that the previous connection is secure.



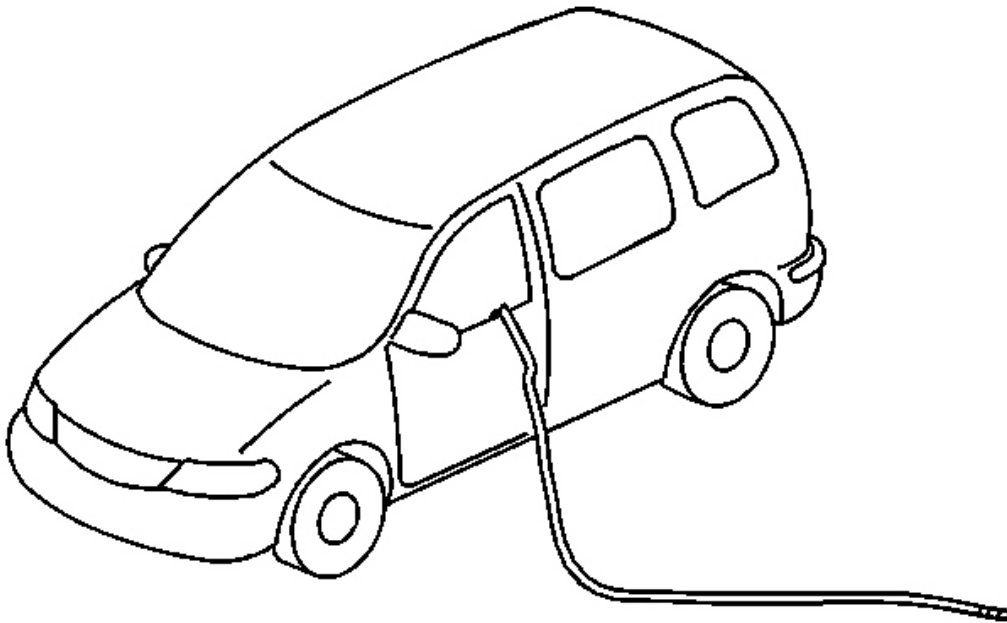
**Fig. 121: Bending The Twisted Connection Flat & Insulating With Tape**  
**Courtesy of GENERAL MOTORS CORP.**

30. Bend flat the twisted connection.
31. Secure and insulate the connection using electrical tape.



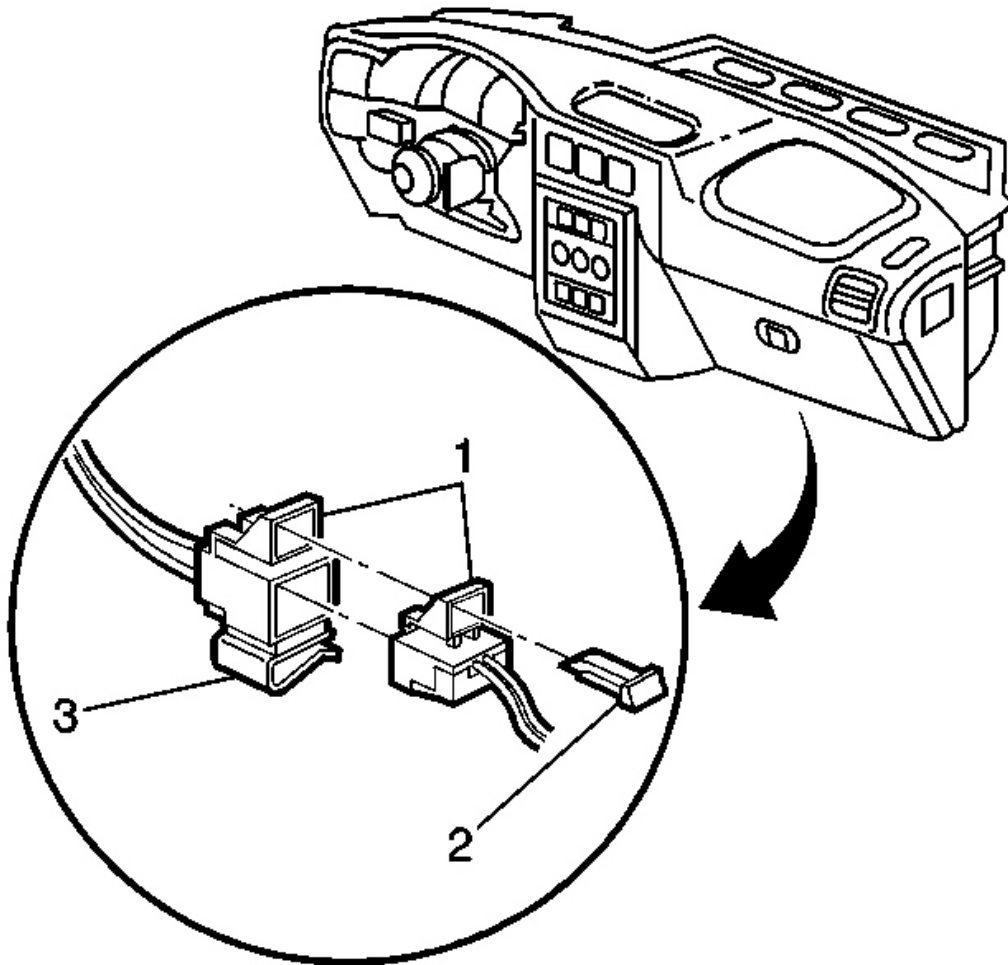
**Fig. 122: View Of Insulated Connector Wire To Deployment Wire**  
**Courtesy of GENERAL MOTORS CORP.**

32. Twist together, bend, and tape the remaining connector wire lead to the remaining deployment wire.
33. Connect the deployment harness to the side impact module LF.



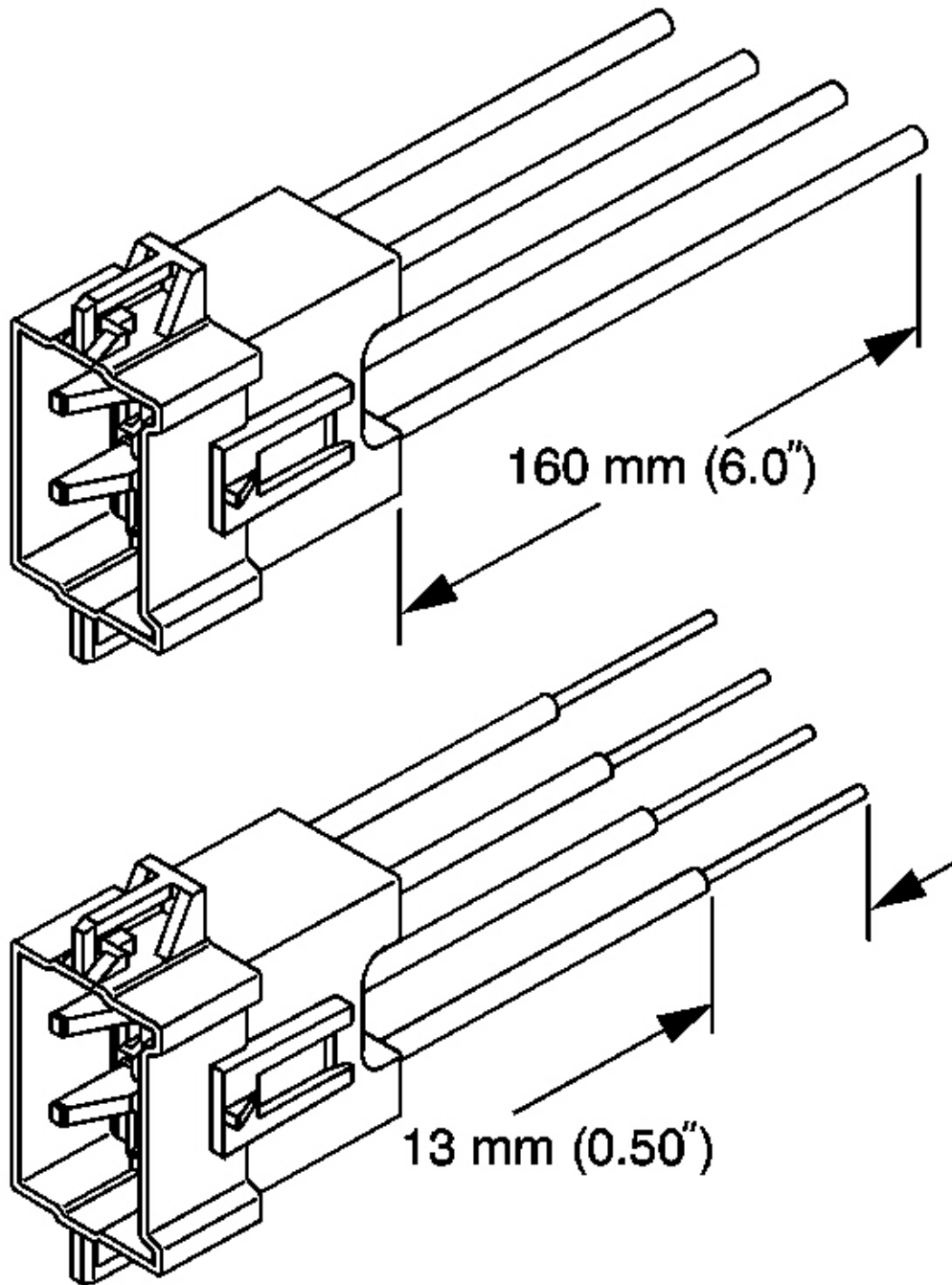
**Fig. 123: Routing Deployment Harness Out of Driver Side Of Vehicle**  
**Courtesy of GENERAL MOTORS CORP.**

34. Route the deployment harness out of the driver side of the vehicle.



**Fig. 124: Identifying Inflatable Restraint IP Module Connector**  
**Courtesy of GENERAL MOTORS CORP.**

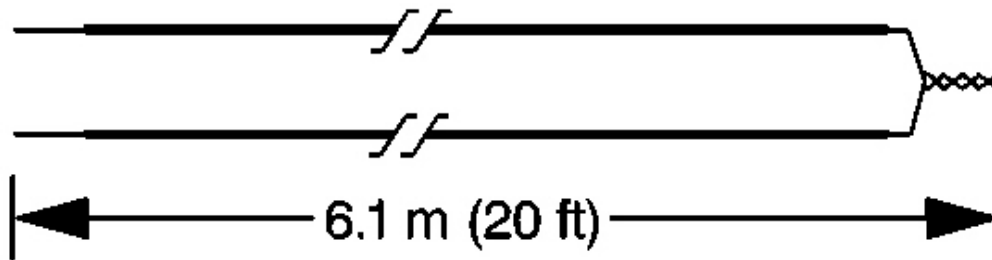
35. Disconnect the I/P module yellow harness connector (2) above passenger side sound insulator.



**Fig. 125: Stripping SIR Wires**  
Courtesy of GENERAL MOTORS CORP.

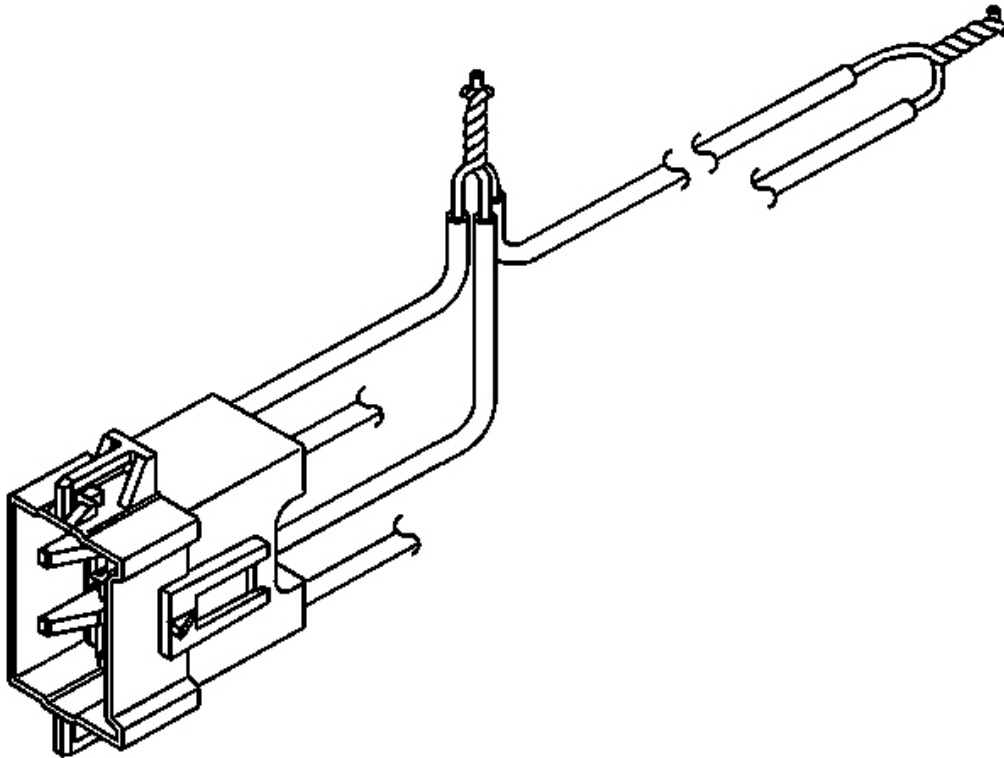
**IMPORTANT:** If vehicle is equipped with dual stage air bags, the I/P module will each have 4 wires and standard air bags will only have 2 wires. Refer to SIR Connector End Views for determining high and low circuits.

36. Cut the yellow harness connector out of the vehicle, leaving at least 16 cm (6 in) of wire at the connector.
37. Strip 13 mm (0.5 in) of insulation from each of the connector wire leads.



**Fig. 126: Fabricating 20 Ft. Deployment Harness**  
Courtesy of GENERAL MOTORS CORP.

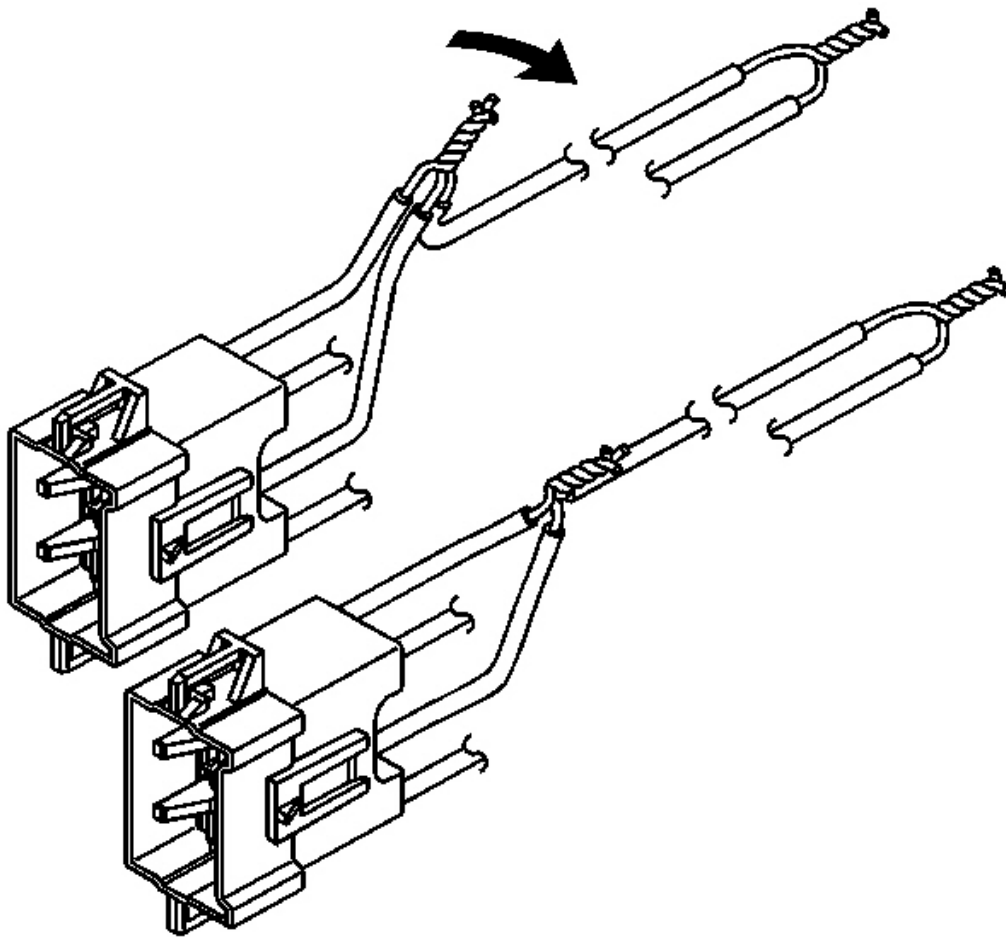
38. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. These wires will be used to fabricate the passenger deployment harness.
39. Strip 13 mm (0.5 in) of insulation from both ends of the wires cut in the previous step.
40. Twist together one end from each of the wires in order to short the wires.



**Fig. 127: Twisting Connector Wire Leads (High Circuits) To Deployment Harness Wire**

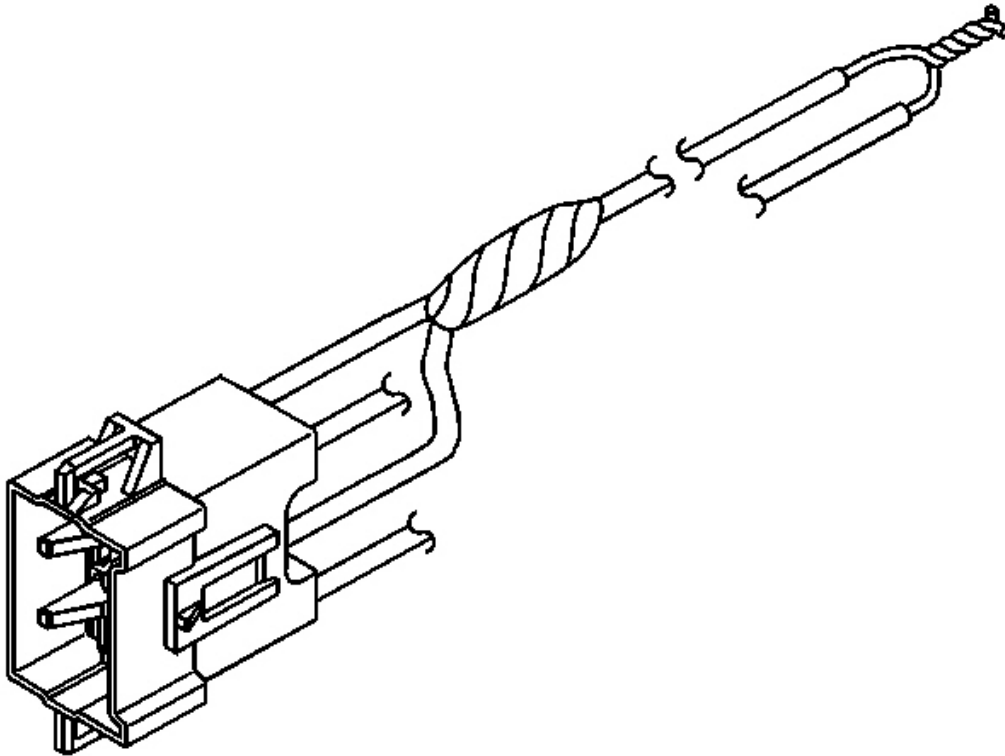
**Courtesy of GENERAL MOTORS CORP.**

41. Twist together the 2 connector wire leads of the high circuits from both stages of the I/P module to one of the deployment harness wires. Refer to **SIR Connector End Views** in order to determine the correct circuits.
42. Ensure the 3-wire connection is secure.



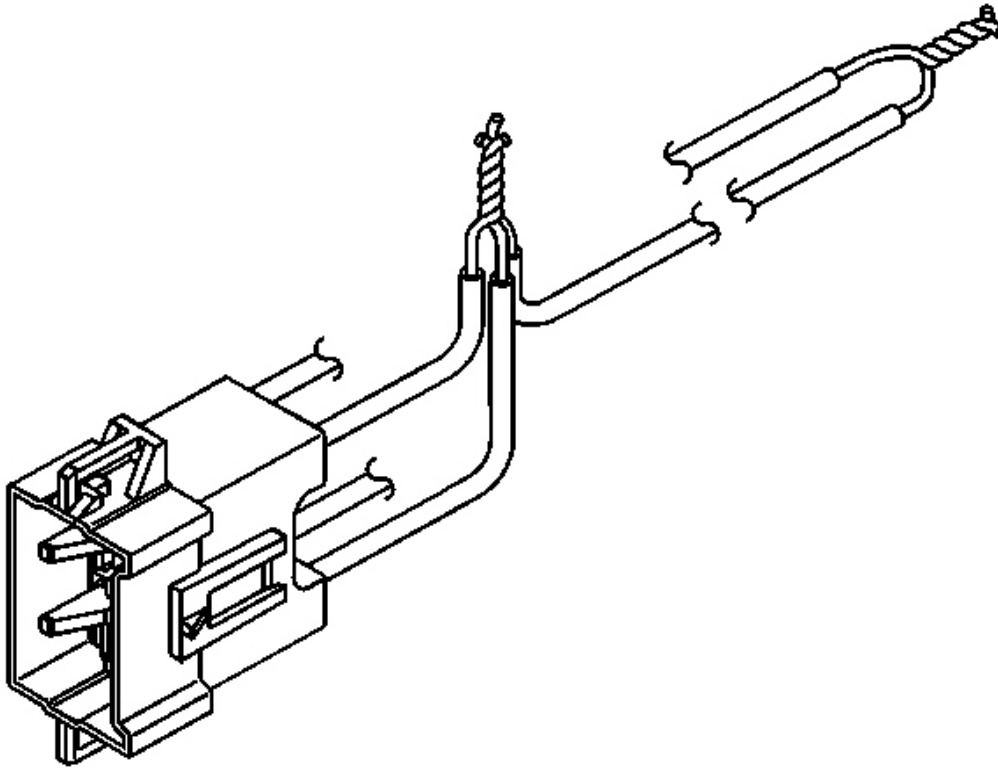
**Fig. 128: Bending Twisted Connection Flat**  
Courtesy of GENERAL MOTORS CORP.

43. Bend flat the twisted connection.



**Fig. 129: Insulating Connection With Electrical Tape**  
Courtesy of GENERAL MOTORS CORP.

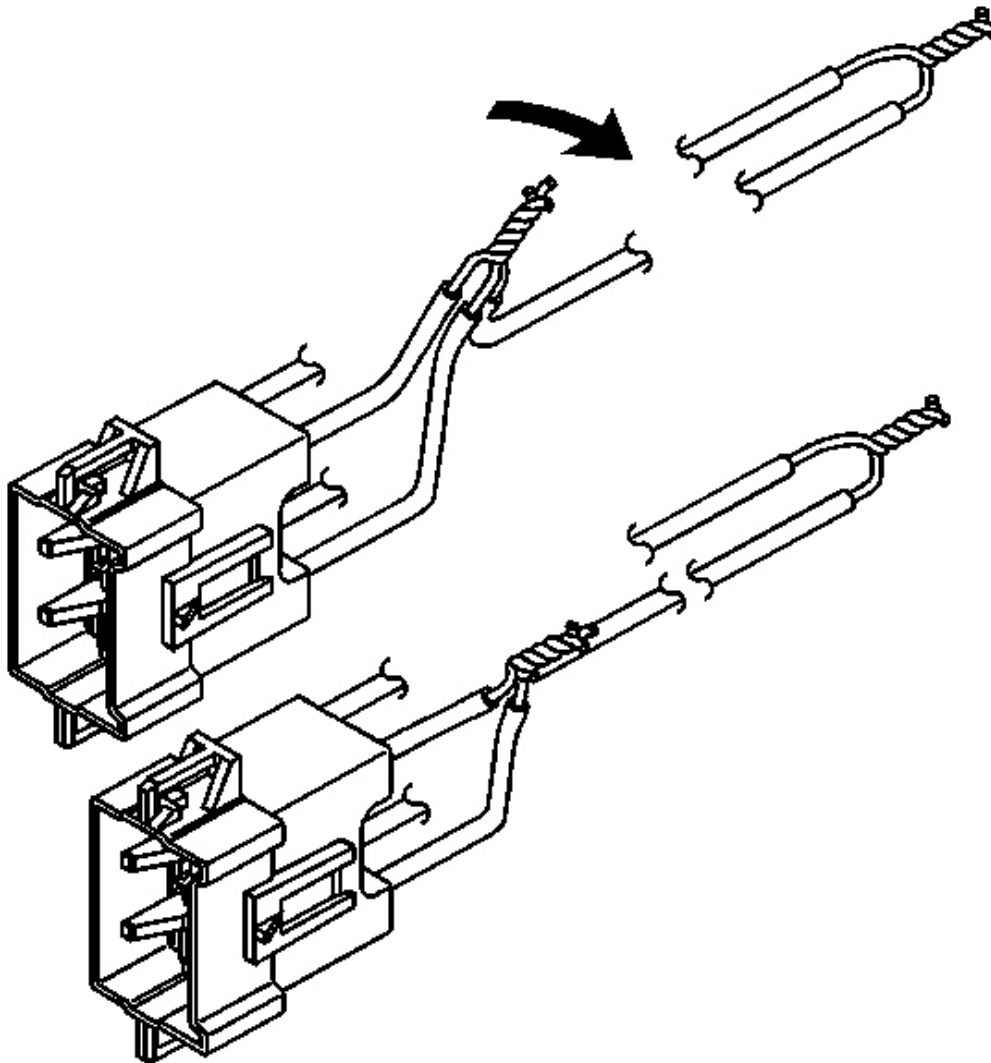
44. Secure and insulate the 3-wire connection to deployment harness using electrical tape.



**Fig. 130: Twisting Connector Wire Leads (Low Circuits) To Deployment Harness Wire**

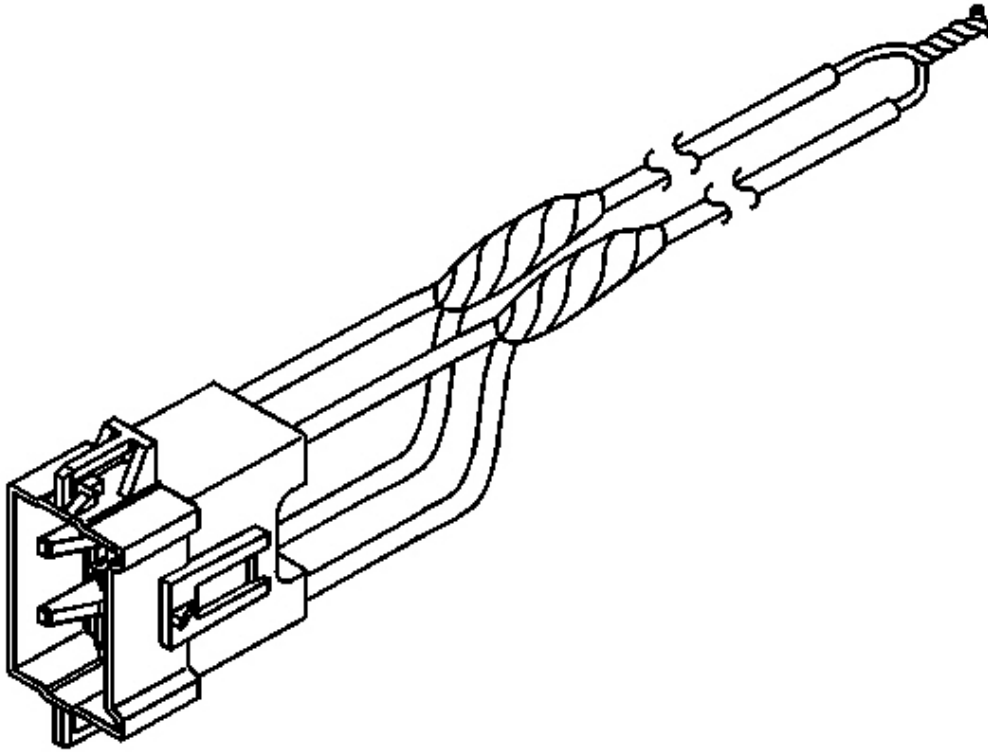
**Courtesy of GENERAL MOTORS CORP.**

45. Twist together the two connector wire leads of the low circuits from both stages of the I/P module to the deployment harness wire. Refer to **SIR Connector End Views** in order to determine the correct circuits.
46. Ensure the 3-wire connection is secure.



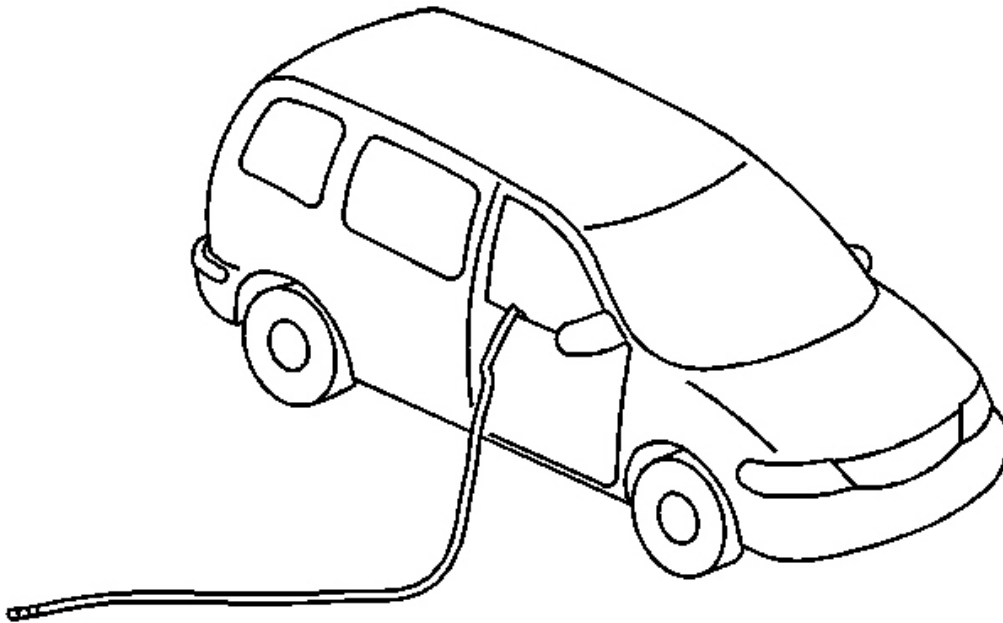
**Fig. 131: Bending Twisted Connection Flat**  
**Courtesy of GENERAL MOTORS CORP.**

47. Bend flat the twisted connection.



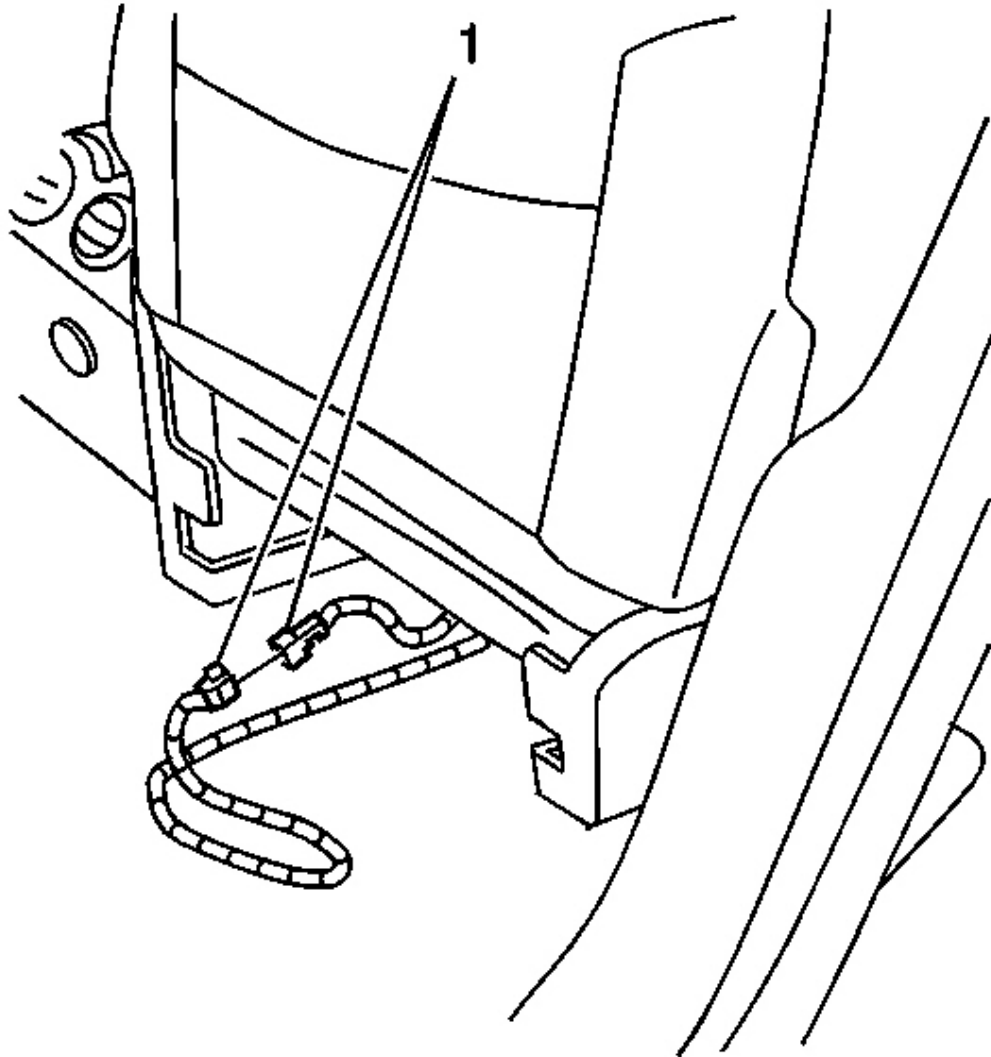
**Fig. 132: Insulating Connection With Electrical Tape**  
**Courtesy of GENERAL MOTORS CORP.**

48. Secure and insulate the 3-wire connection to deployment harness using electrical tape.
49. Connect the deployment harness to the I/P module in-line connector.



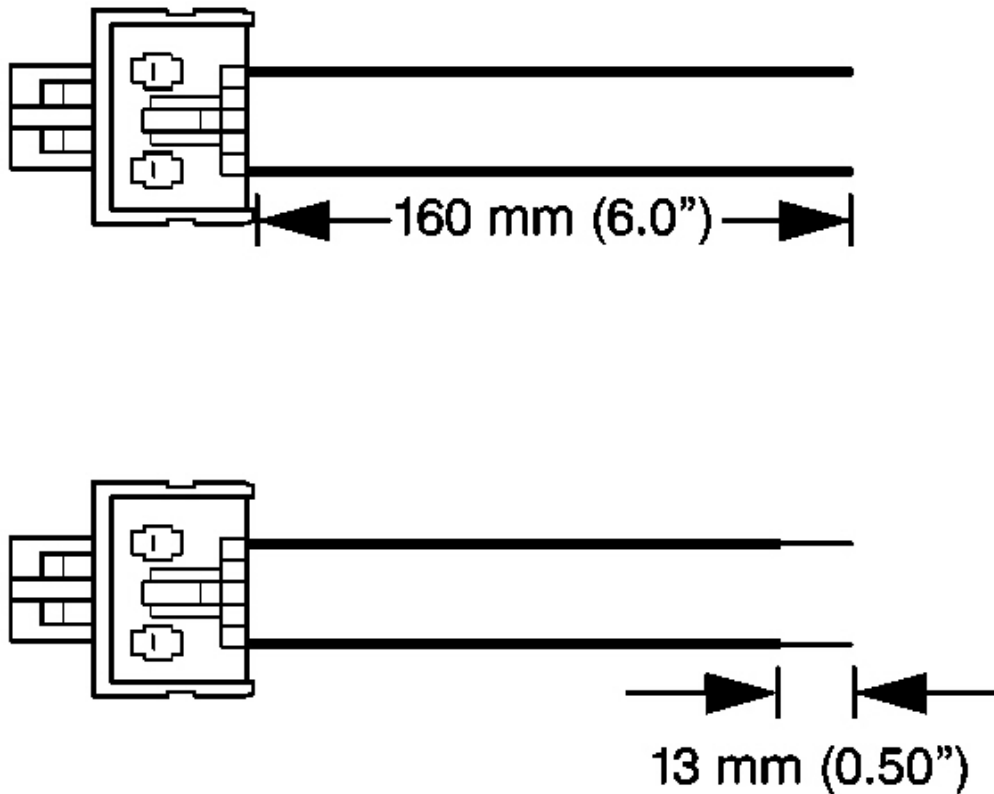
**Fig. 133: Routing Deployment Harness Out Of Passenger Side Of Vehicle**  
**Courtesy of GENERAL MOTORS CORP.**

50. Route the deployment harness out of the passenger side of the vehicle.



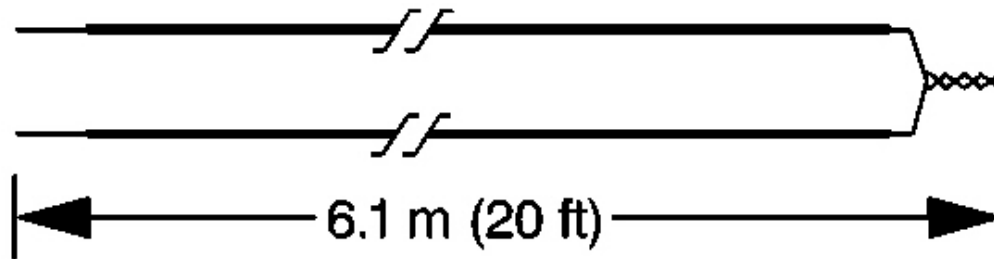
**Fig. 134: Identifying Passenger Side Impact Module Yellow Connector**  
**Courtesy of GENERAL MOTORS CORP.**

51. Disconnect the passenger side impact module yellow connector (1) from the vehicle wiring harness located under the passenger seat.



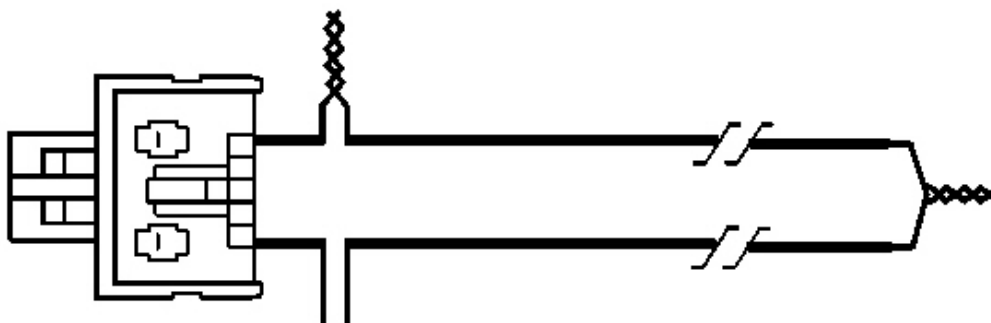
**Fig. 135: Identifying Proper Stripping Of Connection Wire Leads**  
Courtesy of GENERAL MOTORS CORP.

52. Cut the 2 side impact module wires leading to the yellow harness connector, leaving at least 16 cm (6 in) of wire at the connector.
53. Strip 13 mm (0.5 in) of insulation from each of the side impact module connector wire leads.



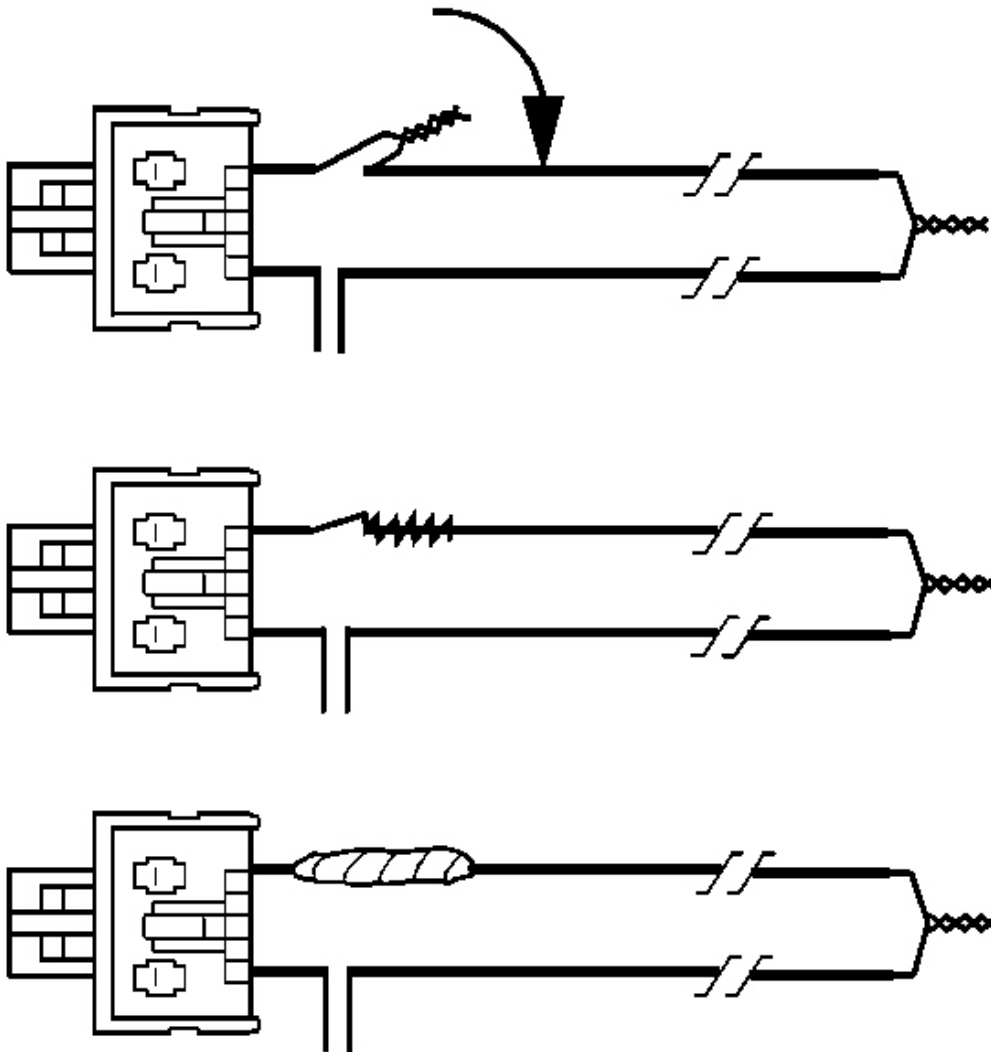
**Fig. 136: Fabricating 20 Ft. Deployment Harness**  
Courtesy of GENERAL MOTORS CORP.

54. Cut two 6.1 m (20 ft) deployment wires from a 0.8 mm (18 gage) or thicker multi-strand wire. Use these wires to fabricate the deployment harness.
55. Strip 13 mm (0.5 in) of insulation from both ends of the wires cut in the previous step.
56. Twist together one end from each of the wires in order to short the wires. Deployment wires shall remain shorted, and not connected to a power source until you are ready to deploy the side air bag module.



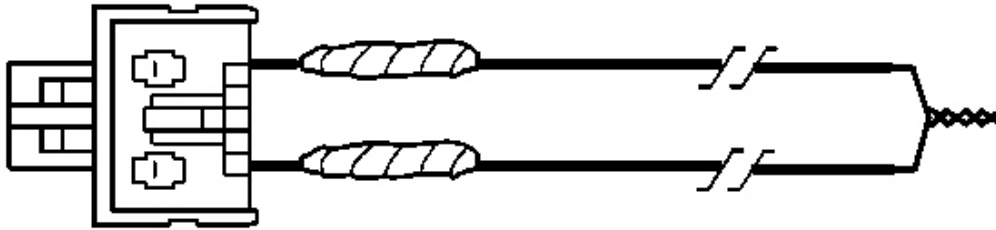
**Fig. 137: View Of Proper Twisting Of Connector Wire Lead To Deployment Wire**  
Courtesy of GENERAL MOTORS CORP.

57. Twist together one connector wire lead to one deployment wire.
58. Inspect that the previous connection is secure.



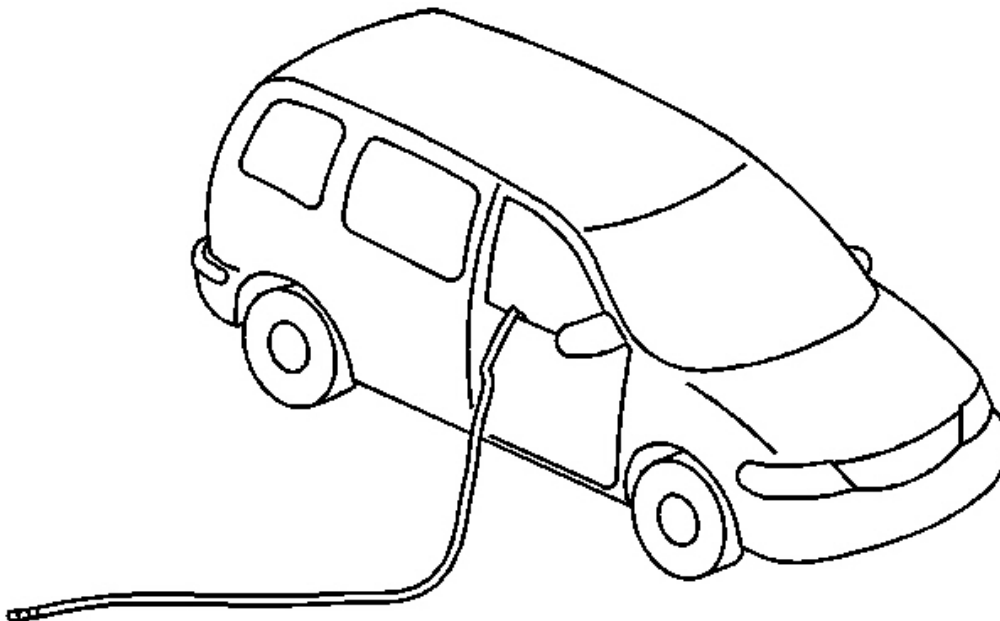
**Fig. 138: Bending Twisted Connection Flat & Insulating With Tape**  
**Courtesy of GENERAL MOTORS CORP.**

59. Bend flat the twisted connection.
60. Secure and insulate the connection using electrical tape.



**Fig. 139: Taping Remaining Connector Wire Lead To Remaining Deployment Wire**  
Courtesy of GENERAL MOTORS CORP.

61. Twist together, bend, and tape the remaining connector wire lead to the remaining deployment wire.
62. Connect the deployment harness to the side impact module RF.



**Fig. 140: Routing Deployment Harness Out Of Passenger Side Of Vehicle**  
**Courtesy of GENERAL MOTORS CORP.**

63. Route the deployment harness out of the passenger side of the vehicle.
64. Completely cover the windshield and front door window openings with a drop cloth.
65. Stretch out all of the deployment harness wires on the left and right side of the vehicle to their full length.
66. Deploy each deployment loop one at a time.
67. Place a power source, 12-volt minimum/2-amp minimum, i.e., a vehicle battery, near the shorted end of the harnesses.
68. Separate the one set of wires and touch the wires ends to the power source in order to deploy the inflator modules, doing one module at a time.
69. Disconnect the deployment harness from the power source and twist the wire ends together.
70. Continue the same process with the remaining deployment harnesses that are available.
71. Remove the drop cloth from the vehicle.
72. Disconnect all harnesses from the vehicle.
73. Discard the harnesses.
74. Scrap the vehicle in the same manner as a non-SIR equipped vehicle.
75. If one or all of the inflator modules did not deploy, perform the following steps to remove the undeployed modules from the vehicle:
  - If the steering wheel module did not deploy, refer to **Inflatable Restraint Steering Wheel Module Replacement**.
  - If the I/P module did not deploy, refer to **Inflatable Restraint Instrument Panel Module Replacement**.
  - If the side impact module LF did not deploy, refer to **Inflatable Restraint Side Impact Module Replacement - LH**.
  - If the side impact module RF did not deploy, refer to **Inflatable Restraint Side Impact Module Replacement - RH**.
76. Call Technical Assistance Group.

**PRETENSIONER HANDLING AND SCRAPPING**

**CAUTION:** When you are carrying an undeployed seat belt pretensioner:

- **Do not carry the seat belt pretensioner by the wires or connector on the pretensioner.**

- **Do not touch the seat belt pretensioner in the area of the cable (1).**
- **Do not cover the tube opening with your hand.**
- **Keep the open end of the tube pointed away from you. Do not point the open end of the tube at another person.**
- **When the pretensioner deploys the cable retracts. This shortens the pretensioner between the buckle and the mounting bolt. Grasp the pretensioner by the piston tube (2).**

**Disregarding these precautions may result in personal injury or unnecessary SIR system repairs.**

#### **Scrapping Procedure**

During the course of a vehicle's useful life, certain situations may arise which will necessitate the disposal of a live (undeployed) pretensioner. The following information covers the proper procedures for the disposing of a live (undeployed) pretensioner. Deploy the pretensioner before disposal. Do not dispose of a live (undeployed) pretensioner through normal disposal channels until the pretensioner has been deployed. The following information covers the proper procedures for the disposing of a live (undeployed) pretensioner.

- After replacement of a pretensioner under warranty. The pretensioner may need to be returned undeployed to the original manufacturer of pretensioner.
- If the vehicle is the subject of a Product Liability report related to the supplemental inflatable restraint (SIR) system and is subject to a Preliminary Investigation (GM-1241). Do not alter the SIR system in any manner.
- If the vehicle is involved in a campaign affecting the pretensioners. Follow the instructions in the Campaign Service Bulletin for proper SIR handling procedures.

#### **Deployment Procedures**

The pretensioner can be deployed inside or outside of the vehicle. The method used depends upon the final disposition of the vehicle. Review the following procedures in order to determine which will work best in a given situation.

#### **Deployment Inside the Vehicle**

Refer to **Inflator Module Handling and Scrapping** for deploying the pretensioner inside

vehicle in Vehicle Scrapping Procedure.

#### Deployment Outside Vehicle for Seat Belt Pretensioners

Deploy the seat belt pretensioners outside of the vehicle when the vehicle will be returned to service. Situations that require deployment outside of the vehicle include the following:

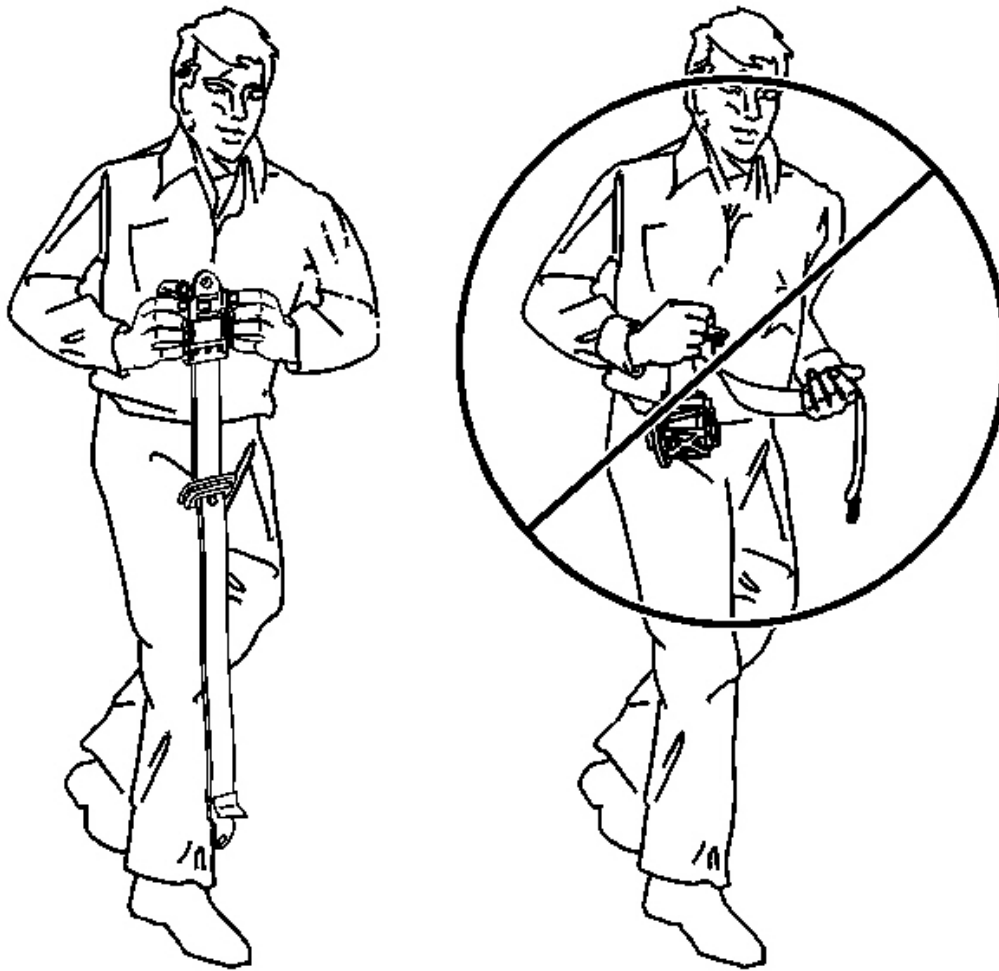
- Using the SIR diagnostics, you determine that the seat belt pretensioner is malfunctioning.
- The pretensioner pigtail is damaged.
- The pretensioner connector is damaged.
- The pretensioner connector terminal is damaged.

Deployment and disposal of a malfunctioning seat belt pretensioner is subject to any required retention period.

**CAUTION:** In order to prevent accidental deployment of the pretensioner which could cause personal injury, do not dispose of an undeployed pretensioner as normal shop waste. The undeployed pretensioner contains substances that could cause severe illness or personal injury if the sealed container is damaged during disposal. Use the following deployment procedures to safely dispose of an undeployed pretensioner. Failure to dispose of a pretensioner as instructed may be a violation of federal, state, or local laws.

#### Tools Required

- **J 38826** SIR Deployment Harness. See Special Tools.
- **J 38826 -25** for seat belt pretensioner module adapter. See Special Tools.
- **J 39401-B** SIR Deployment Fixture. See Special Tools.

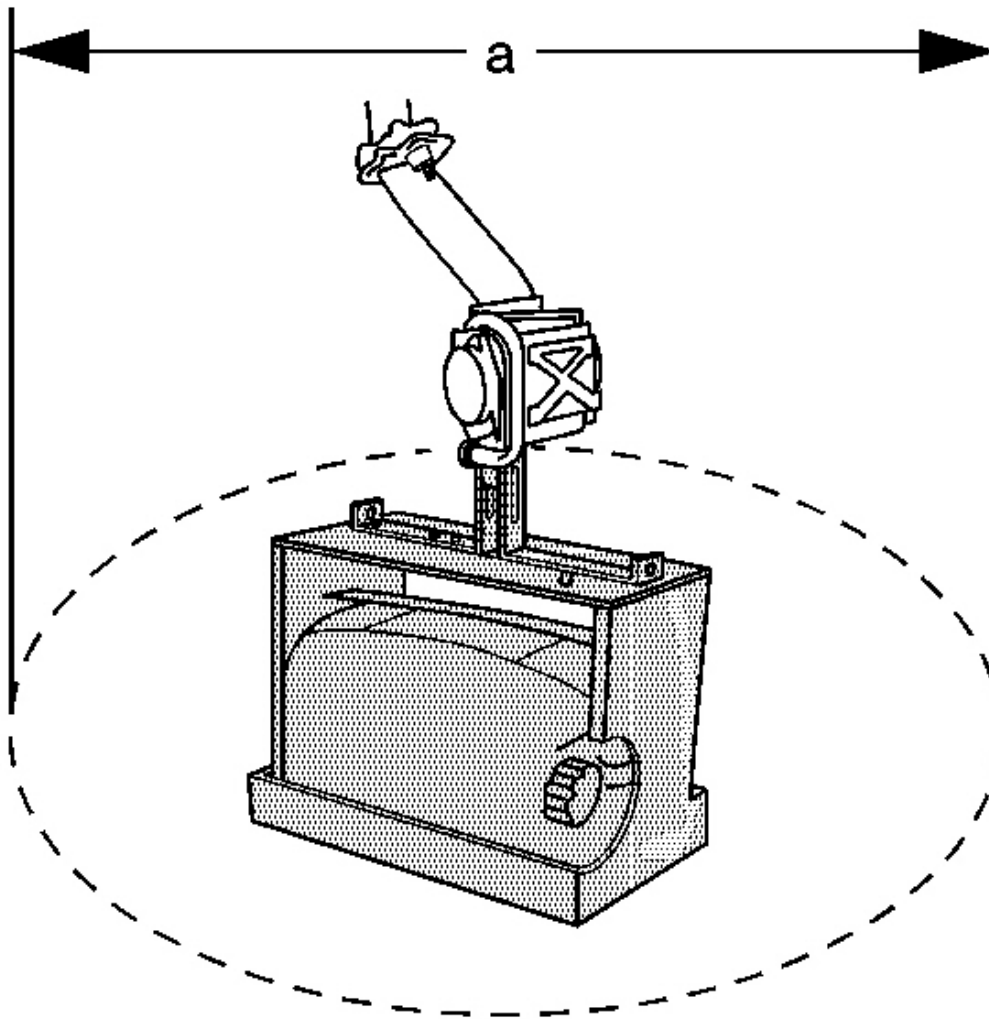


**Fig. 141: Proper Transportation of Seat Belt Pretensioner**  
Courtesy of GENERAL MOTORS CORP.

**CAUTION:** When you are deploying a pretensioner for disposal, perform the deployment procedures in the order listed. Failure to follow the procedures in the order listed may result in personal injury.

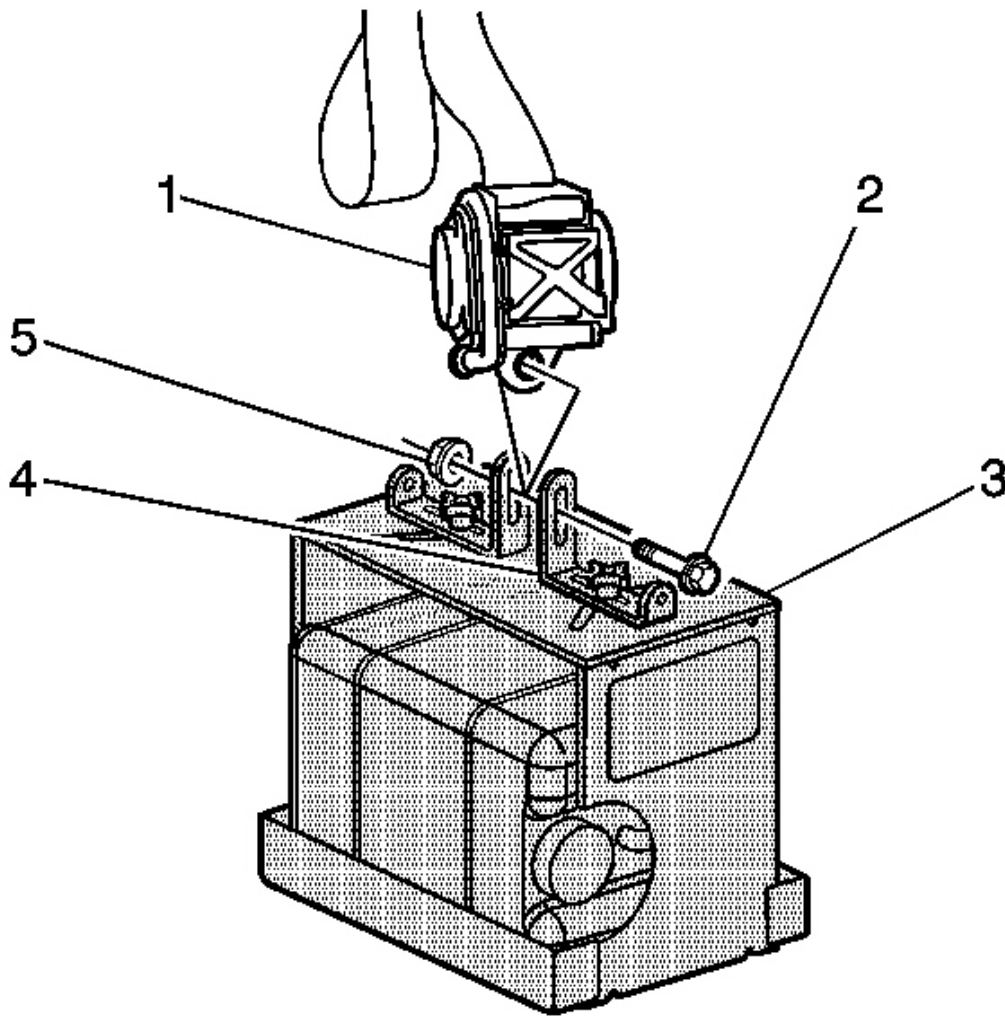
1. Turn the ignition switch to the OFF position.
2. Remove the ignition key.

3. Put on safety glasses.
4. Remove the seat belt pretensioner from the vehicle. Refer to **Seat Belt Retractor Pretensioner Replacement - Left Front** or **Seat Belt Retractor Pretensioner Replacement - Right Front**.
5. When carrying a pretensioner to the deployment area keep the open end of pretensioner pointed away from the body.



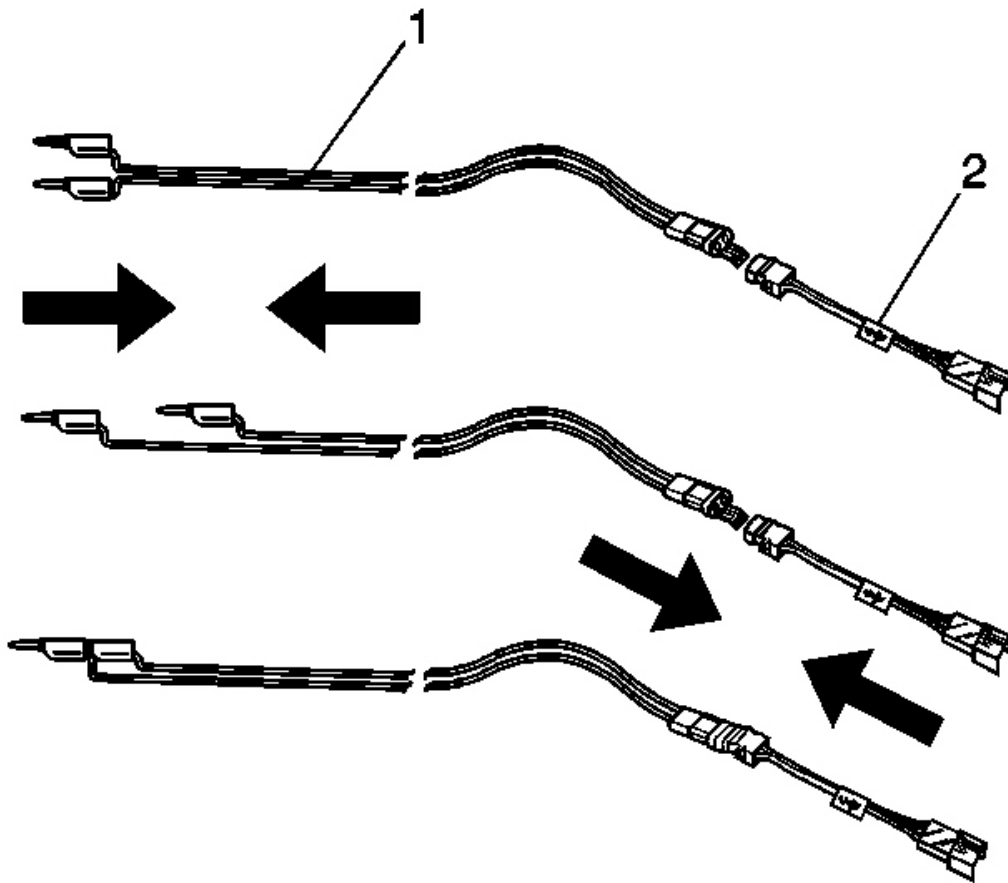
**Fig. 142: Illustrating Proper Space For Deployment Of Pretensioner**  
Courtesy of GENERAL MOTORS CORP.

6. Clear a space on the ground about 1.85 M (6 ft) in diameter for deployment of the pretensioner. If possible, use a paved, outdoor location free of activity. Otherwise, use a space free of activity on the shop floor. Make sure you have sufficient ventilation.
7. Make sure no loose or flammable objects are in the area.
8. Place **J 39401-B** in the center of the cleared area. See **Special Tools**.
9. Fill the fixture plastic reservoir with water or sand.



**Fig. 143: Seat Belt Pretensioner And SIR Deployment Fixture**  
Courtesy of GENERAL MOTORS CORP.

10. Mount the module (1) in the SIR deployment fixture (3) with the open end facing up using the following mounting method.
- Adjust and secure the arms (4) of **J 39401-B** to the deployment fixture (3). See **Special Tools**.
  - To mount, use the proper size bolt (2) and nut (5) with washers in order to secure the pretensioner (1) to the deployment fixture brackets (4).
  - Securely tighten all fasteners prior to deployment.

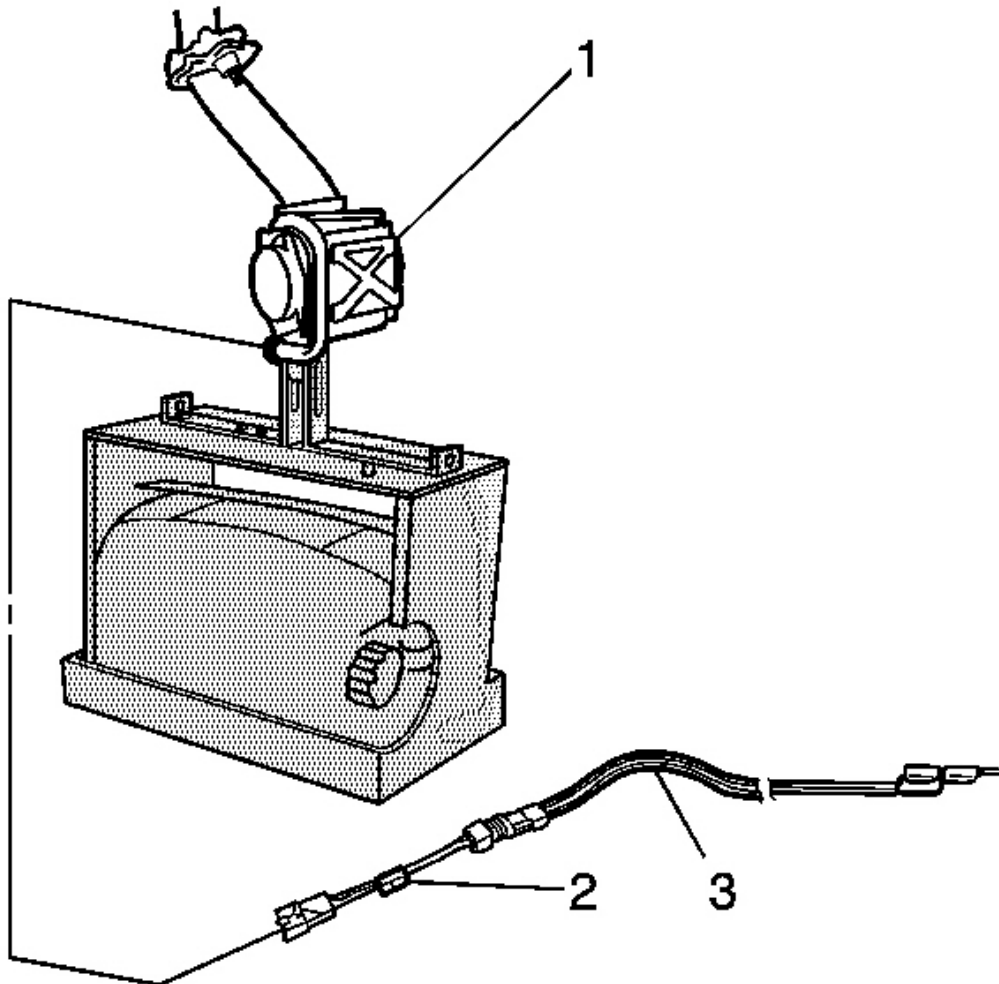


**Fig. 144: Identifying SIR Deployment Harness & Adapter**  
Courtesy of GENERAL MOTORS CORP.

11. Inspect the **J 38826** SIR Deployment Harness and the appropriate pigtail adapter for

damage. See **Special Tools**. Replace as needed.

12. Short the 2 SIR deployment harness (1) leads together using one banana plug seated into the other.
13. Connect the appropriate pigtail adapter (2) to the SIR deployment harness (1).



**Fig. 145: Identifying Seat Belt Pretensioner Connector, Adapter & Deployment Harness**

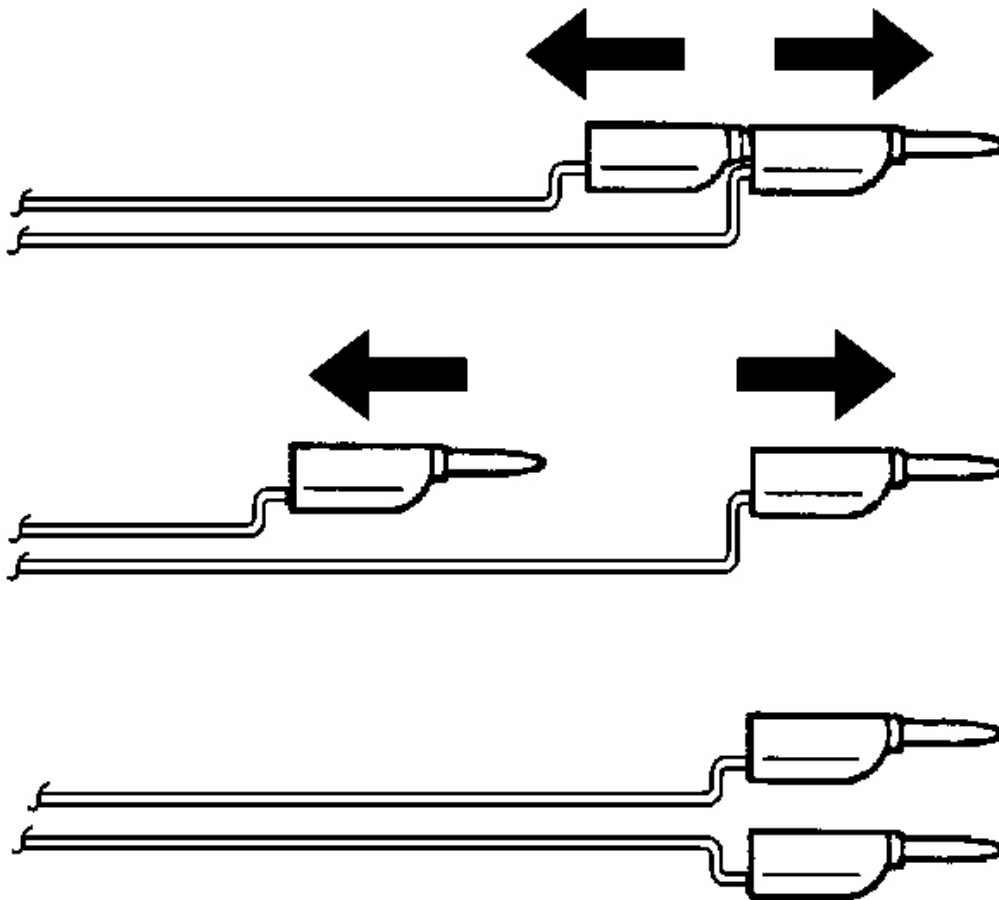
Courtesy of GENERAL MOTORS CORP.

14. Extend the SIR deployment harness and adapter to full length from the deployment fixture.

15. Connect the pretensioner (1) to the adapter (2) on the deployment harness (3).

**IMPORTANT:** The rapid gas expansion involved with deploying a pretensioner is very loud. Notify all the people in the immediate area that you intend to deploy the seat belt pretensioner.

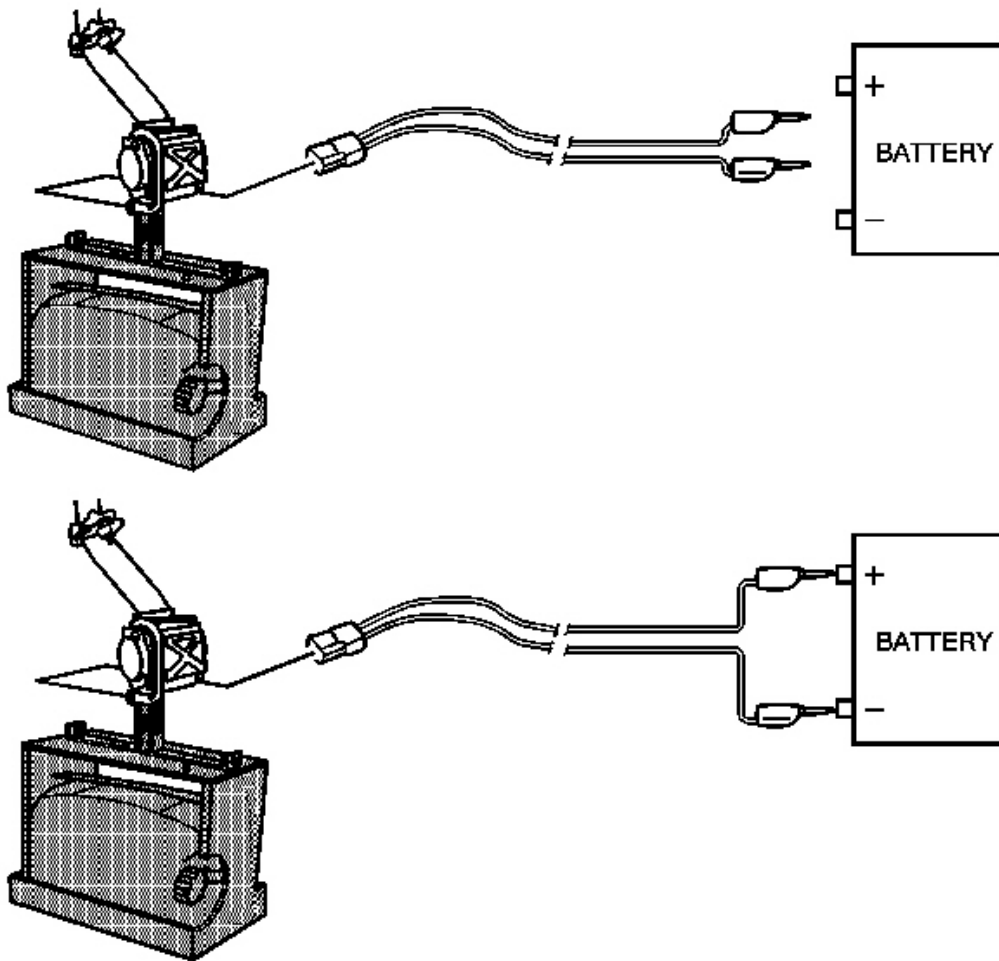
16. Clear the area of people.



**Fig. 146: Separating Banana Plugs**  
Courtesy of GENERAL MOTORS CORP.

**CAUTION:** When you are deploying a pretensioner for disposal, perform the deployment procedures in the order listed. Failure to follow the procedures in the order listed may result in personal injury.

17. Separate the 2 banana plugs on the SIR deployment harness.

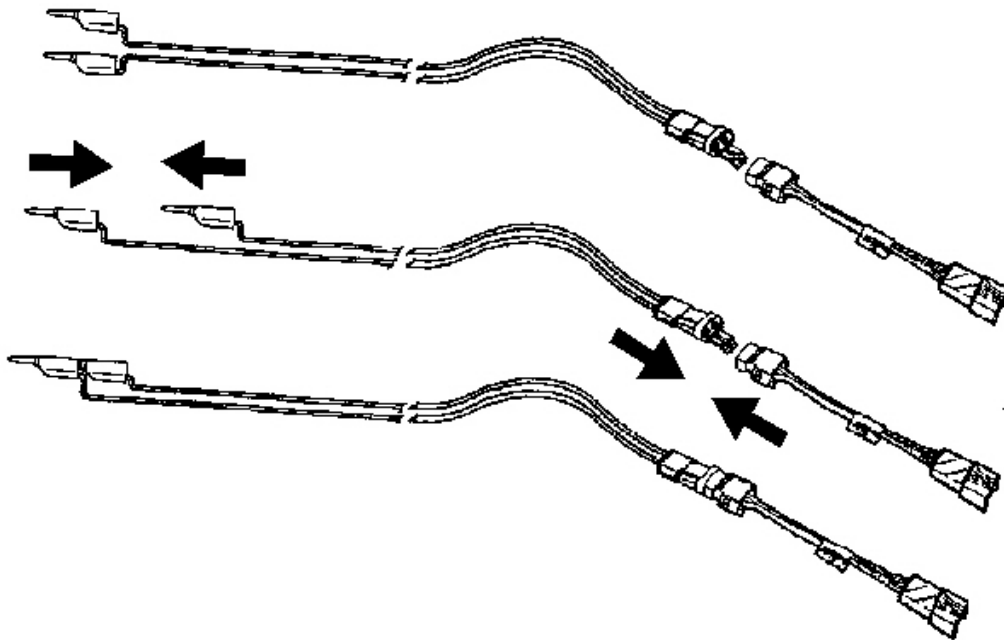


**Fig. 147: Deploying Seat Belt Pretensioner**  
Courtesy of GENERAL MOTORS CORP.

**IMPORTANT:** When the seat belt pretensioner deploys, the deployment

**fixture may jump about 30 cm (1 ft) vertically. This is a normal reaction of the seat belt pretensioner due to the force of the rapid expansion of gas inside the pretensioner.**

18. Place a 12-volt minimum/2-amp minimum power source, such as a vehicle battery, near the shorted end of the harness.
19. Connect the SIR deployment harness wires to the power source. Pretensioner deployment will occur when contact is made.
20. Disconnect the SIR deployment harness from the power source after the pretensioner deploys.



**Fig. 148: View Of Deployment Harness Leads**  
**Courtesy of GENERAL MOTORS CORP.**

21. Seat 1 banana plug into the other in order to short the deployment harness leads.
22. If the pretensioner did not deploy, disconnect the adapter and discontinue the procedure. Contact the Technical Assistance Group. Otherwise, proceed to the following steps.
23. Put on a pair of shop gloves.

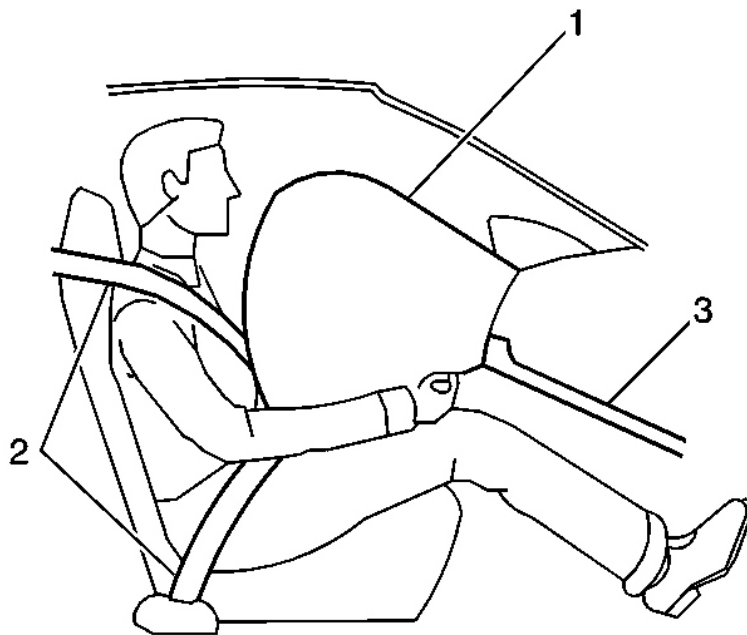
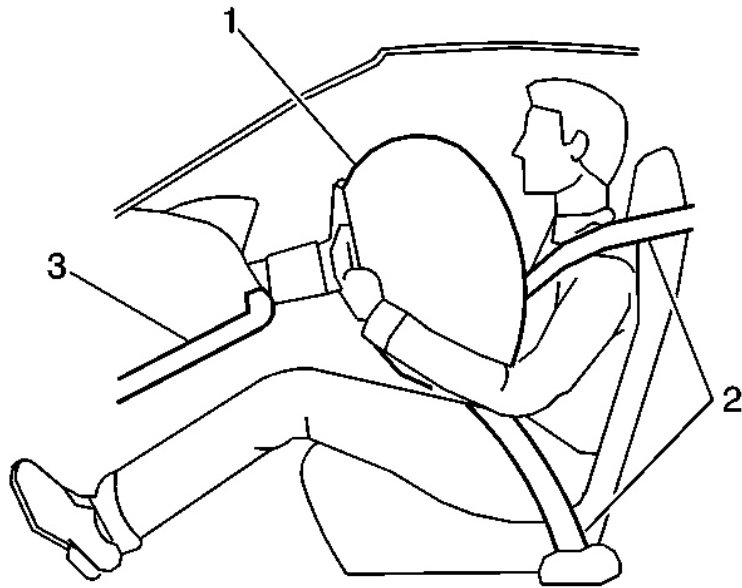
24. Disconnect the pigtail adapter from the pretensioner as soon as possible.
25. Inspect the pigtail adapter and the SIR deployment harness. Replace as needed.
26. Dispose of the deployed pretensioner through normal refuse channels.
27. Wash your hands with a mild soap.

## DESCRIPTION AND OPERATION

### SIR SYSTEM DESCRIPTION AND OPERATION

#### SIR System Overview

**IMPORTANT:** The vehicle has been equipped with the dual stage air bags, front end sensors, seat belt retractor pretensioners, side impact air bags, and passenger presence system (PPS).



**Fig. 149: Illustrating Deployed Inflatable Restraint**  
**Courtesy of GENERAL MOTORS CORP.**

The supplemental inflatable restraint (SIR) system supplements the protection offered by the

occupants seat belt system (2). The SIR system may contain several inflator modules located throughout the vehicle, i.e. steering wheel module (1), instrument panel (I/P) module (1), or side impact modules. In addition to inflator modules, the vehicle may contain seat belt pretensioners that tighten the seat belt in the event of a collision, thus reducing the distance between the occupant and the seat belt when an inflator module is deployed. Each inflator module has a deployment loop that is controlled by the sensing and diagnostic module (SDM) mounted inside the vehicle. The SDM determines the severity of a collision with the assistance of various sensor inputs located at strategic points on the vehicle. When the SDM detects a collision of sufficient force it will process the information provided by the sensors to further support air bag deployment. The SDM performs continuous diagnostic monitoring of the SIR system electrical components. Upon detection of a circuit malfunction, the SDM will set a DTC and inform the driver by turning the AIR BAG indicator ON. The steering column (1) and knee bolsters (3) are designed to absorb energy and compress during frontal collisions in order to limit leg movement and decrease the chance of injury to the driver and passenger. After an air bag deployment, the SDM will send out a post-air message to the body control module (BCM). The BCM will unlock the doors and turn ON the interior lights 15 seconds after receipt of this message.

#### **Frontal SIR System Description**

The frontal supplemental inflatable restraint (SIR) system consists of the following components:

- AIR BAG indicator located in the instrument panel cluster (IPC)
- Driver and passenger knee bolsters
- Inflatable restraint instrument panel (I/P) module.
- Inflatable restraint sensing and diagnostic module (SDM)
- Steering wheel and column
- Inflatable restraint steering wheel module
- Inflatable restraint steering wheel module coil
- Inflatable restraint wiring harnesses
- Inflatable restraint front end sensor (left/right)
- Inflatable restraint Passenger AIR BAG ON/OFF indicator
- Inflatable restraint passenger presence system (PPS)
- Inflatable restraint seat belt retractors pretensioner (left/right)
- Inflatable restraint side impact module (left/right)
- Inflatable restraint side impact sensor (SIS) (left/right)

A frontal collision of sufficient force up to 30 degrees off the longitudinal centerline of the vehicle will deploy the frontal air bags. The SDM contains a sensing device that converts vehicle

velocity changes to an electrical signal. In the event of a frontal collision, the SDM receives a signal from the electronic frontal sensor, which assists the SDM in determining the severity of the collision. The SDM compares these signals to a value stored in memory. When the generated signals exceed the stored value, the SDM will cause current to flow through the frontal deployment loops simultaneously deploying the frontal air bags. The SDM, I/P module, steering wheel module, steering wheel module coil, and the connecting wires makeup the frontal deployment loops. The SDM continuously monitors the deployment loops for malfunctions and turns the AIR BAG indicator ON if a fault is detected.

#### **Inflatable Restraint Sensing and Diagnostic Module (SDM)**

The sensing and diagnostic module (SDM) is a microprocessor and the control center for the supplemental inflatable restraint (SIR) system. The SDM contains internal sensors along with several external sensors, if equipped, mounted at strategic locations on the vehicle. In the event of a collision, the SDM compares the signals from the internal and external sensors to a value stored in memory. When the generated signals exceed the stored value, the SDM will cause current to flow through the appropriate deployment loops to deploy the air bags. The SDM records the SIR system status when a deployment occurs and turns the AIR BAG indicator located in the instrument panel cluster (IPC) ON. The SDM performs continuous diagnostic monitoring of the SIR system electrical components and circuitry when the ignition is turned ON. If the SDM detects a malfunction, a DTC will be stored and the SDM will command the AIR BAG indicator ON, notifying the driver that a malfunction exist. In the event that ignition positive voltage is lost during a collision, the SDM maintains a 23-volt loop reserve (23 VLR) for deployment of the air bags. It is important when disabling the SIR system for servicing or rescue operations to allow the 23 VLR to dissipate, which could take up to 1 minute.

#### **Inflatable Restraint Passenger Presence System (PPS)**

**IMPORTANT: The passenger presence system (PPS) is a calibrated unit. When replacing the assembly, all parts in the service kit must remain together. Do not mix any of the old parts with the new parts. After repairing or replacing the PPS, the system must be rezeroed in order to function properly.**

The PPS is used to monitor the weight of an occupant on the front outboard passenger seat and communicate the status to the sensing and diagnostic module (SDM) whether to enable or suppress the deployment of the instrument panel (I/P) module. The PPS consist of an electronic control module, silicone filled sensor pad, pressure sensor, seat belt tension retractor sensor, I/P module disable switch, wiring harness, and PASSENGER AIR BAG ON/OFF indicators. The silicone filled sensor pad is located under the passenger seat foam cushion and is connected by a hose clamped to the pressure sensor. The weight of the occupant sitting in the front passenger seat

is measured as a pressure change within the bladder by the pressure sensor. The pressure sensor sends a voltage signal to the PPS module. If the pressure from the occupants weight is less than a specified value, the PPS module will send a suppress signal to the SDM to disable the I/P module. If the pressure from the occupants weight is higher than a specified value, the PPS module will send an enable signal to the SDM to enable the I/P module. The PPS module will notify the customer of the enable/disable status by turning ON one of the PASSENGER AIR BAG ON/OFF indicators located on the rearview mirror. The PPS monitors itself for faults and will set DTCs if a fault is detected. The PPS will also notify the SDM of a fault and the SDM will request the instrument panel cluster (IPC) to turn ON the AIR BAG indicator located on the IPC. To determine what DTCs have been set by the PPS, the scan tool is used to command the SDM to request the PPS to flash the DTCs using the PASSENGER AIR BAG ON/OFF indicators located on the rearview mirror.

#### **AIR BAG Indicator**

The AIR BAG indicator, located in the instrument panel cluster (IPC), is used to notify the driver of supplemental inflatable restraint (SIR) system malfunctions and to verify that the sensing and diagnostic module (SDM) is communicating with the IPC. When the ignition is turned ON, the SDM is supplied with ignition positive voltage. The SDM requests the IPC to flash the AIR BAG indicator 7 times. While flashing the indicator, the SDM conducts test on all SIR system components and circuits. If no malfunctions are detected the SDM will communicate with the IPC through the class 2 serial data circuit and command the AIR BAG indicator OFF. The SDM provides continuous monitoring of the air bag circuits by conducting a sequence of checks. If a malfunction is detected, the SDM will store a DTC and command the IPC to turn the AIR BAG indicator ON via class 2 serial data and a SERVICE AIR BAG message will be display on the driver information center (DIC). The presence of a SIR system malfunction could result in non-deployment of the air bags or deployment in conditions less severe than intended. The AIR BAG indicator and the SERVICE AIR BAG message on the DIC will remain ON until the malfunction has been repaired.

#### **Dual Stage Inflator Modules**

Dual stage inflator modules contain a housing, inflatable air bag, 2 initiating devices, a canister of gas generating material, and in some cases, stored compressed gas. The 2 initiators are part of the frontal deployment loop. The function of the frontal deployment loops are to supply current through the steering wheel and instrument panel (I/P) inflator modules to deploy the air bags. The inflator modules have 2 stages of deployment, which varies the amount of restraint to the occupant according to the collision severity. For moderate frontal collisions, the inflator modules deploy at less than full deployment (low deployment) which consists of stage 1 of the inflator module. For more severe frontal collisions, a full deployment is initiated which consists of stage 1 and stage 2 of the inflator module. The current passing through the initiators ignites the material

in the canister producing a rapid generation of gas and in some cases, the release of compressed gas. The gas produced from this reaction rapidly inflates the air bag. Once the air bag is inflated, it quickly deflates through the air bag vent holes and/or the bag fabric.

Each dual stage inflator modules is equipped with a shorting bar located in the connectors of the module. The shorting bar shorts the inflator module deployment loop circuitry to prevent unwanted deployment of the air bag when it is disconnected.

#### **Inflatable Restraint Steering Wheel Module Coil**

The steering wheel module coil is attached to the steering column and is located under the steering wheel. The steering wheel module coil consists of 2 or more current-carrying coils. The coils allow the rotation of the steering wheel while maintaining continuous electrical contact between the driver deployment loop and the steering wheel module. Two or 4, if equipped with dual stage air bags, coil wires are used for the steering wheel module deployment loop. Additional coil wires are used for accessories attached to the steering wheel depending on the vehicle model. The steering wheel module coil connector is located near the base of the steering column. The connector contains a shorting bar that shorts the steering wheel module coil deployment loop circuitry to prevent unwanted deployment of the air bag when servicing the inflator module.

#### **Inflatable Restraint Front End Sensor**

The front end sensor also known as the electronic frontal sensor (EFS) is equipped on vehicles to supplement the supplemental inflatable restraint (SIR) system performance. The front end sensor is an electronic sensor, accelerometer, and is not part of the deployment loops, but instead provides an input to the sensing and diagnostic module (SDM). The front end sensor can assist in determining the severity of some frontal collisions. The SDM contains a microprocessor which performs calculations using the measured accelerations and compares these calculations to a value stored in memory. When the generated calculations exceed the stored value, the SDM will cause current to flow through the frontal deployment loops deploying the frontal air bags.

#### **Inflatable Restraint Seat Belt Retractor Pretensioner**

The seat belt retractor pretensioner contains a housing, an initiating device, and a canister of gas generating material. The initiator is part of the seat belt pretensioner deployment loop. When the vehicle is involved in a collision of sufficient force, the sensing and diagnostic module (SDM) will cause current to flow through the deployment loops to the initiator. Current passing through the initiator ignites the material in the canister producing a rapid generation of gas and the release of compressed gas, if present. The gas produced from this reaction rapidly shortens the seat belt buckle height.

Each seat belt retractor pretensioner is equipped with a shorting bar located on the connector of the pretensioner. The shorting bar shorts the seat belt retractor pretensioner deployment loop circuitry to prevent unwanted deployment of the pretensioner when servicing the seat belt retractor pretensioner.

#### **Inflatable Restraint Wiring Harness**

The inflatable restraint wiring harnesses connect the inflators modules, sensing and diagnostic module (SDM), deployment loops, and class 2 serial data together using weather pack connectors. Supplemental inflatable restraint (SIR) system connectors are yellow in color for easy identification. When repairing the SIR wiring harnesses, follow the proper testing and wiring repair procedures listed in this manual.

#### **Steering Column and Wheel**

The steering wheel and columns are designed to absorb energy when driver contact is made with the steering wheel or inflated air bag. In a frontal collision, the driver may come in contact with the steering wheel directly or load the steering wheel and column through the inflated air bag. When the driver applies load to the air bag or the steering wheel, the column will compress downward absorbing some of the impact, helping to reduce bodily injuries to the driver. The steering wheel and column must be inspected for damages after a collision.

#### **Knee Bolster**

The knee bolsters are designed to help restrain the lower torso of front seat occupants by absorbing the energy through the front seat occupants upper legs. In a frontal collision the front seat occupant legs may come in contact with the knee bolsters. The knee bolsters are designed to crush or deform, absorbing some of the impact, which helps to reduce bodily injuries. The driver and passenger knee bolsters are located in the lower part of the instrument panel and must be inspected for damages after a collision.

#### **Side SIR System Description**

The side supplemental inflatable restraint (SIR) system consists of the following components:

- AIR BAG indicator located in the instrument panel cluster (IPC)
- Inflatable restraint sensing and diagnostic module (SDM)
- Inflatable restraint side impact sensors (SIS) (left/right)
- Inflatable restraint side impact modules (left/right)
- Inflatable restraint wiring harnesses

**Inflatable Restraint Side Impact Modules**

The side impact modules are located in the seat backs of driver and passenger front seat. The side impact modules contain a housing, inflatable air bag, initiating device, and a canister of gas generating material. The initiator is part of the side impact module deployment loop. When a side impact of sufficient force occurs, the side impact sensor (SIS) detects the impact and sends a signal to the sensing and diagnostic module (SDM). The SDM compares the signal received from the SIS to a value stored in memory. When the generated signal exceeds the stored value, the SDM will cause current to flow through the side impact air bags deployment loop. The SDM, side impact modules and the connecting wires makeup the side deployment loops. The SDM continuously monitors the deployment loops for malfunctions and turns the AIR BAG indicator ON if a fault is present.

Each side impact module is equipped with a shorting bar located on the connector of the module. The shorting bar shorts the side impact modules deployment loop circuitry to prevent unwanted deployment of the air bag when servicing the inflator module.

**Inflatable Restraint Side Impact Sensor (SIS)**

The side impact sensor (SIS) contains a sensing device which monitors vehicle acceleration and velocity changes to detect side collisions that are severe enough to warrant air bag deployment. The SIS is not part of the deployment loop, but instead provides an input to the sensing and diagnostic module (SDM). The SDM contains a microprocessor that performs calculations using the measured accelerations and compares these calculations to a value stored in memory. When the generated calculations exceed the stored value, the SDM will cause current to flow through the deployment loops deploying the roof rail air bags.

**SPECIAL TOOLS AND EQUIPMENT**

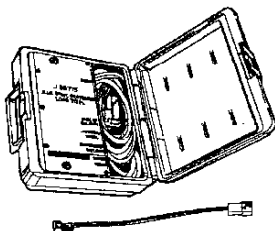
**SPECIAL TOOLS**

**Special Tools**

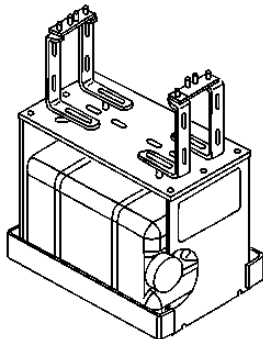
| Illustration | Tool Number/Description                     |
|--------------|---------------------------------------------|
|              | J 38715-A<br>Driver/Passenger SIR Load Tool |

## 2006 Buick Rendezvous CX

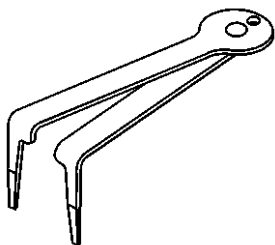
### 2006 RESTRAINTS SIR - Rendezvous



J 38826  
SIR Deployment Harness



J 39401-B  
SIR Deployment Fixture



J 44298  
Driver Air Bag Removal Tool