2005 RESTRAINTS

SIR - Aveo

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Clock Spring Retaining Screws	3 N.m	27 lb in
Driver Air Bag Module Mounting Bolts	8 N.m	71 lb in
Passenger Air Bag Sensor	8 N.m	71 lb in
Passenger Air Bag Module Mounting Bolts	11 N.m	97 lb in
Sensing and Diagnostic Module (SDM) Mounting Bolts	10 N.m	89 lb in
Side Air Bag Sensor	10 N.m	89 lb in

GENERAL SPECIFICATIONS

General Specifications

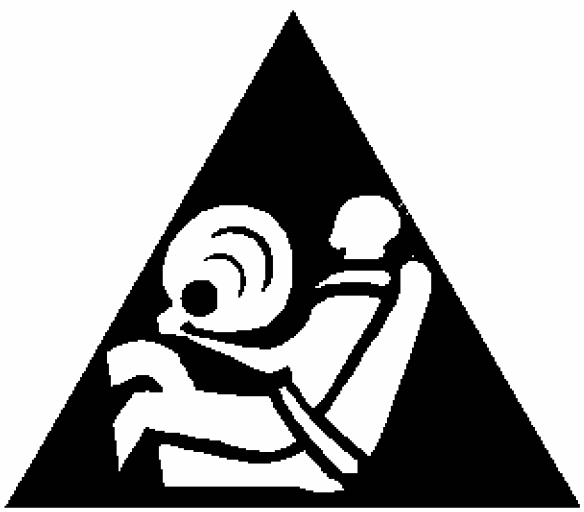
Application	Specification	
	Metric	English
Acceleration Range	+/-50 g	
Air Bag Replacement Interval	Every 10 years after installation	
Air Bag System Deployment Time	Less than 20 ms	
Air Bag Warning Lamp ON Time - When Ignition ON	6 seconds	
Current Consumption	5 ms after ignition switch ON less than 1A 5 ms-5 sec. less than 300 Ma, after 5 sec. less than 100 Ma	
Detection Time	Less than 5 ms	
Energy Reservation	150 ms after battery disconnection	
Inflator Ignition Energy	4.3 mj	
Maximum Acceleration	+/-600 g pulse	
Operating Temperature	-40 to +85°C	-40 to +185°F
Squib Resistance	2.15+/-0.35 ohms	
Storage Temperature	-40 to +90°C	-40 to +194°F
Voltage Ramp	0.2-2 V/s	

Voltage Range	9-16 V

SCHEMATIC AND ROUTING DIAGRAMS

SIR SCHEMATIC ICONS

SIR Schematic Icons

Icon	Icon Definition
	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.
	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

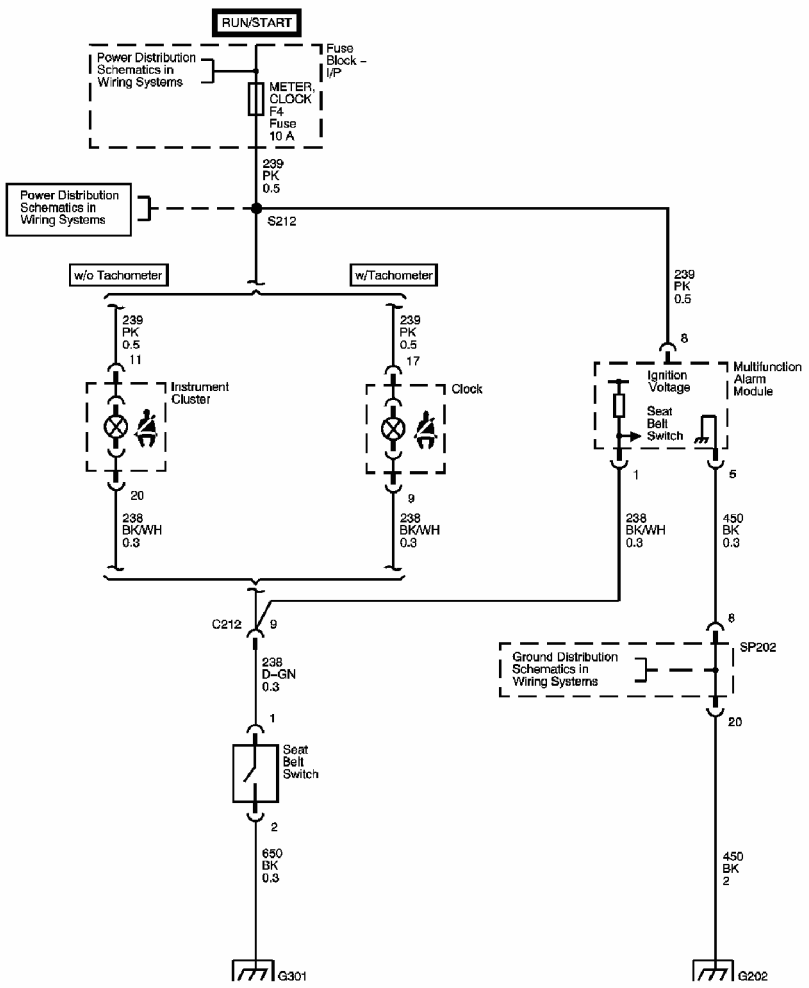


Fig. 1: Seat Belt Warning Indicator Schematics
Courtesy of GENERAL MOTORS CORP.

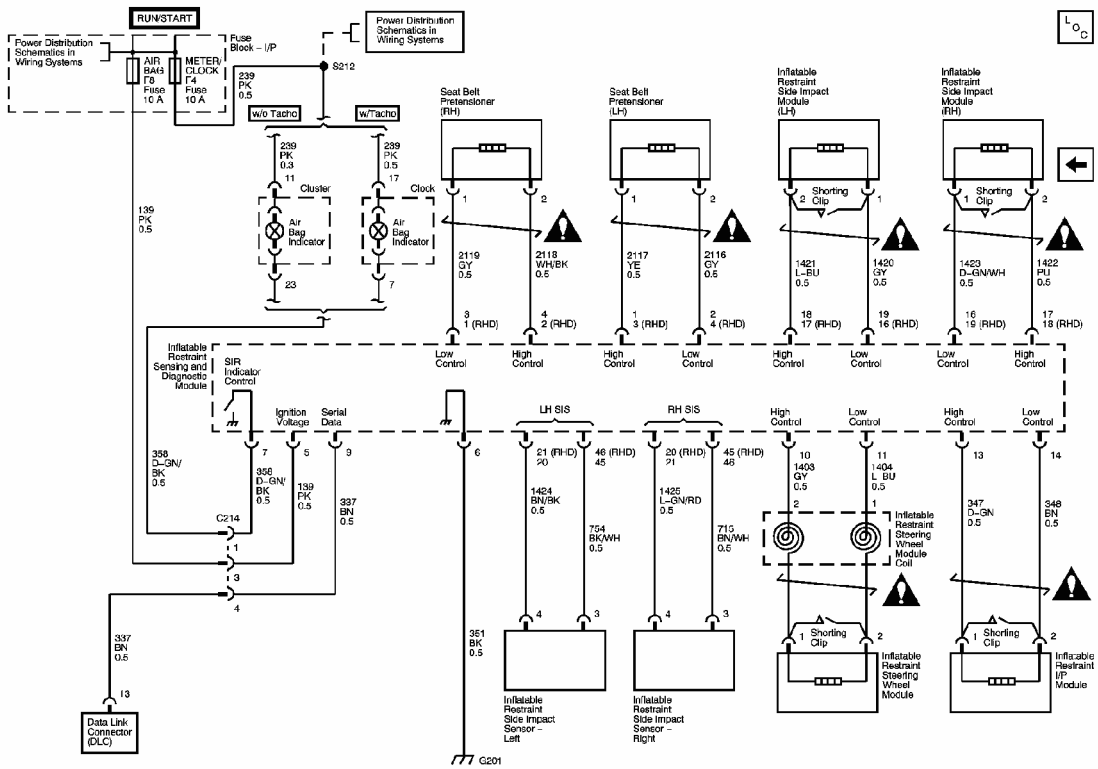


Fig. 2: SIR Schematic
Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

SIR COMPONENT VIEWS

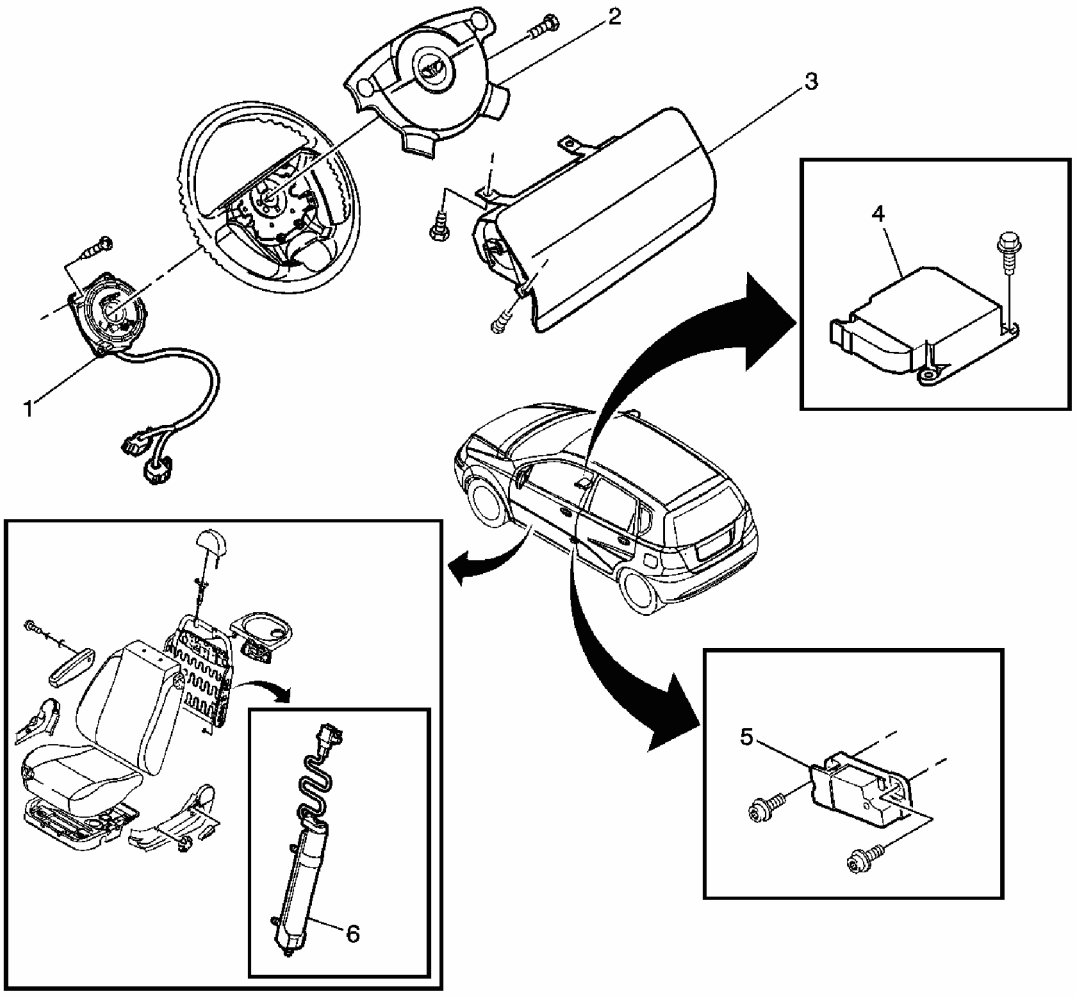


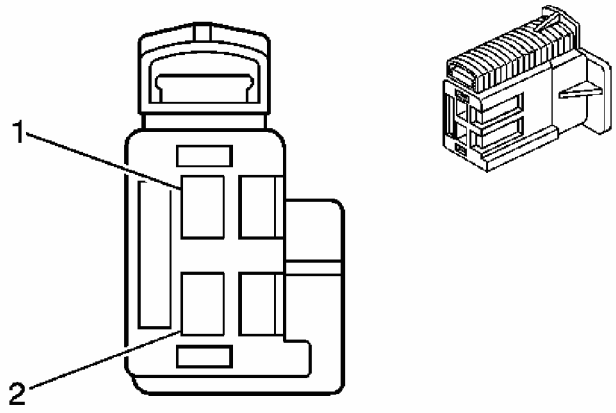
Fig. 3: SIR Component Views
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	Inflatable Restraint Steering Wheel Module Coil
2	Inflatable Restraint Steering Wheel Module
3	Inflatable Restraint I/P Module
4	Inflatable Restraint Sensing and Diagnostic Module (SDM)
5	Inflatable Restraint Side Impact Sensor - Except North America Models (Left Hand Shown, Right Side Similar)
6	Inflatable Restraint Side Impact Module - Except North America Models (Left Side Shown, Right Side Similar)

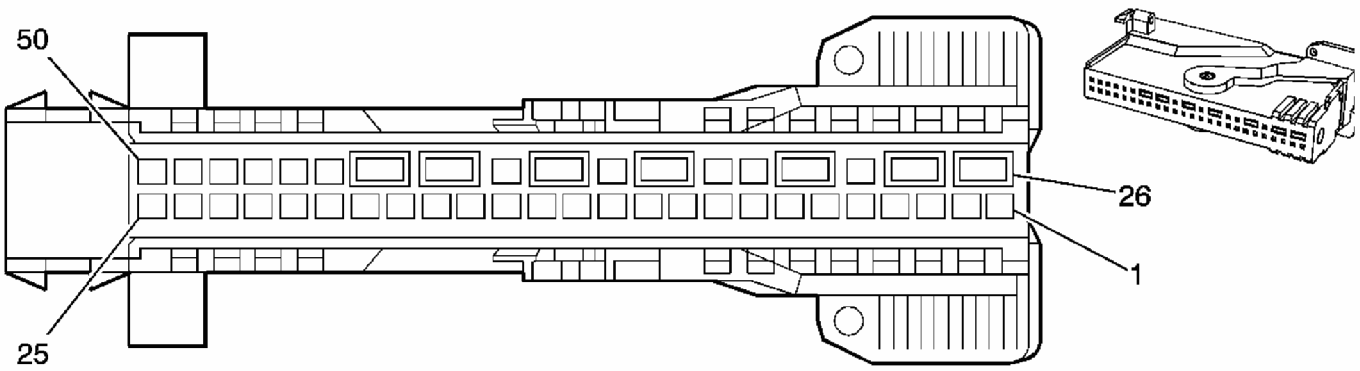
SIR CONNECTOR END VIEWS

Inflatable Restraint IP Module



Connector Part Information	• FC 160201704 • 2-Way Connector (YE)		
Pin	**Wire Color**	**Circuit No.**	**Function**
1	D-GN	347	Instrument Panel Module - High Control
2	BN	348	Instrument Panel - Low Control

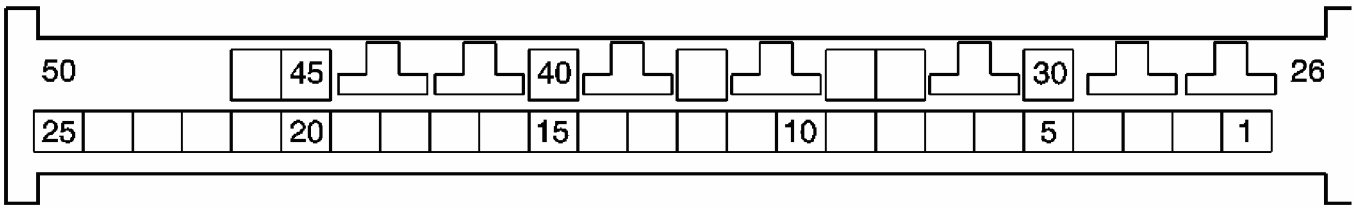
Inflatable Restraint Sensing and Diagnostic Module (SDM) LHD



Connector Part Information		• AMP 4-368231 • 50-Way (RD)	
Pin	**Wire Color**	**Circuit Number**	**Function**
1	YE	2117	Seat Belt Pretensioner Right - High Control
2	GY	2116	Seat Belt Pretensioner Right - Low Control

3	D-GN/RD	2119	Seat Belt Pretensioner Left - Low Control
4	WH/BK	2118	Seat Belt Pretensioner Left - High Control
5	PK	139	Ignition 1 Voltage
6	BK/WH	351	Ground
7	D-GN/WH	358	Air Bag Indicator Control
8	-	-	Not Used
9	BN	337	SIR Serial Data
10	GY	1403	Steering Wheel Module - High Control
11	L-BU	1404	Steering Wheel Module - Low Control
12	-	-	Not Used
13	D-GN	347	I/P Module - High Control
14	BN	348	I/P Module - Low Control
15	-	-	Not Used
16	D-GN/WH	1423	Side Impact Module - Passenger - Low Control (Side A Bags)
17	PU	1422	Side Impact Module - Passenger - High Control (Side A Bags)
18	L-BU	1421	Side Impact Module - Driver - High Control (Side Air Bags)
19	GY	1420	Side Impact Module - Driver - Low Control (Side Air Bags)
20	BN/BK	1424	Side Impact Sensing Module - Left - Voltage (Side Air Bags)
21	L-GN/RD	1425	Side Impact Sensing Module - Right - Voltage (Side Ai Bags)
22-44	-	-	Not Used
45	BK/WH	754	Side Impact Sensing Module - Left - Signal (Side Air Bags)
46	BK/WH	715	Side Impact Sensing Module - Right - Signal (Side Air Bags)
47-50	-	-	Not Used

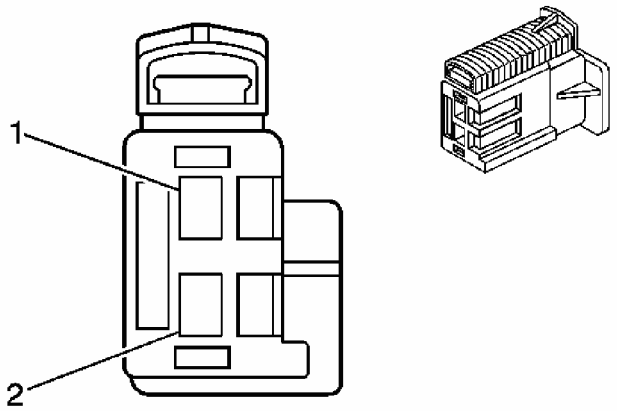
Inflatable Restraint Sensing and Diagnostic Module (SDM) RHD



Connector Part Information		• AMP 4-368231 • 50-Way	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	GY	2119	Seat Belt Pretensioner Right - Low Control
2	WH/BK	2118	Seat Belt Pretensioner Right - High Control
3	YE	2117	Seat Belt Pretensioner Left - High Control
4	GY	2116	Seat Belt Pretensioner Left - Low Control
5	PK	139	Ignition 1 Voltage
6	BK/WH	351	Ground
7	D-GN/WH	358	Air Bag Indicator Control
8	-	-	Not Used
9	BN	337	SIR Serial Data
10	GY	1403	Steering Wheel Module - High Control
11	L-BU	1404	Steering Wheel Module - Low Control
12	-	-	Not Used
13	D-GN	347	I/P Module - High Control
14	BN	348	I/P Module - Low Control
15	-	-	Not Used
16	GY	1420	Side Impact Module - Driver - Low Control (Side Air Bags)
17	L-BU	1421	Side Impact Module - Driver - High Control (Side Air Bags)
18	PU	440	Battery Positive Voltage
19	D-GN/WH	1423	Side Impact Module - Passenger - Low Control (Side A Bags)
20	L-GN/RD	1425	Side Impact Sensing Module - Right - Voltage (Side Ai Bags)
21	BN/BK	1424	Side Impact Sensing Module - Left - Voltage (Side Air Bags)
22-44	-	-	Not Used
			Side Impact Sensing Module - Right - Signal (Side Air

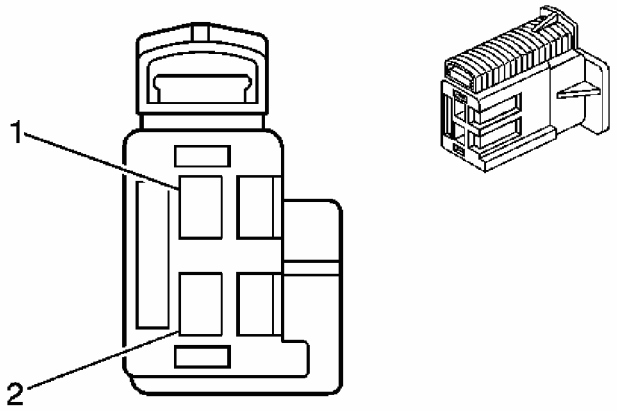
45	BK/WH	715	Bags)
46	BK/WH	754	Side Impact Sensing Module - Left - Signal (Side Air Bags)
47-50	-	-	Not Used

Inflatable Restraint Side Impact Module - Left Side Air Bags



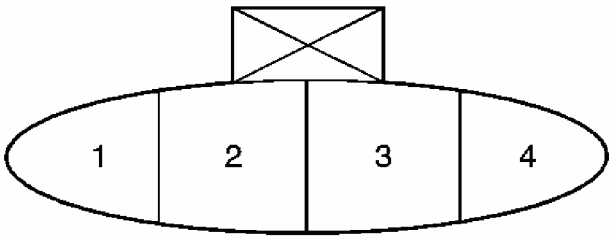
Connector Part Information		• FC 160201704 • 2-Way Connector (YE)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	GY	1420	Side Impact Module - Driver - Low Control
2	L-BU	1421	Side Impact Module - Driver - High Control

Inflatable Restraint Side Impact Module - Right Side Air Bags



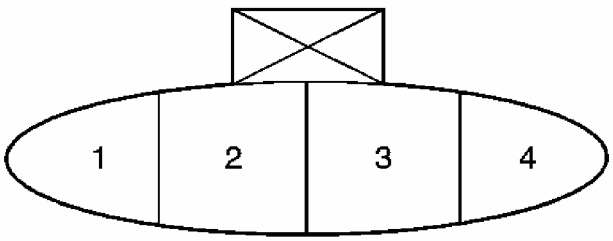
Connector Part Information		• FC 160201704 • 2-Way	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	D-GN/WH	1423	Side Impact Module - Passenger - Low Control
2	PU	1422	Side Impact Module - Passenger - High Control

Inflatable Restraint Side Impact Sensor (SIS) - Left Side Air Bags



Connector Part Information		• Yazaki 7283-6502-50 • 4-Way	
Pin	**Wire Color**	**Circuit No.**	**Function**
1-2	-	-	Not Used
3	BK/WH	754	Side Impact Sensing Module (SIS) - Left - Signal
4	BN/BK	1424	Side Impact Sensing Module (SIS) - Left - Voltage

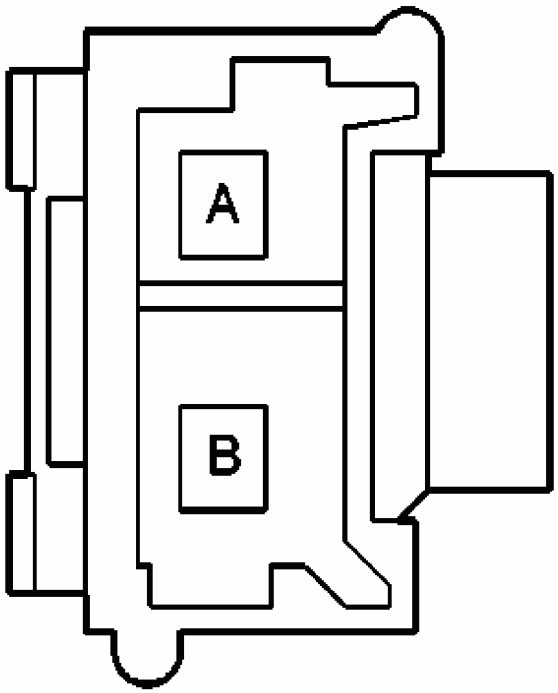
Inflatable Restraint Side Impact Sensor (SIS) - Right Side Air Bags



Connector Part Information		• Yazaki7283-6502-50 • 4-Way	
Pin	**Wire Color**	**Circuit No.**	**Function**

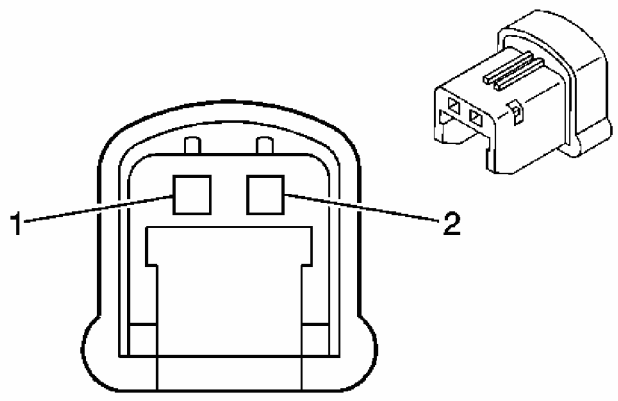
1-2	-	-	Not Used
3	BK/WH	715	Side Impact Sensing Module (SIS) - Right - Signal
4	BN/BK	1425	Side Impact Sensing Module (SIS) - Right - Voltage

Inflatable Restraint Steering Wheel Module Coil - C1



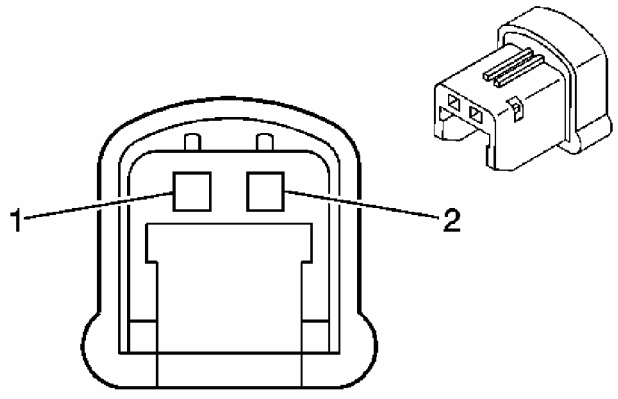
Connector Part Information		• PED 12162794 • 2-Way M Metri-Pack 280 Series, Unsealed (YE)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	L-BU	1404	Steering Wheel Module - Low Control
B	GY	1403	Steering Wheel Module - High Control

Seat Belt Pretensioner - Left Front



Connector Part Information		• V23540-M5302-Y22 • 2-Way Connector (GN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	WH/BK	2118	Seat Belt Pretensioner - Left - High Control
2	L-GN/RD	2119	Seat Belt Pretensioner - Left - Low Control

Seat Belt Pretensioner - Right Front



Connector Part Information		• V23540-M5302-Y22 • 2-Way Connector (GN)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	YE	2117	Seat Belt Pretensioner - Right - High Control
			Seat Belt Pretensioner - Right - Low

2	GY	2116	Control

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - SIR

Begin the system diagnosis with the **Diagnostic System Check - SIR**. The Diagnostic System Check will provide the following information:

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

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

DIAGNOSTIC SYSTEM CHECK - SIR

CAUTION: If the vehicle interior is exposed to moisture and becomes soaked up to the level of the sensing and diagnostic module (SDM), the SDM and SDM harness connector must be replaced. The SDM could be activated when powered, which could cause airbag deployment and result in personal injury.

The Diagnostic System Check - SIR must always be the starting point for any SIR diagnosis. The Diagnostic System Check reveals DTCs through the use of the scan tool. The diagnostic procedures used in this section are designed to find any repair SIR conditions. To get the best results, it is important to use the diagnostic charts and follow the sequence listed below.

1. Perform the Diagnostic System Check - SIR, which reveals DTCs through the use of scan tool. It also checks for proper air bag indicator operation.
2. Refer to the proper diagnostic chart as directed by the Diagnostic System Check - SIR. Bypassing these procedures may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacement.
3. Repeat the Diagnostic System Check - SIR after any repair or diagnostic procedures have been performed to ensure that the repair has been made correctly and that no other malfunction exists.

Circuit Description

When the ignition switch is first turned to ON, ignition voltage is supplied from the air bag fuse to find the sensing and diagnostic module (SDM) at the input terminal A1. The SDM responds by flashing the air bag indicator 7 times and then turning it OFF while the SDM

performs tests on the SIR.

Diagnostic Aids

The order in which DTCs are diagnosed is very important. Failure to diagnose the DTCs in the order specified may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacement.

Diagnostic System Check - SIR

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	1. Turn the ignition switch ON. 2. Inspect the warning lamp. Does the warning lamp turn OFF after 4 seconds?	-	System OK	Go to **Step 2**
2	1. Connect the scan tool cable to the data link connector (DLC). 2. Connect the scan tool power cable to the cigar lighter socket. 3. Select the air bag main menu on the scan tool. 4. Select Fail Code View & Clear from the displayed menu of the DTCs. Are there any active fault codes?	-	Go to **Diagnostic Trouble Code (DTC) List**	Go to **Step 3**
3	Check fuse F8. Is the fuse F8 open?	-	Go to **Step 4**	Go to **Step 5**
4	Replace fuse F8. Is the replacement complete?	-	System OK	-
5	1. Disconnect the connector C214. 2. Check for a short to ground between fuse F8 and terminal 3 of connector C214.	-		

	Is the wiring harness shorted to ground?		Go to **Step 6**	Go to **Step 7**
6	Repair a short to ground between fuse F8 and terminal 3 of connector C214. Is the repair complete?	-	System OK	-
7	1. Disconnect the sensing and diagnostic module (SDM) electrical connector. 2. Check for a short to ground between terminal 3 of connector C214 and terminal 5 of the SDM connector. Is the wiring harness shorted to ground?	-	Go to **Step 15**	Go to **Step 8**
8	Use an ohmmeter to check for continuity between the DLC terminal and ground. Does the ohmmeter show the specified value?	0 ohms	Go to **Step 9**	Go to **Step 10**
9	Repair the open DLC ground circuit. Is the repair complete?	-	System OK	-
10	1. Turn on the ignition, with the engine OFF. 2. Check the voltage at the cigar lighter positive terminal. Does the voltmeter show the specified value?	11-14 V	Go to **Step 12**	Go to **Step 11**
11	Repair the power supply for the cigar lighter socket. Is the repair complete?	-	System OK	-
12	Check for a short to ground or an open circuit between the DLC terminal and terminal 4 of connector C214. Is the wiring harness shorted to ground or open?	-	Go to **Step 13**	Go to **Step 14**
13	Repair a short to ground or open circuit between terminal J13 of the DLC and terminal 4 of connector C214. Is the repair complete?	-	System OK	-
	Check for a short to ground or an open			

14	between terminal 4 of connector C214 and terminal 9 of the SDM connector. Is the wiring harness shorted to ground or open?	-	Go to **Step 15**	Go to **Step 16**
15	Replace the SDM wiring harness. Is the repair complete?	-	System OK	-
16	Replace the SDM. Is the repair complete?	-	System OK	-

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 Diagnostic System Check - SIR. Use the SIR Scan Tool Data List after the following is determined:

- There is no published diagnostic trouble code (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
8-Digit GM Part Number	ID Information	8-digit number	Varies
Ignition Cycle Counter	Data Display	Counts	Varies
SDM Operating Time	Data Display	min.	Varies
Warning Lamp Cycles	Data Display	Cycles	Varies
Julian Date of Build	ID Information	3-digit number	Varies
PROM ID	ID Information	4-digit number	Varies
Year Module Built	ID Information	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.

Ignition Cycle Counter

The scan tool displays the number of ignition cycles.

Julian Date of Build

The scan tool displays a 3-digit number. This number represents the day of the year the module was built.

PROM ID

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

SDM Operating Time

The scan tool displays the SDM operating time in minutes.

Warning Lamp Cycles

The scan tool displays the number of warning lamp cycles.

Year Module Built

The scan tool displays what year the module was built.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

CAUTION: Refer to SIR SDM Moisture Intrusion Caution in Cautions and Notices.

When the sensing and diagnostic module (SDM) detects any problem it illuminates the air bag warning indicator and stores the diagnostic trouble codes (DTCs).

The supplemental inflatable restraints (SIR) diagnostic system check must be always the starting point for any SIR diagnosis. The diagnostic system check reveals diagnostic trouble codes (DTCs) through the use of the scan tool. It also checks for proper air bag warning

lamp operation.

The 2 types of DTCs that may be recorded are as follows :

1. Active DTCs represent a malfunction being detected during the current ignition cycle. Active DTCs are stored in random access memory (RAM).
2. Historic DTCs represent malfunctions detected since the last time the historic memory was cleared. Historic DTCs are stored in the electrically erasable programmable read-only memory (EPROM).

Diagnostic Trouble Code (DTC) List

DTC	Diagnostic Procedure
001	**DTC 001**
002	**DTC 002**
003	**DTC 003**
004	**DTC 004**
005	**DTC 005**
006	**DTC 006**
007	**DTC 007**
008	**DTC 008**
009	**DTC 009**
010	**DTC 010**
011	**DTC 011**
012	**DTC 012**
013	**DTC 013**
014	**DTC 014**
015	**DTC 015**
016	**DTC 016**
023	**DTC 023**
024	**DTC 024**
025	**DTC 025**
031	**DTC 031**
032	**DTC 032**
033	**DTC 033**
034	**DTC 034**
035	**DTC 035**
038	**DTC 038**
052	**DTC 052**
053	**DTC 053**
054	**DTC 054**

055	**DTC 055**
056	**DTC 056**
057	**DTC 057**
058	**DTC 058**
059	**DTC 059**
080	**DTC 080**
081	**DTC 081**
082	**DTC 082**
083	**DTC 083**
084	**DTC 084**
085	**DTC 085**
086	**DTC 086**
087	**DTC 087**

Scan Tool Diagnostics

NOTE: Refer to Defective Scan Tool Notice in Cautions and Notices.

North America

A scan tool can read serial data from terminal 9 of the data link connector (DLC). The scan tool is used to read DTCs, and to clear some DTCs after a repair is completed.

To use the scan tool, turn the ignition OFF, connect the scan tool to the DLC, and turn the ignition switch to ON.

Follow the instructions in the scan tool manual. The SDM sends serial data from terminal 9 of the SDM to terminal 13 of the DLC.

Except North America

A scan tool can read serial data from terminal 9 of the data link connector (DLC). The scan tool is used to read DTCs, and to clear some DTCs after a repair is completed. By design, DTC 051 and 053 can not be cleared. And the DTC 061 can not be cleared for the ignition cycle once the DTC has been detected by the SDM.

To use the scan tool, turn the ignition OFF, connect the scan tool to the DLC, and turn the ignition switch to ON.

Follow the instructions in the scan tool manual. The SDM sends serial data from terminal A4 of the SDM to terminal 9 of the DLC.

DTC 001

Circuit Description

When the ignition switch is turned ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

The resistance of the driver air bag deployment loop is higher than 4.7 ohms.

DTC 001

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	Examine the wiring and the connector at the driver air bag module. Is the connector disconnected?	-	Go to **Step 3**	Go to **Step 4**
3	1. Reconnect the driver air bag module connector. 2. Reinstall the driver air bag module in the steering wheel. 3. Reconnect the negative battery terminal. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Disconnect the negative battery cable. 2. Remove the driver air bag module. 3. Place the driver air bag module in a secure position with the			

4	decorative surface facing upward. 4. Disconnect the electrical connector at the sensing and diagnostic module (SDM). The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the driver air bag module. 5. Connect an ohmmeter to the terminals of the wiring harness connector for the driver air bag module. Does the ohmmeter indicate the specified value?	0 ohms	Go to **Step 5**	Go to **Step 7**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool for CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 001 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the driver air bag module. 2. Reconnect the negative battery terminal. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Disconnect the clock spring wiring harness connector at the lower steering column. The shorting bar at the disconnected SDM connector will create a complete circuit			

7	between the wires from the driver air bag module. 2. Connect an ohmmeter to the terminals at the SDM side of the clock spring connector. Does the ohmmeter show the specified value?	0 ohms	Go to **Step 8**	Go to **Step 9**
8	1. Replace the clock spring. 2. Reconnect the negative battery terminal. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
9	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 002

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The resistance of the driver air bag deployment loop is lower than 1.8 ohms.
- The shorting bar is damaged and then the SDM must be replaced.

DTC 002

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.**				

CAUTION:
Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR completed?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Remove the driver air bag module. 3. Store the driver air bag module with the decorative side facing upward. 4. Connect an ohmmeter to the terminals of the wiring harness connector for the driver air bag module. Does the ohmmeter show the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
3	1. Replace the sensing and diagnostic module (SDM). 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 002 still shown as a current fault?	-	Go to **Step 4**	System OK
4	1. Replace the driver air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Disconnect the clock spring wiring harness connector at the lower steering column.			

5	2. Connect an ohmmeter to the terminals at the SDM side of the clock spring connector. Does the ohmmeter show the specified value?	infinity	Go to **Step 6**	Go to **Step 7**
6	1. Replace the clock spring. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 003

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

If the resistance is in the 2 kilo ohms between 10 kilo ohms, the defect may occur depending upon the SDM. The normal resistance is over 10 kilo ohms.

Conditions for Setting the DTC

- The air bag wiring of driver high is shorted to ground.
- The air bag wiring of driver low is shorted to ground.

DTC 003

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.**				

CAUTION:
Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	Visually inspect the supplemental inflatable restraint (SIR) wiring harness for damage. Is there any visible damage to the SIR harness?	-	Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the negative battery cable. 2. Remove the driver air bag module. 3. Place the driver air bag module in a secure position with the decorative surface facing upward. 4. Disconnect the electrical connector at the sensing and diagnostic module (SDM). The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the driver air bag module. 5. Use an ohmmeter to measure the continuity between ground and one of the terminals on the wiring harness connector for the driver air bag module. Is the resistance less than the specified	infinity		

	value?		Go to **Step 7**	Go to **Step 5**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool for CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 003 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the driver air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	1. Disconnect the clock spring wiring harness connector at the lower steering column. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the clock spring. 2. Using an ohmmeter, check for continuity between ground and one of the terminals on the SDM side of the clock spring connector. Is the resistance less than the specified value?	infinity	Go to **Step 2**	Go to **Step 8**
8	1. Replace the clock spring. 2. Reconnect the negative battery terminal. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 004

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The air bag wiring of driver high is shorted to battery wiring.
- The air bag wiring of driver low is shorted to battery wire.

DTC 004

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	Visually inspect the supplemental inflatable restraint (SIR) harness for damage. Is there any visible damage to the SIR harness?	-	Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is your repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Disconnect the negative battery cable. 2. Remove the driver air bag module. 3. Place the driver air bag module in a secure position with the			

4	decorative surface facing upward. 4. Disconnect the electrical connector at the sensing and diagnostic module (SDM). The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the driver air bag module. 5. Use a multimeter to measure the voltage at one of the terminals on the wiring harness connector for the driver air bag module. Is the voltage greater than the specified value?	0 V	Go to **Step 7**	Go to **Step 5**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool for CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 004 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the driver air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Disconnect the clock spring wiring harness at the lower steering column. The shorting bar at the disconnected SDM connector will create a complete circuit			

7	between the wires from the clock spring. 2. Using a multimeter, measure the voltage at one of the terminals on the SDM side of the clock spring connector. Did the voltmeter indicate the specified value?	0 V	Go to **Step 8**	Go to **Step 3**
8	1. Replace the clock spring. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 005

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

The resistance of passenger air bag deployment loop is over 2.8 ohms.

DTC 005

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
	Perform the Diagnostic System Check - SIR.			Go to **Diagnostic**

1	Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	**System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Examine the wiring and the connector at the passenger side air bag module. Is the connector disconnected?	-	Go to **Step 3**	Go to **Step 4**
3	1. Reconnect the passenger side air bag module connector. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector for the passenger side air bag module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the passenger air bag module. 3. Connect an ohmmeter to the terminals on the SDM side of the wiring harness connector for the passenger side air bag module. Does the ohmmeter show the specified value?	0 ohms	Go to **Step 5**	Go to **Step 7**
	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool for CODE			

5	ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 005 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the passenger side air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 006

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The resistance of driver air bag deployment loop is lower than 1.4 ohms.
- The shorting bar is damaged and then the SDM must be replaced.

DTC 006

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.**				

CAUTION:
Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Remove the passenger side air bag module. 3. Connect an ohmmeter to the terminals of the wiring harness connector for the passenger air bag module on the sensing and diagnostic module (SDM) side of the connector. Does the ohmmeter show the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
3	1. Replace the SDM. 2. Install the passenger side air bag module. 3. Reconnect the negative battery cable. 4. Set the scan tool to CODE ERASE. 5. Perform the Diagnostic System Check - SIR. Is DTC 006 still shown as a current fault?	-	Go to **Step 4**	System OK
4	1. Replace the passenger air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Replace the supplemental inflatable restraint (SIR) wiring harness.			

5	2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 007

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance. If the resistance is in the 2 kilo ohms between 10 kilo ohms, the defect may occur depending upon the SDM. The normal resistance is over 10 kilo ohms.

Conditions for Setting the DTC

- The air bag wiring of passenger high is shorted to ground.
- The air bag wiring of passenger low is shorted to ground.

DTC 007

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the SDM capacitor to discharge. 3. Visually inspect the	-		

	supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?		Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector from the passenger air bag module. 2. Disconnect the electrical connector at the sensing and diagnostic module (SDM). The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the passenger side air bag module. 3. Use an ohmmeter to measure the continuity between ground and one of the terminals at the SDM side of the wiring harness connector for the passenger side air bag module. Is the resistance less than the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 007 still shown as a current fault?	-	Go to **Step 6**	System OK

6	1. Replace the passenger side air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 008

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance. If the resistance is in the 2 kilo ohms between 10 kilo ohms, the defect may occur depending upon the SDM. The normal resistance is over 10 kilo ohms.

Conditions for Setting the DTC

- The air bag wiring of passenger high is shorted to battery wiring.
- The air bag wiring of passenger low is shorted to battery wiring.

DTC 008

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
	1. Disconnect the negative battery cable. 2. Wait 1 minute for the SDM			

2	capacitor to discharge. The capacitor supplies reserve power to deploy the passenger side air bag even if the battery has been disconnected. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR wiring harness?	-	Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector for the passenger air bag module. 2. Disconnect the electrical connector at the sensing and diagnostic module (SDM). The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the passenger air bag module. 3. Use a multimeter to measure the voltage at one of the terminals on the SDM side of the SIR wiring harness connector for the passenger air bag module. Is the voltage greater than the specified value?	0 V	Go to **Step 3**	Go to **Step 5**
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 008 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the passenger side air bag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 009

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

The resistance of the driver belt pretensioner deploy loop is over 3.1 ohms.

DTC 009

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR	-		Go to **Diagnostic System**

	complete?		Go to **Step 2**	**Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Examine the wiring and the connector at the driver seat belt pretensioner module. Is the connector disconnected?	-	Go to **Step 3**	Go to **Step 4**
3	1. Reconnect the driver seat belt pretensioner module connector. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector for the driver seat belt pretensioner module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the driver seat belt pretensioner module. 3. Connect an ohmmeter to the terminals on the SDM side of the wiring harness connector for the driver seat belt pretensioner module. Does the ohmmeter show the specified value?	0 ohms	Go to **Step 5**	Go to **Step 7**
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool for CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 009 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the driver seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 010

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The resistance of the driver belt pretensioner deploy loop is lower than 1.5 ohms.
- The shorting bar is damaged and then the SDM must be replaced.

DTC 010

Step	Action	Values	Yes	No
CAUTION:				

Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.

CAUTION:
Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Connect an ohmmeter to the terminals of the wiring harness connector for the driver seat belt pretensioner module on the sensing and diagnostic module (SDM) side of the connector. Does the ohmmeter show the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
3	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 010 still shown as a current fault?	-	Go to **Step 4**	System OK
4	1. Replace the driver seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery	-	Go to **Diagnostic**	

	cable. Is the repair complete?		**System Check - SIR**	-

DTC 011

Circuit Description

When the ignition switch is turned to ON, the sensing as diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance. If the resistance is in the 2 kilo ohms between 10 kilo ohms, the defect may occur depending upon the SDM. The normal resistance is over 10 kilo ohms.

Conditions for Setting the DTC

- The belt pretensioner wiring of driver high is shorted to ground.
- The belt pretensioner wiring of driver low is shorted to ground.

DTC 011

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Visually inspect the	-		

	supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?		Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector from the driver seat belt pretensioner module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the driver seat belt pretensioner module. 3. Use an ohmmeter to measure the continuity between ground and one of the terminals at the SDM side of the wiring harness connector for the driver seat belt pretensioner module. Is the resistance less than the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 011 still shown as a current fault?	-	Go to **Step 6**	System OK

6	1. Replace the driver seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 012

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistances. If the resistance is in the 2 kilo ohms between 10 kilo ohms, the defect may occur depending upon the SDM. The normal resistance is over 10 kilo ohms.

Conditions for Setting the DTC

- The belt pretensioner wiring of driver high is shorted to battery wiring.
- The belt pretensioner wiring of driver low is shorted to battery wiring.

DTC 012

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
	1. Disconnect the battery negative cable. 2. Wait 1 minute for the sensing			

2	and diagnostic module (SDM) capacitor to discharge. The capacitor supplies reserve power to deploy the driver seat belt pretensioner even if the battery has been disconnected. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR wiring harness?	-	Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector for the driver seat belt pretensioner module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the driver seat belt pretensioner module. 3. Use a multimeter to measure the voltage at one of the terminals on the SDM side of the SIR wiring harness connector for the driver seat belt pretensioner module. Is the voltage greater than the specified value?	0 V	Go to **Step 3**	Go to **Step 5**
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 012 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the driver seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 013

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

The resistance of the passenger belt pretensioner deploy loop is over 3.1 ohms.

DTC 013

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR	-		Go to **Diagnostic System**

	complete?		Go to **Step 2**	**Check - SIR**
2	1. Disconnect the battery negative cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Examine the wiring and the connector at the passenger seat belt pretensioner module. Is the connector disconnected?	-	Go to **Step 3**	Go to **Step 4**
3	1. Reconnect the passenger seat belt pretensioner module connector. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector for the passenger seat belt pretensioner module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the passenger seat belt pretensioner module. 3. Connect an ohmmeter to the terminals on the SDM side of the wiring harness connector for the passenger seat belt pretensioner module. Does the ohmmeter show the specified value?	0 ohms	Go to **Step 5**	Go to **Step 7**
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 013 still shown as a current fault?	-	Go to **Step 6**	System OK
6	1. Replace the passenger seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 014

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The resistance of the passenger belt pretensioner deploy loop is lower than 1.5 ohms.
- The shorting bar is damaged and then the SDM must be replaced.

DTC 014

Step	Action	Values	Yes	No
CAUTION:				

Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.

CAUTION:
Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the battery negative cable. 2. Connect an ohmmeter to the terminals of the wiring harness connector for the passenger seat belt pretensioner module on the sensing and diagnostic module (SDM) side of the connector. Does the ohmmeter show the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
3	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 014 still shown as a current fault?	-	Go to **Step 4**	System OK
4	1. Replace the passenger seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery	-	Go to **Diagnostic**	

	cable. Is the repair complete?		**System Check - SIR**	-

DTC 015

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The belt pretensioner wiring of passenger high is shorted to ground.
- The belt pretensioner wiring of passenger low is shorted to ground.

DTC 015

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the battery negative cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness.	infinity		

	Is there any visible damage to the SIR harness?		Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector from the passenger seat belt pretensioner module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the passenger seat belt pretensioner module. 3. Use an ohmmeter to measure the continuity between ground and one of the terminals at the SDM side of the wiring harness connector for the passenger seat belt pretensioner module. Is the resistance less than the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 015 still shown as a current fault?	-	Go to **Step 6**	System OK
	1. Replace the passenger seat belt pretensioner module.			

6	2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 016

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The belt pretensioner wiring of passenger high is shorted to battery wiring.
- The belt pretensioner wiring of passenger low is shorted to battery wiring.

DTC 016

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
	1. Disconnect the battery negative cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. The capacitor supplies reserve			

2	power to deploy the passenger seat belt pretensioner even if the battery has been disconnected. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?	infinity	Go to **Step 3**	Go to **Step 4**
3	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the electrical connector from the passenger seat belt pretensioner module. 2. Disconnect the electrical connector at the SDM. The shorting bar at the disconnected SDM connector will create a complete circuit between the wires from the passenger seat belt pretensioner module. 3. Use a multimeter to measure the voltage at one of the terminals on the SDM side of the SIR wiring harness connector for the passenger seat belt pretensioner module. Is the voltage greater than the specified value?	0 V	Go to **Step 3**	Go to **Step 5**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE.	-		

	4. Perform the Diagnostic System Check - SIR. Is DTC 016 still shown as a current fault?		Go to **Step 6**	System OK
6	1. Replace the passenger seat belt pretensioner module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 023

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance. If the voltage is out of range, the SDM is unable to inspect the air bag system properly.

Conditions for Setting the DTC

The voltage supplied from the battery is over 16.5 volts.

DTC 023

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**

2	Inspect the vehicle's charging system. Refer to **Charging System Test** in Engine Electrical. Is the charging system OK?	Go to **Step 4**	Go to **Step 3**
3	Repair the charging system. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Disconnect the negative battery cable. 2. Replace the sensing and diagnostic module (SDM). Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 024

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance. If the voltage is out of range, the SDM is unable to inspect the air bag system properly.

Conditions for Setting the DTC

The voltage supplied from the battery is lower than 10.6 volts.

DTC 024

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR	-		Go to **Diagnostic System**

	complete?		Go to **Step 2**	**Check - SIR**
2	Inspect the fuse F8. Is the fuse open?	-	Go to **Step 3**	Go to **Step 4**
3	1. Inspect for a short circuit. 2. Repair if needed. 3. Replace the fuse. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Turn the ignition ON. 2. Using a multimeter, measure the voltage at the fuse F8. Is the battery voltage available at the fuse F8?	11-14 V	Go to **Step 6**	Go to **Step 5**
5	Repair the power supply to the fuse F8. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
6	1. Disconnect the negative battery cable. 2. Wait 1 minute before proceeding. 3. Disconnect the connector at the sensing and diagnostic module (SDM). 4. Reconnect the battery. 5. Turn the ignition key ON. 6. Measure the voltage at the terminal 5 of the SDM connector. Is the voltage equal to the specified value?	11-14 V	Go to **Step 7**	Go to **Step 8**
7	1. Replace the SDM. 2. Reconnect the electrical connectors. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Disconnect the connector C214. The connector C214 is the			

8	connector between the instrument harness and the supplemental inflatable restraint (SIR) harness. 2. Turn the ignition ON. 3. Using a multimeter, measure the voltage on the instrument harness side at terminal 3 of the connector C214. Is the voltage equal to the specified value?	11-14 V	Go to **Step 9**	Go to **Step 10**
9	1. Replace the SIR wiring harness. 2. Reconnect the battery. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
10	Repair the open circuit between the fuse F8 and the connector C214. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 025

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance. If the warning lamp operates properly ON and OFF, the SDM measures the voltage continuously from the warning lamp terminal.

Conditions for Setting the DTC

The warning lamp does not blink properly ON and OFF.

Diagnostic Aids

When the ignition switch is turned ON, the warning lamp blinks 7 times during 7 seconds.

If the warning lamp stays ON or blinks a second after the normal blinking, 7 times during 7 seconds, then it is regarded as a defect, old or current. Please inspect the defect with a scan tool.

DTC 025

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	Turn the ignition ON. Is the warning lamp constantly ON?	-	Go to **Step 3**	Go to **Step 10**
3	Make sure the sensing and diagnostic module (SDM) connector is attached correctly. Does the warning lamp turn OFF?	-	Go to **Diagnostic System Check - SIR**	Go to **Step 4**
4	1. Inspect for indications of a diagnostic trouble code (DTC) other than code 025. 2. Go to the appropriate DTC charts and repair each additional problem. 3. Perform the **Diagnostic System Check - SIR**. Does the scan tool still indicate the DTC 025?	-	Go to **Step 5**	System OK
5	Inspect for a short to ground between the SDM and the warning lamp using the following method: 1. Turn the ignition OFF. 2. Disconnect the connector C214. 3. Connect 1 ohmmeter lead to ground.	infinity		

	4. Touch the other ohmmeter lead to the terminal 3 of the connector C214 on the instrument harness side. Does the ohmmeter indicate the specified value?		Go to **Step 7**	Go to **Step 6**
6	Repair the short to ground in the instrument harness. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	1. The connector C214 remains disconnected. 2. One lead of the ohmmeter remains connected to ground. 3. Move the ohmmeter lead at the connector C214 to the SDM side of the connector. Does the ohmmeter indicate the specified value?	infinity	Go to **Step 8**	Go to **Step 9**
8	Replace the SDM. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
9	1. Disconnect the negative battery cable. 2. Replace the SIR wiring harness. 3. Perform the **Diagnostic System Check - SIR**. Is DTC 025 still shown?	-	Go to **Step 6**	System OK
10	Inspect the fuse F4. Is fuse F4 open?	-	Go to **Step 11**	Go to **Step 12**
11	1. With the connector C214 temporarily disconnected, inspect for a short to ground between the fuse F4 and the warning lamp. 2. Make a repair, if needed. 3. Replace fuse F4.	-	Go to **Diagnostic**	

	Is the repair complete?		**System Check - SIR**	-
12	1. Turn the ignition ON. 2. Using a multimeter, measure the voltage at fuse F4. Does the multimeter show the specified value?	11-14 V	Go to **Step 14**	Go to **Step 13**
13	Repair the open power supply circuit for the fuse F4. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
14	1. Disconnect the connector C214. 2. Turn the ignition ON. 3. Using a multimeter, measure the voltage on the instrument harness side of the terminal 1 of the connector C214. Does the multimeter show the specified value?	11-14 V	Go to **Step 16**	Go to **Step 15**
15	1. Inspect the warning lamp bulb. 2. Replace the warning lamp bulb, if needed. 3. If the bulb is good, repair the open circuit between the fuse F4 and the terminal 1 of the connector C214. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
16	1. Disconnect the negative battery terminal. 2. Wait at least 1 minute before proceeding. 3. Replace the SIR wiring harness. Is the repair complete?	-	System OK	-

DTC 031

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

Conditions for Setting the DTC

- The SDM does not pass internal tests.
- The wiring harness of the SDM should be inspected before replacing the SDM.

DTC 031

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the SDM capacitor to discharge. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?	Go to **Step 4**	Go to **Step 3**
3	1. Disconnect the negative battery cable. 2. Replace the sensing and diagnostic module (SDM). Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 032

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

In case of air bag inflation by a vehicle collision, the SDM maintains the warning lamp ON and then all the air bag systems including the SDM, air bag module, and wiring should be replaced.

Conditions for Setting the DTC

The history of air bag inflation or belt pretensioner explosion is in the SDM.

DTC 032

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Replace the sensing and diagnostic module (SDM). Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 033

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

In case of driver side air bag inflation by side impact, the SDM maintains the warning lamp ON. All the air bag systems, including the pretensioners, the side air bag sensor, and the wiring should be replaced. If the driver side air bag inflation by side impact counts over 5, the SDM should also be replaced.

Conditions for Setting the DTC

The history of air bag inflation or belt pretensioner explosion is in the SDM.

DTC 033

Step	Action	Yes	No
	CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**		
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?	Go to **Step 4**	Go to **Step 3**
3	1. Disconnect the negative battery cable. 2. Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 034

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

In case of passenger side air bag inflation by side impact, the SDM maintains the warning lamp ON. All the air bag systems, including the pretensioners, the side air bag sensor, and the wiring should be replaced. If the passenger side air bag inflation by side impact counts over 5, the SDM should also be replaced.

Conditions for Setting the DTC

The history of passenger air bag inflation or belt pretensioner explosion is in the SDM.

DTC 034

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the SDM capacitor to discharge. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?	Go to **Step 4**	Go to **Step 3**
3	1. Disconnect the negative battery cable. 2. Replace the sensing and diagnostic module (SDM). Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 035

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

In case of pretensioner explosion without front air bag inflation due to insufficient impact, replace the exploded belt pretensioner and remove the defect code using the scan tool. If the belt pretensioner explosion counts over 5, then the SDM should also be replaced.

Conditions for Setting the DTC

The history of belt pretensioner explosion is in the SDM.

DTC 035

Step	Action	Yes	No
	CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**		
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?	Go to **Step 4**	Go to **Step 3**
3	1. Disconnect the negative battery cable. 2. Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 038

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

If the SDM has been used 5 times for 5 explosions of the belt pretensioners or side air bags, the SDM should also be replaced.

Conditions for Setting the DTC

The count of the belt pretensioner and side air bag explosion is over 5 in the SDM.

DTC 038

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Disconnect the negative battery cable. 2. Wait 1 minute for the sensing and diagnostic module (SDM) capacitor to discharge. 3. Visually inspect the supplemental inflatable restraint (SIR) wiring harness. Is there any visible damage to the SIR harness?	Go to **Step 4**	Go to **Step 3**
3	1. Disconnect the negative battery cable. 2. Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the SIR wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 052

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

The resistance of the driver side air bag deployment loop is higher than 2.7 ohms.

DTC 052

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	Visually inspect the connector and the wiring of the driver side air bag. Is the connector and wiring OK?	-	Go to **Step 4**	Go to **Step 3**
3	Connect the connector or replace supplemental inflatable restraint (SIR) wiring harness. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Confirm the ignition switch is OFF. 2. Disconnect the connector of the driver side air bag module. 3. Disconnect the connector of the sensing and diagnostic module (SDM) wiring. 4. Measure the resistance between the terminal 18, 19 of the SDM and the terminal 1, 2 of the driver side air bag module.	0 ohms		

	Is the resistance at the specified value?		Go to **Step 6**	Go to **Step 5**
5	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
6	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 052 still shown as a current fault?	-	Go to **Diagnostic System Check - SIR**	Go to **Step 7**
7	Replace the drive side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 053

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The resistance of the driver air bag deployment loop is lower than 1.4 ohms.
- The shorting bar is damaged and the SDM must be replaced.

DTC 053

Step	Action	Values	Yes	No
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**

2	1. Disconnect the driver side airbag module. 2. Disconnect the connector of the sensing and diagnostic module (SDM). 3. Connect an ohmmeter to the terminals of the wiring harness connector for the driver side airbag module. Does the ohmmeter show the specified value?	infinity	Go to **Step 3**	Go to **Step 5**
3	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool CODE ERASE. 4. Perform the Diagnostic System Check - SIR Is DTC 053 still shown as a current fault?	-	Go to **Step 4**	System OK
4	1. Replace the driver side airbag module. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the supplemental inflatable restraint (SIR) wiring harness. 2. Reconnect the negative battery cable. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 054

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The side air bag wiring of driver high is shorted to ground.
- The side air bag wiring of driver low is shorted to ground.

DTC 054

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait for 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the air bag wiring. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the driver side air bag module and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 054 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the driver side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 055

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The side air bag wiring of driver high is shorted to battery wiring.
- The side air bag wiring of driver low is shorted to battery wiring.

DTC 055

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
	1. Confirm the ignition switch is OFF. 2. Wait for 1 minute for the sensing			

2	and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the air bag wiring. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the driver side air bag module and the battery. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 055 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the driver side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 056

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops. The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

The resistance of the passenger side air bag deployment loop is over 2.8 ohms.

DTC 056

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	Visually inspect any damage for the passenger side air bag wiring and the connector. Is the air bag wiring damaged or the connector disconnected?	-	Go to **Step 3**	Go to **Step 4**
3	Repair the wiring damage or connect the connector. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Confirm the ignition switch is OFF. 2. Disconnect the connector of the passenger side air bag module. 3. Remove the connector of the sensing and diagnostic module (SDM). 4. Measure the resistance between the terminal 1, 2 passenger side air bag module and the terminal 16, 17 of the SDM. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 7**
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 056 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the passenger side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
7	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 057

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops. The SDM inspects the wiring connection to the passenger side air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The resistance of the driver side air bag deployment loop is lower than 1.4 ohms.
- The shorting bar is damaged and the SDM must be replaced.

DTC 057

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
	Perform the Diagnostic System Check			Go to

1	- SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	**Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Disconnect the connector of the passenger side air bag module. 3. Remove the connector of the sensing and diagnostic module (SDM). 4. Using an ohmmeter, measure the resistance between the terminals 1, 2 of the passenger side air bag module. Does the ohmmeter show the specified value?	infinity	Go to **Step 4**	Go to **Step 3**
3	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 057 still shown as a current fault?	-	Go to **Step 5**	Go to **Diagnostic System Check - SIR**
5	Replace the passenger side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 058

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops. The SDM inspects the wiring connection to the passenger side air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The side air bag wiring of the passenger high is shorted to ground.
- The side air bag wiring of the passenger low is shorted to ground.

DTC 058

Step	Action	Values	Yes	No
CAUTION: Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices. **CAUTION:** Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the air bag wiring. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the passenger side air bag module and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Replace the SDM.			

5	2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 058 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the passenger side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 059

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops. The SDM inspects the wiring connection to the passenger air bag module by letting the infinitesimal current flow through the internal circuit and verify the resistance.

Conditions for Setting the DTC

- The side air bag wiring of the passenger high is shorted to battery wiring.
- The side air bag wiring of the passenger low is shorted to battery wiring.

DTC 059

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR	-		Go to **Diagnostic System**

	complete?		Go to **Step 2**	**Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the air bag wiring. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the passenger side air bag module and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 059 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the passenger side air bag module. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 080

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within

their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The side air bag sensor wiring of the driver high is shorted to battery wiring.
- The side air bag sensor wiring of the driver low is shorted to battery wiring.

DTC 080

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the driver side air bag wiring. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the driver side air bag sensor and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
	1. Replace the SDM. 2. Reconnect the negative battery cable.			

5	3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 080 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the driver side air bag sensor. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 081

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The side air bag sensor wiring of the driver high is shorted to ground.
- The side air bag sensor wiring of the driver low is shorted to ground.

DTC 081

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing			

2	and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the driver side air bag wiring and connector. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the driver side air bag sensor and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 081 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the driver side air bag sensor. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 082

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

A communication error occurs between the SDM and the driver side air bag sensor.

DTC 082

Step	Action	Yes	No
CAUTION: Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices. **CAUTION:** Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the driver side air bag sensor wiring and connector. Is the air bag wiring damaged?	Go to **Step 3**	Go to **Step 4**
3	Replace the air bag wiring. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the driver side air bag sensor. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 082 still shown as a current fault?	Go to **Step 5**	Go to **Diagnostic System Check - SIR**
5	Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 083

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

The driver side air bag sensor is inoperative.

DTC 083

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the driver side air bag sensor wiring and connector. Is the air bag wiring damaged?	Go to **Step 3**	Go to **Step 4**
3	Replace the air bag wiring. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the driver side air bag sensor. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR.		Go to **Diagnostic System Check -**

	Is DTC 083 still shown as a current fault?	Go to **Step 5**	**SIR**
5	Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 084

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The side air bag sensor wiring of the passenger high is shorted to battery wiring.
- The side air bag sensor wiring of the passenger low is shorted to battery wiring.

DTC 084

Step	Action	Values	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**				
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the passenger side air bag sensor wiring and connector.	-		

	Is the air bag wiring damaged?		Go to **Step 3**	Go to **Step 4**
3	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
4	Measure the resistance between the SDM and the high, low terminal of the passenger side air bag sensor and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 3**
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 084 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
6	Replace the passenger side air bag sensor. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-

DTC 085

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

- The side air bag sensor wiring of the passenger high is shorted to ground.
- The side air bag sensor wiring of the passenger low is shorted to ground.

DTC 085

Step	Action	Values	Yes	No

CAUTION:
Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.

CAUTION:
Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the passenger side air bag wiring and connector. Is the air bag wiring damaged?	-	Go to **Step 4**	Go to **Step 3**
3	Measure the resistance between the SDM and the high, low terminal of the passenger side air bag sensor and the ground. Is the resistance at the specified value?	10 K ohms	Go to **Step 5**	Go to **Step 4**
4	Replace the air bag wiring. Is the repair complete?	-	Go to **Diagnostic System Check - SIR**	-
5	1. Replace the SDM. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 085 still shown as a current fault?	-	Go to **Step 6**	Go to **Diagnostic System Check - SIR**
	Replace the passenger side air bag sensor.		Go to **Diagnostic**	

6	Is the repair complete?	-	**System Check - SIR**	-

DTC 086

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

A communication error occurs between the SDM and the passenger side air bag sensor.

DTC 086

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the passenger side air bag sensor wiring and connector. Is the air bag wiring damaged?	Go to **Step 3**	Go to **Step 4**
3	Replace the air bag wiring. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

4	1. Replace the passenger side air bag sensor. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 086 still shown as a current fault?	Go to **Step 5**	Go to **Diagnostic System Check - SIR**
5	Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

DTC 087

Circuit Description

When the ignition switch is turned to ON, the sensing and diagnostic module (SDM) will perform a turn-on test to diagnose critical malfunctions within the SDM itself.

The test ignition and deployment loop voltages are measured to ensure that they are within their normal voltage ranges. The SDM monitors the voltages at the driver low and the passenger low to detect shorts to ground or voltage in the deploy loops.

Conditions for Setting the DTC

The passenger side air bag sensor is inoperative.

DTC 087

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	Perform the Diagnostic System Check - SIR. Is the Diagnostic System Check - SIR complete?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
	1. Confirm the ignition switch is OFF. 2. Wait 1 minute for the sensing and		

2	diagnostic module (SDM) charger to be discharged. 3. Visually inspect any damage for the passenger side air bag sensor wiring and connector. Is the air bag wiring damaged?	Go to **Step 3**	Go to **Step 4**
3	Replace the air bag wiring. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-
4	1. Replace the passenger side air bag sensor. 2. Reconnect the negative battery cable. 3. Set the scan tool to CODE ERASE. 4. Perform the Diagnostic System Check - SIR. Is DTC 087 still shown as a current fault?	Go to **Step 5**	Go to **Diagnostic System Check - SIR**
5	Replace the SDM. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

SDM INTEGRITY CHECK

The following diagnostic chart must be used when all circuitry outside the sensing and diagnostic module (SDM) has been found to operate properly, as indicated by following the appropriate diagnostic trouble code (DTC) chart. The chart verifies the need for SDM replacement.

Circuit Description

When the SDM recognizes ignition voltage greater than 9 volts at terminal A1 of the SDM, the air bag indicator flashes 7 times to verify operation. At this time the SDM performs turn-on tests followed by resistance measurement tests and continuous monitoring tests.

When a malfunction is detected, the SDM sets a current DTC and illuminates the air bag indicator.

When the malfunction is no longer detected and/or the ignition switch is cycled, the SDM will clear current DTCs and move them to a history file, except for the DTC 051, 053, and sometimes 071. DTC 051 and 053 will not be cleared by the scan tool because these codes

require replacement of the SDM. The SDM must be replaced only after the malfunction that set the DTC has been repaired.

SDM Integrity Check

Step	Action	Yes	No
CAUTION: **Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.** **CAUTION:** **Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.**			
1	1. Turn the ignition to LOCK and remove the key. 2. Connect all SIR components and ensure that all the components are properly mounted. 3. Ensure that the ignition switch has been OFF for at least 30 seconds. 4. Observe the air bag indicator as the ignition is turned ON. Does the indicator lamp flashes 7 times?	Go to **Diagnostic System Check - SIR**	Go to **Step 2**
2	1. Turn the ignition to LOCK and remove the key. 2. Connect the scan tool to the data link connector (DLC). Follow the directions given in the scan tool manual. 3. Turn the ignition to ON. 4. Request the SIR DTC display with the scan tool. Is the same DTC displayed that occurred when the SIR Diagnostic System Check was previously performed?	Go to **Step 3**	Go to **Diagnostic Trouble Code (DTC) List**
3	1. Clear the SIR DTCs. 2. Turn the ignition OFF for at least 30 seconds. 3. Observe the air bag indicator as the ignition is turned ON.		

	Does the indicator lamp flashes 7 times?	System OK	Go to **Step 4**
4	1. Turn the ignition to LOCK and remove the key. 2. Disconnect the sensing and diagnostic module (SDM) connector. 3. Replace the SDM. 4. Connect the SDM connector and ensure that all components are properly mounted. Is the repair complete?	Go to **Diagnostic System Check - SIR**	-

SYMPTOMS - SIR

IMPORTANT: The following steps must be completed before using the symptom tables.

1. Perform the **Diagnostic System Check - SIR** before using the Symptom Tables in order to verify that all of the following are true:
   - There are no DTCs set.
   - The control module(s) can communicate via the serial data link.
2. Review the system 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 a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Air Bag Indicator Always On**
- **Air Bag Indicator Does Not Come ON**

AIR BAG INDICATOR ALWAYS ON

Circuit Description

The ignition switch supplies ignition 1 voltage to the inflatable restraint sensing and diagnostic module (SDM) using the F8 fuse. The ignition switch also supplies battery voltage to the AIR BAG indicator using the F4 fuse. The AIR BAG indicator is connected to the AIR BAG indicator output of the SDM. When the ignition switch is first turned to the ON position, the SDM responds by flashing the AIR BAG indicator 7 times.

Diagnostic Aids

In order to disable the shorting bar between the air bag indicator control circuit and ground inside the SDM wiring harness connector, the following 2 conditions must be met:

- The SDM wiring harness connector must be properly connected to the SDM.
- The connector position assurance (CPA) must be properly installed in the SDM wiring harness connector.

Test Description

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

2: This step determines if the malfunction is caused by a battery overcharge condition.

Air Bag Indicator Always On

Step	Action	Values	Yes	No
Schematic Reference: SIR Schematics				
1	Did you perform the Diagnostic System Check - SIR?	-	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
2	1. Turn OFF the ignition. 2. Disconnect the sensing and diagnostic module (SDM) connector. 3. Inspect the SDM connector and the shorting bar for damage or corrosion. Did you find and correct the condition?	7-17 ohms	Go to **Step 5**	Go to **Step 3**
3	Test the air bag indicator control circuit for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs**	5.5-6.5 ohms		

	in Wiring Systems. Did you find and correct the condition?		Go to **Step 5**	Go to **Step 4**
4	Replace the SDM. Refer to **Inflatable Restraint Sensing and Diagnostic Module Replacement**. Did you complete the replacement?	-	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 2**

AIR BAG INDICATOR DOES NOT COME ON

Circuit Description

The ignition switch supplies ignition 1 voltage to the inflatable restraint sensing and diagnostic module (SDM) using the F8 fuse. The ignition switch also supplies battery voltage to the AIR BAG indicator using the F4 fuse. The AIR BAG indicator is connected to the AIR BAG indicator output of the SDM. When the ignition switch is first turned to the ON position, the SDM responds by flashing the AIR BAG indicator seven times.

Diagnostic Aids

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 a 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.

3: This step tests for proper operation of the air bag indicator control circuitry. With the SDM connector disconnected, the shorting bar connects the Air Bag Indicator Control circuit to ground and should illuminate the indicator.

Air Bag Indicator Does Not Come ON

Step	Action	Yes	No
Schematic Reference: SIR Schematics			
1	Did you perform the Diagnostic System Check - SIR?	Go to **Step 2**	Go to **Diagnostic System Check - SIR**
			Go to **Symptoms -**

2	Do any of the other instrument cluster indicators or gages function?	Go to **Step 3**	**Instrument Panel, Gages and Console** in Instrument Panel, Gages, and Console
3	1. Turn OFF the ignition. 2. Disconnect the sensing and diagnostic module (SDM) connector. 3. Turn ON the ignition, with the engine OFF. Does the AIR BAG indicator come ON?	Go to **Step 5**	Go to **Step 4**
4	1. Turn OFF the ignition. 2. Inspect the SDM connector for the following conditions: • Corrosion • Damaged terminals • Poor connections/terminal tension Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 6**
5	Replace the SDM. Refer to **Inflatable Restraint Sensing and Diagnostic Module Replacement**. Did you complete the replacement?	Go to **Step 7**	-
6	Repair the open or high resistance in the air bag indicator control circuit. Refer to **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	-
7	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

SIR DISABLING AND ENABLING ZONES

IMPORTANT: Refer to SIR Service Precautions before disabling the SIR

system.
The 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 Component 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.

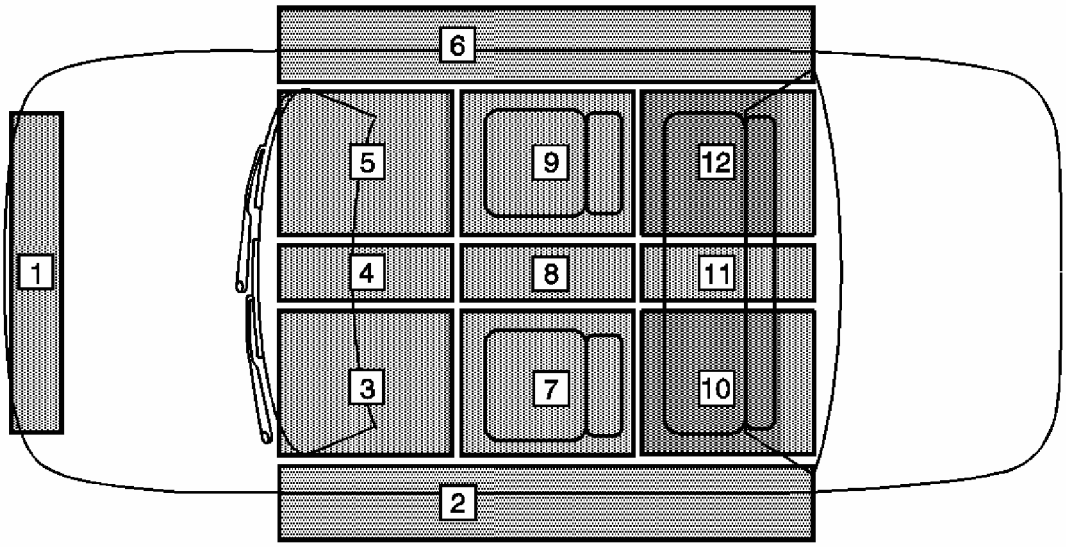


Fig. 4: Identifying SIR Disabling and Enabling Zones
Courtesy of GENERAL MOTORS CORP.

SIR Disabling and Enabling Zones

Zone	Description
1	Not Used
2	Pretensioner - Left and Side Impact Sensor (SIS) - LF-Refer to **SIR Disabling and Enabling Zone 2**.
3	Inflatable Restraint Steering Wheel Module and Coil-Refer to **SIR Disabling and Enabling Zone 3**.
4	Not Used
5	Inflatable Restraint Instrument Panel (IP) Module-Refer to **SIR Disabling and Enabling Zone 5**.
6	Pretensioner - Right and Side Impact Sensor (SIS) - RF-Refer to **SIR**

	Disabling and Enabling Zone 6.
7	Driver Seat with LF Side Impact-Refer to **SIR Disabling and Enabling Zone 7**.
8	Inflatable Restraint Sensing and Diagnostic Module (SDM)-Refer to **SIR Disabling and Enabling Zone 8**.
9	Passenger Seat with RF Side Impact-Refer to **SIR Disabling and Enabling Zone 9**.
10	Not Used
11	Not Used
12	Not Used

REPAIR INSTRUCTIONS

SIR SERVICE PRECAUTIONS

CAUTION: Refer to Servicing the SIR System Caution in Cautions and Notices.

CAUTION: The sensing and the diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for up to 1 minute after the ignition has been turned OFF and the fuse has been removed. If the airbags and pretensioners are not disconnected, do not begin service until one minute has been passed after disconnecting power to the SDM. Failure to do so may cause personal injury.

DISABLING THE SIR SYSTEM

1. Turn the steering wheel to the straight-ahead position.
2. Turn the ignition switch to LOCK and remove the key.
3. Remove the air bag fuse F8 in the I/P fuse block and wait more than 1 minute for the SIR capacitor to discharge.
4. Refer to **SIR Disabling and Enabling Zones** for proper zone disabling and enabling.

SIR DISABLING AND ENABLING ZONE 2

Disabling Procedure

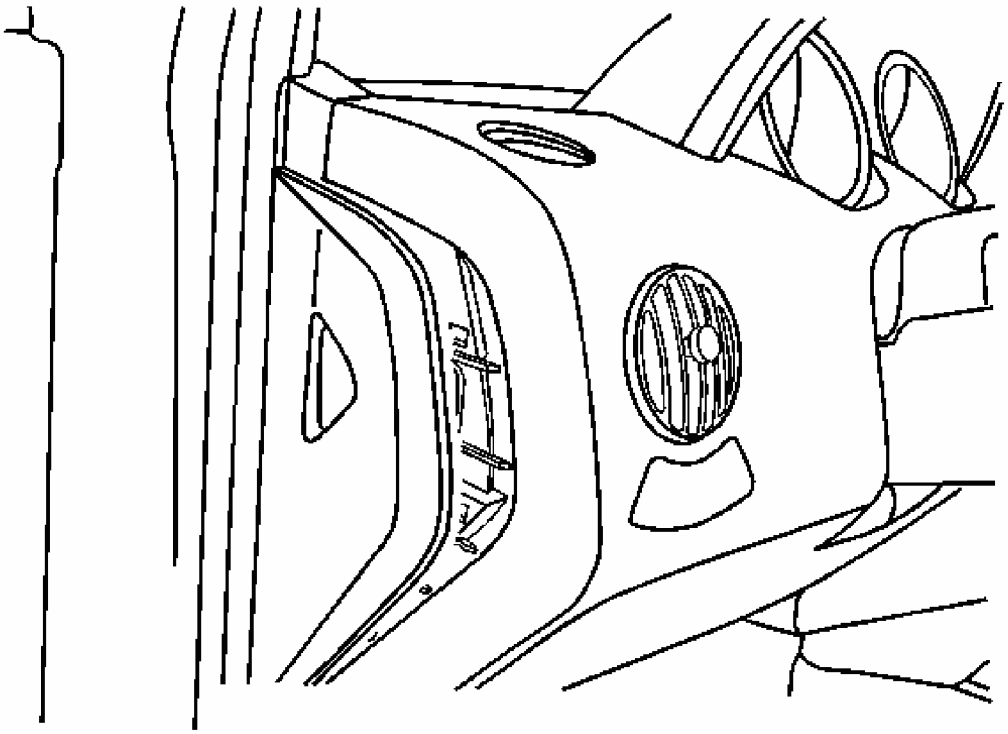


Fig. 5: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

1. Turn the steering wheel so that the vehicles wheels are pointing straight ahead.
2. Turn the ignition switch to the OFF position.
3. Remove the key from the ignition switch.
4. Locate the instrument panel (I/P) fuse box then remove fuse box cover.

IMPORTANT: With the F8 fuse removed and the ignition switch in the ON position, the AIR BAG warning indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

5. Locate and remove the F8 fuse.

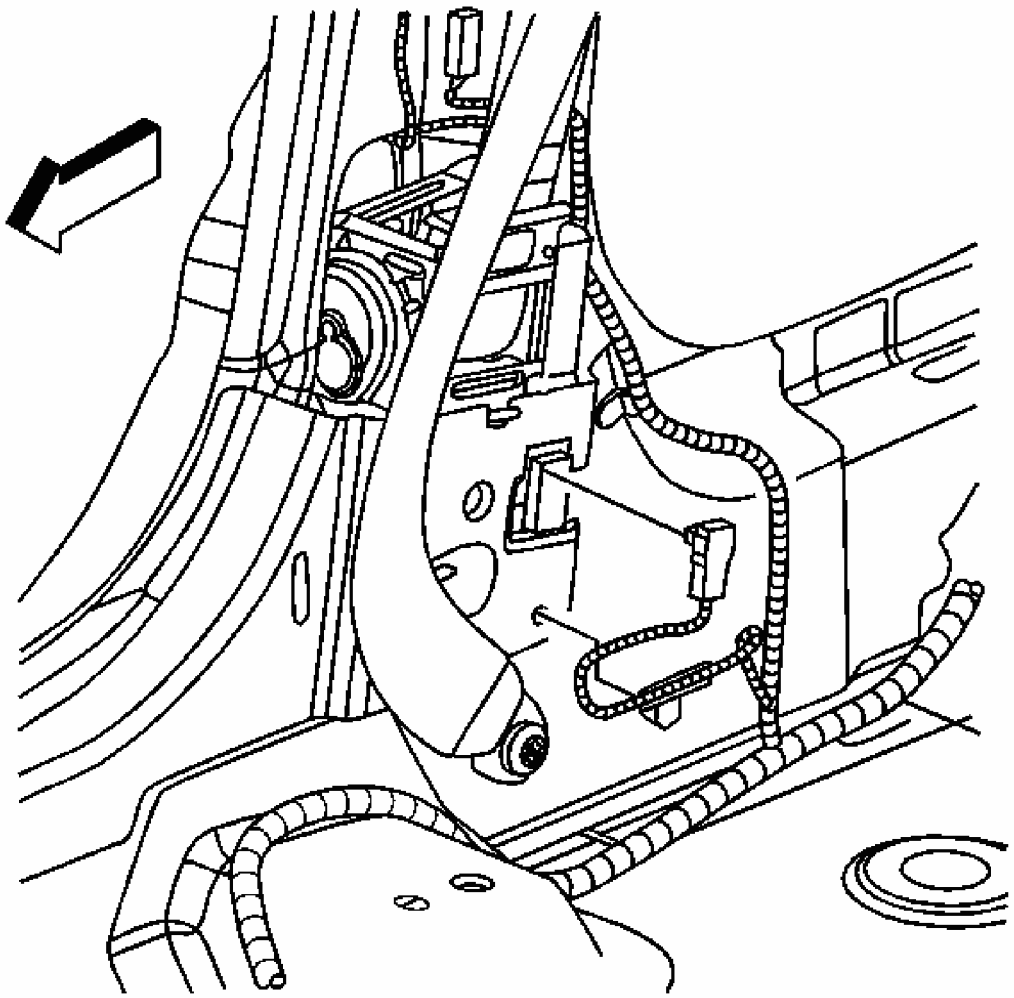


Fig. 6: View Of Seat Belt Pretensioner Connector And Wiring Harness Routing
Courtesy of GENERAL MOTORS CORP.

6. Remove the lower center pillar trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
7. Remove the connector position assurance (CPA) from the seat belt pretensioner - LF connector.
8. Disconnect the seat belt pretensioner - LF connector from the vehicle harness connector.
9. Remove the CPA from the side air bag sensor - LF connected.
10. Disconnect the side air bag sensor - LF connector.

Enabling Procedure

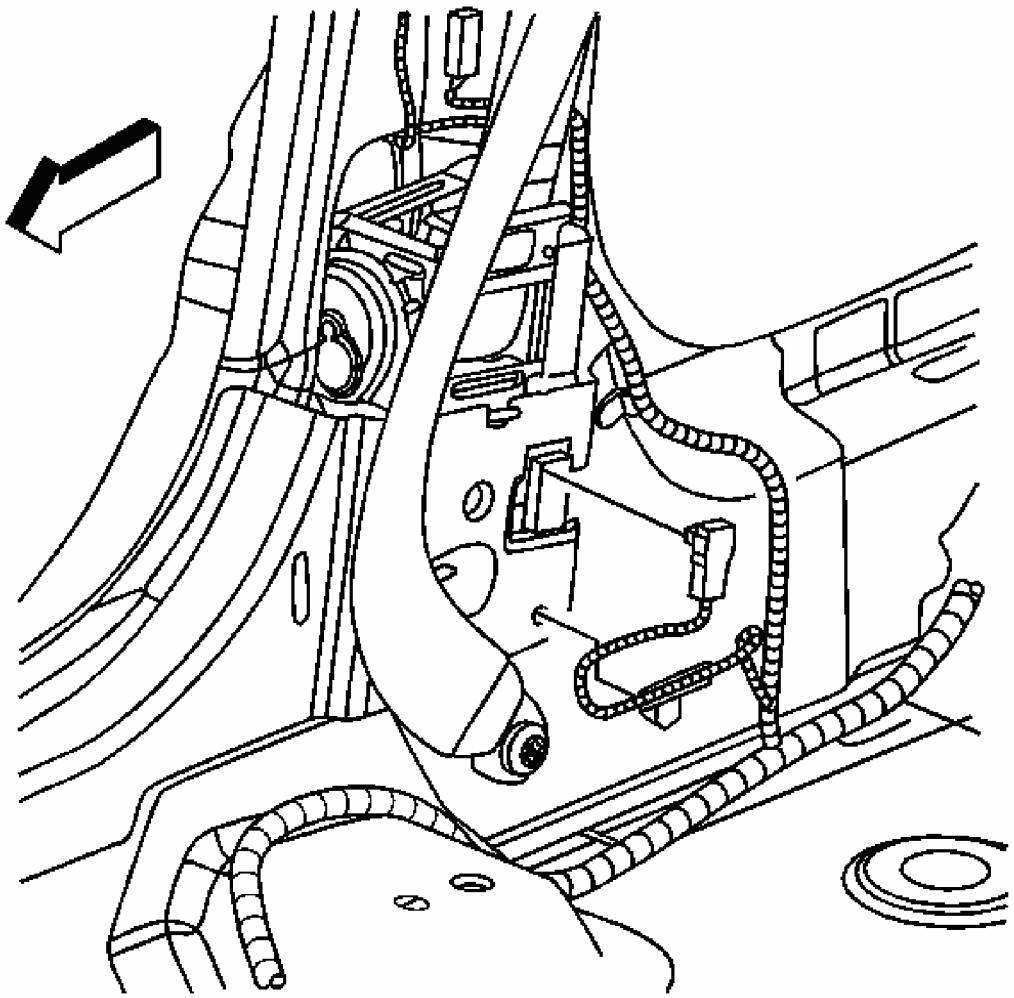


Fig. 7: View Of Seat Belt Pretensioner Connector And Wiring Harness Routing
Courtesy of GENERAL MOTORS CORP.

1. Remove the key from the ignition switch.
2. Connect the side air bag sensor - LF connector and install the CPA.
3. Connect the seat belt pretensioner - LF and install the CPA.
4. Install the lower center pillar. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.

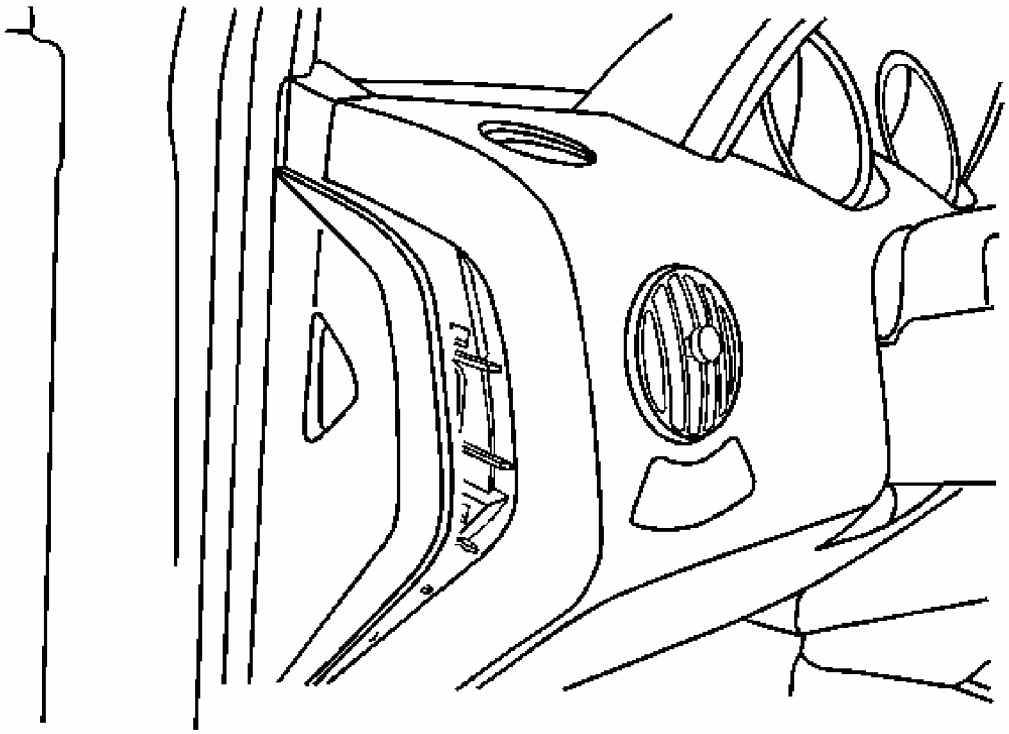


Fig. 8: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

5. Install the F8 fuse.
6. Install the fuse box cover.
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 - SIR if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - SIR**.

SIR DISABLING AND ENABLING ZONE 3

Disabling Procedure

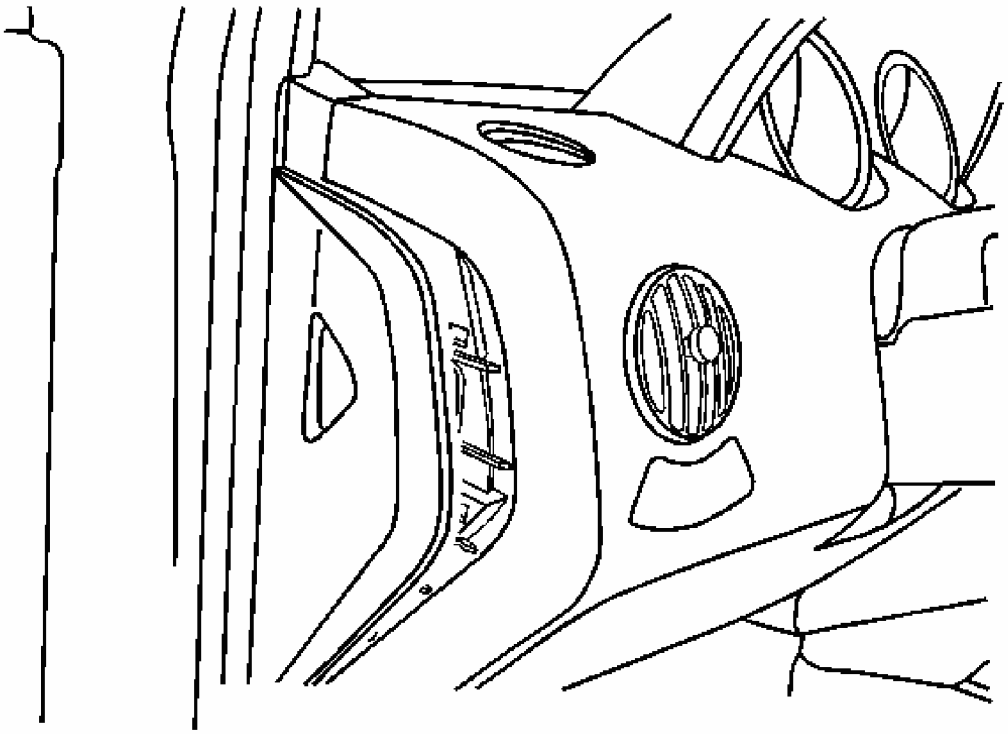


Fig. 9: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Perform this procedure in order to prevent deployment of the air bags from the reserve energy supply power.

1. Turn the steering wheel so that the vehicle wheels are pointing straight ahead.
2. Remove the key from the ignition switch.

IMPORTANT: With the F8 fuse removed and the ignition switch in the ON position, the AIR BAG warning indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

3. Remove the F8 fuse.
4. Remove the lower steering column trim panel. Refer to **Instrument Panel (I/P) Trim Panel Replacement - Lower** in Instrument Panel, Gages, and Console.
5. Remove the knee bolster.

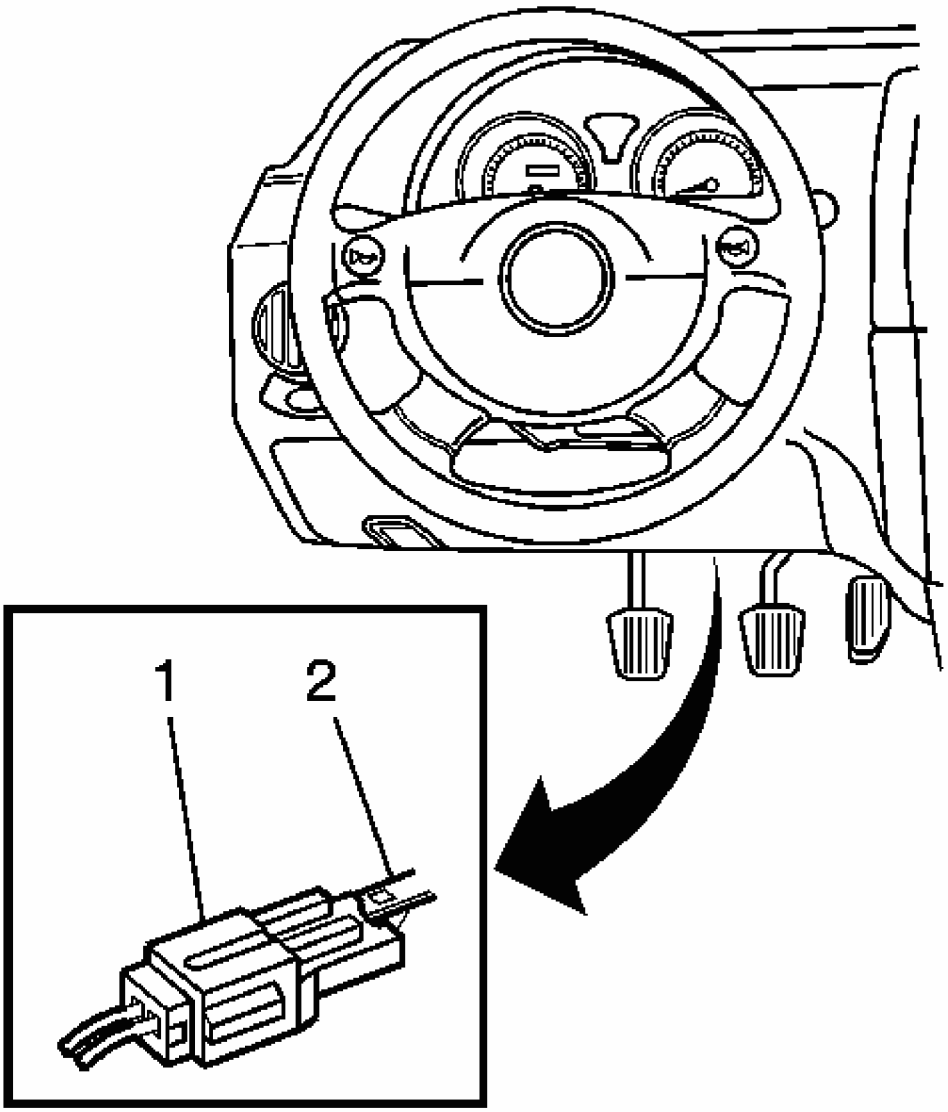


Fig. 10: CPA & Yellow 2-Way Connector For The Inflatable Restraint Steering Wheel Module
Courtesy of GENERAL MOTORS CORP.

6. Remove the following parts.
   - The connector position assurance (CPA)
   - The yellow 2-way connector for the inflatable restraint steering wheel module- Release then unlock the connector.

Enabling Procedure

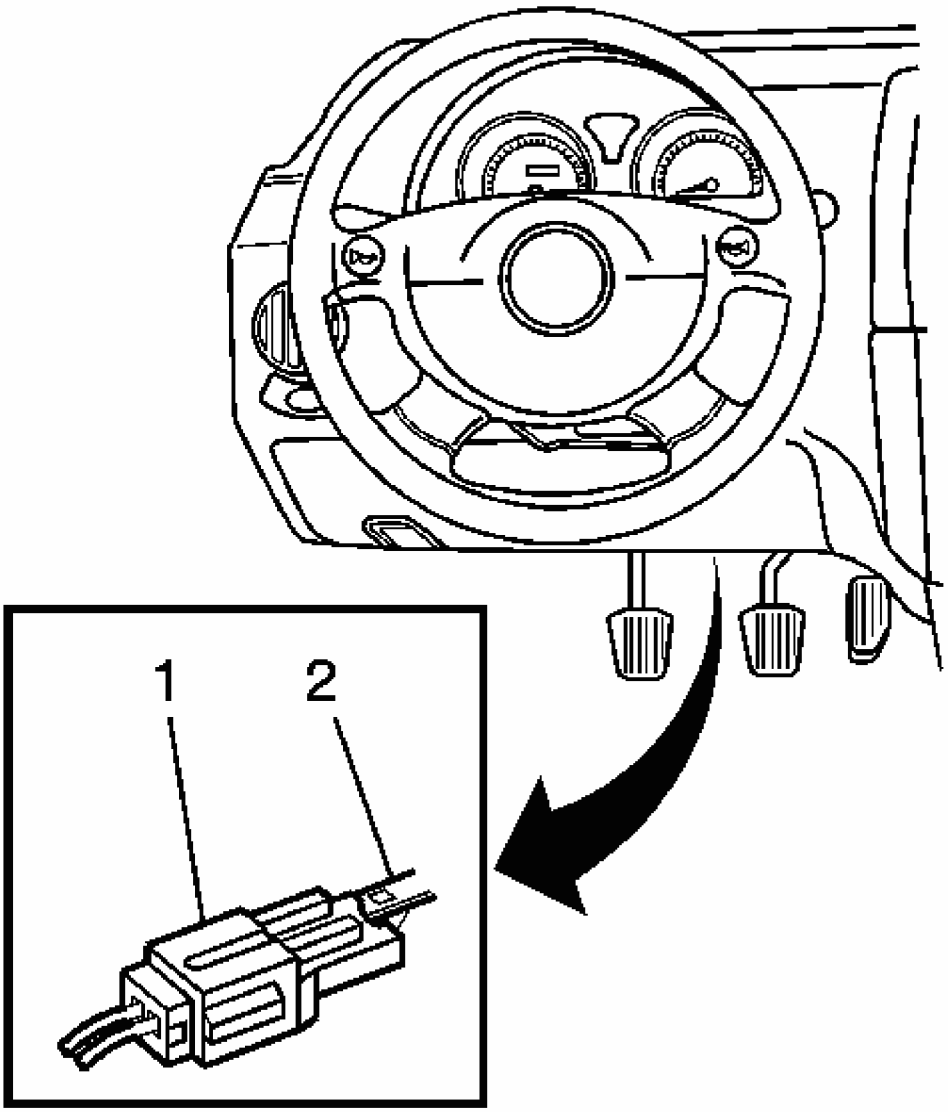


Fig. 11: CPA & Yellow 2-Way Connector For The Inflatable Restraint Steering Wheel Module
Courtesy of GENERAL MOTORS CORP.

1. Remove the key from the ignition switch.
2. Install the yellow 2-way connector and install the CPA for the inflatable restraint steering wheel module and the steering wheel side cap.
3. Install the knee bolster.
4. Install the lower steering column trim panel. Refer to **Instrument Panel (I/P) Trim**

Panel Replacement - Lower in Instrument Panel, Gages, and Console.

5. Install the F8 fuse.
6. Staying well away from both air bags, turn the ignition switch to the ON position. Verify that the AIR BAG warning indicator flashes seven times and then stays OFF. If the AIR BAG warning indicator does not operate as described, refer to **Diagnostic System Check - SIR**.

SIR DISABLING AND ENABLING ZONE 5

Disabling Procedure

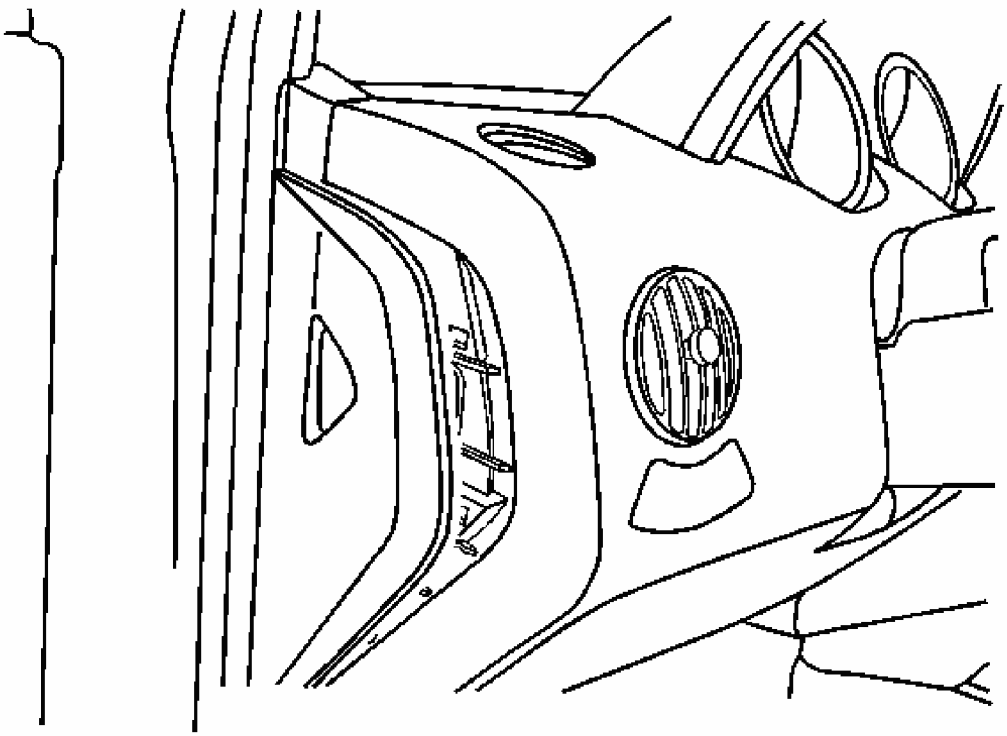


Fig. 12: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Perform this procedure in order to prevent deployment of the air bags from the reserve energy supply power.

1. Turn the steering wheel so that the vehicle wheels are pointing straight ahead.
2. Remove the key from the ignition switch.

IMPORTANT: With the F8 fuse removed and the ignition switch in the ON position, the AIR BAG warning indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

3. Remove the F8 fuse.

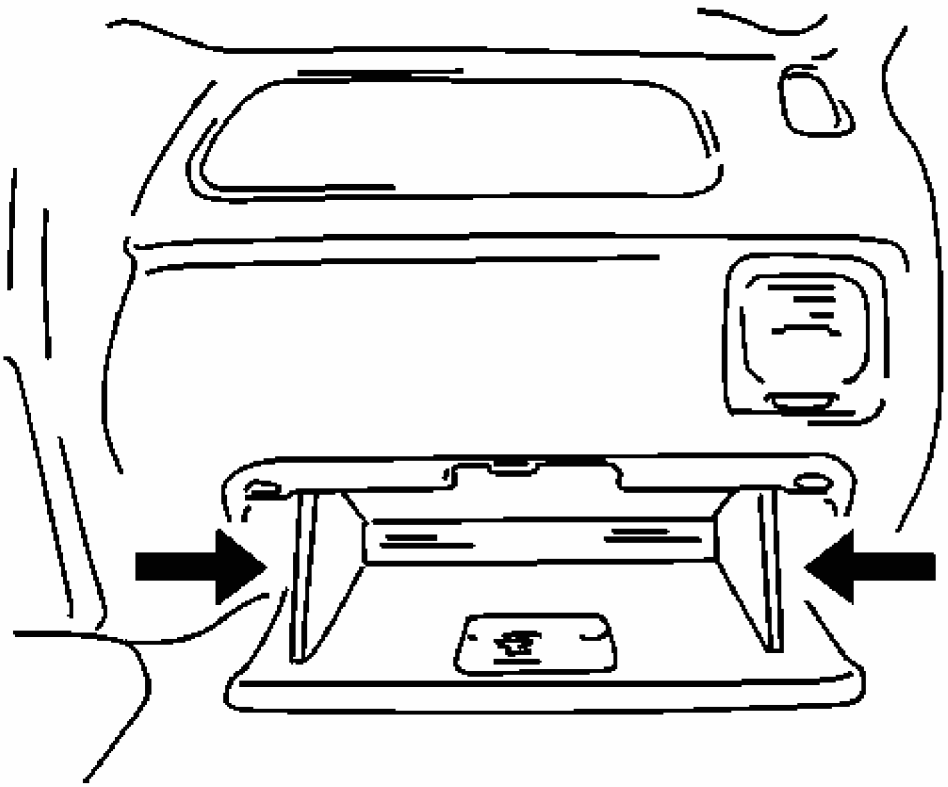


Fig. 13: Opening Instrument Panel Compartment
Courtesy of GENERAL MOTORS CORP.

4. Remove the glove box. Refer to **Storage Compartment Replacement - Instrument Panel (I/P)** in Instrument Panel, Gages, and Console.

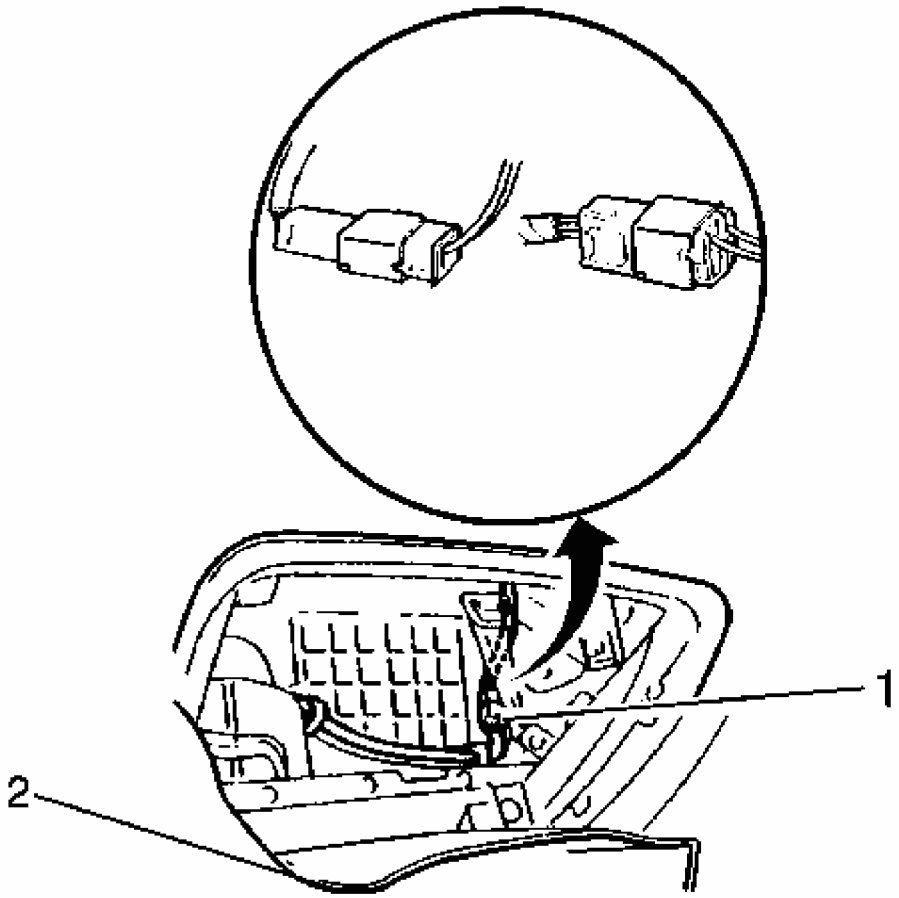


Fig. 14: Connector View
Courtesy of GENERAL MOTORS CORP.

5. Remove the CPA and the yellow 2-way connector from the inflatable restraint instrument panel (I/P) module pigtail (1). Release then unlock the connector.

Enabling Procedure

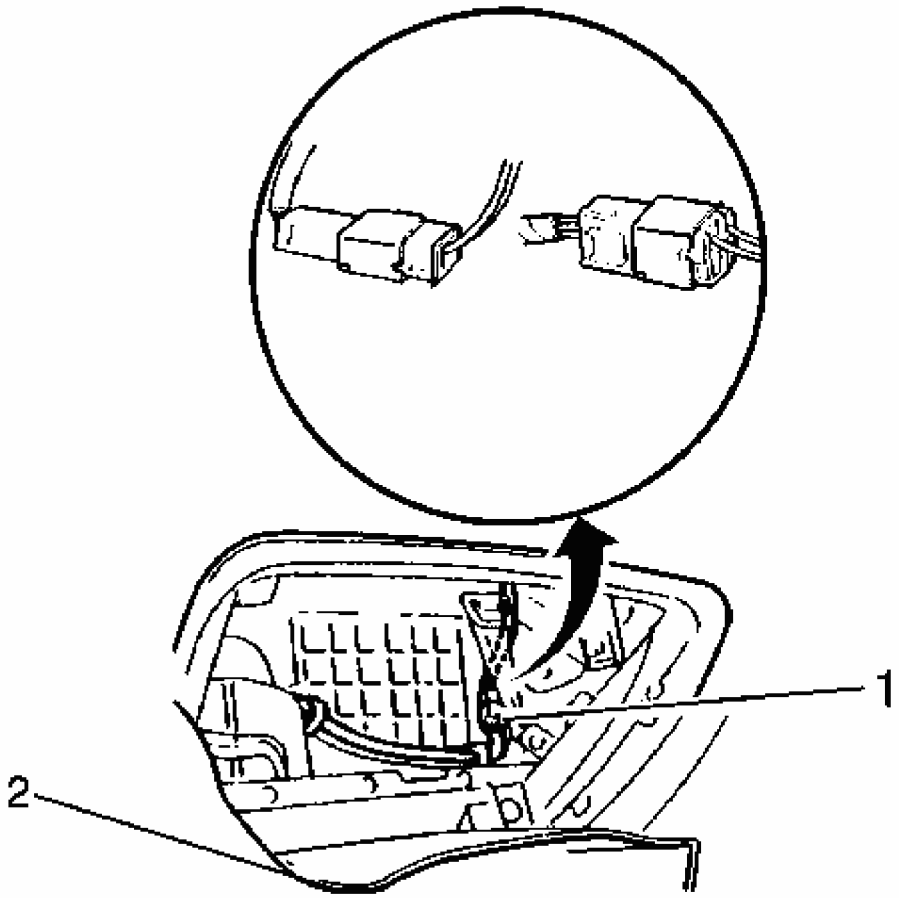


Fig. 15: Connector View
Courtesy of GENERAL MOTORS CORP.

1. Remove the key from the ignition switch.
2. Install the yellow 2-way connector and install the CPA for the inflatable restraint I/P module pigtail (1).
3. Install the glove box. Refer to **Storage Compartment Replacement - Instrument Panel (I/P)** in Instrument Panel, Gages, and Console.
4. Install the F8 fuse.
5. Staying well away from both air bags, turn the ignition switch to the ON position. Verify that the AIR BAG warning indicator flashes seven times and then stays OFF. If the AIR BAG warning indicator does not operate as described, refer to **Diagnostic System Check - SIR**.

SIR DISABLING AND ENABLING ZONE 6

Disabling Procedure

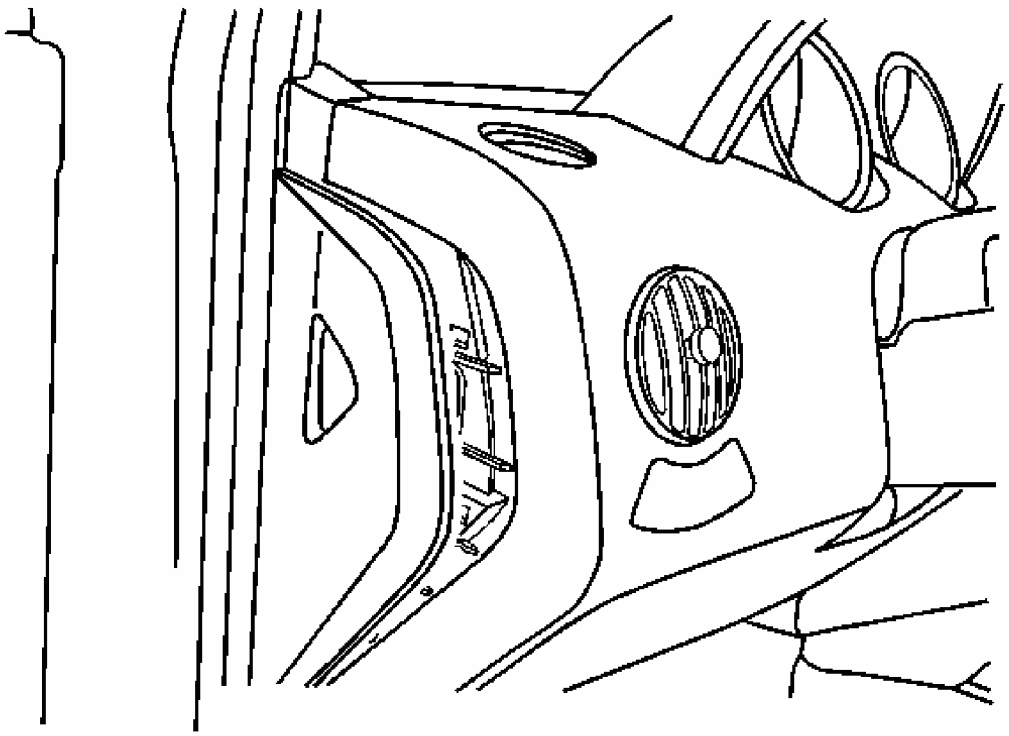


Fig. 16: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

1. Turn the steering wheel so that the vehicle wheels are pointing straight ahead.
2. Turn the ignition switch to the OFF position.
3. Remove the key from the ignition switch.
4. Locate the instrument panel (I/P) fuse box, then remove the fuse box cover.

IMPORTANT: With the F8 fuse removed and the ignition switch in the ON position, the AIR BAG warning indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

5. Remove the F8 fuse.

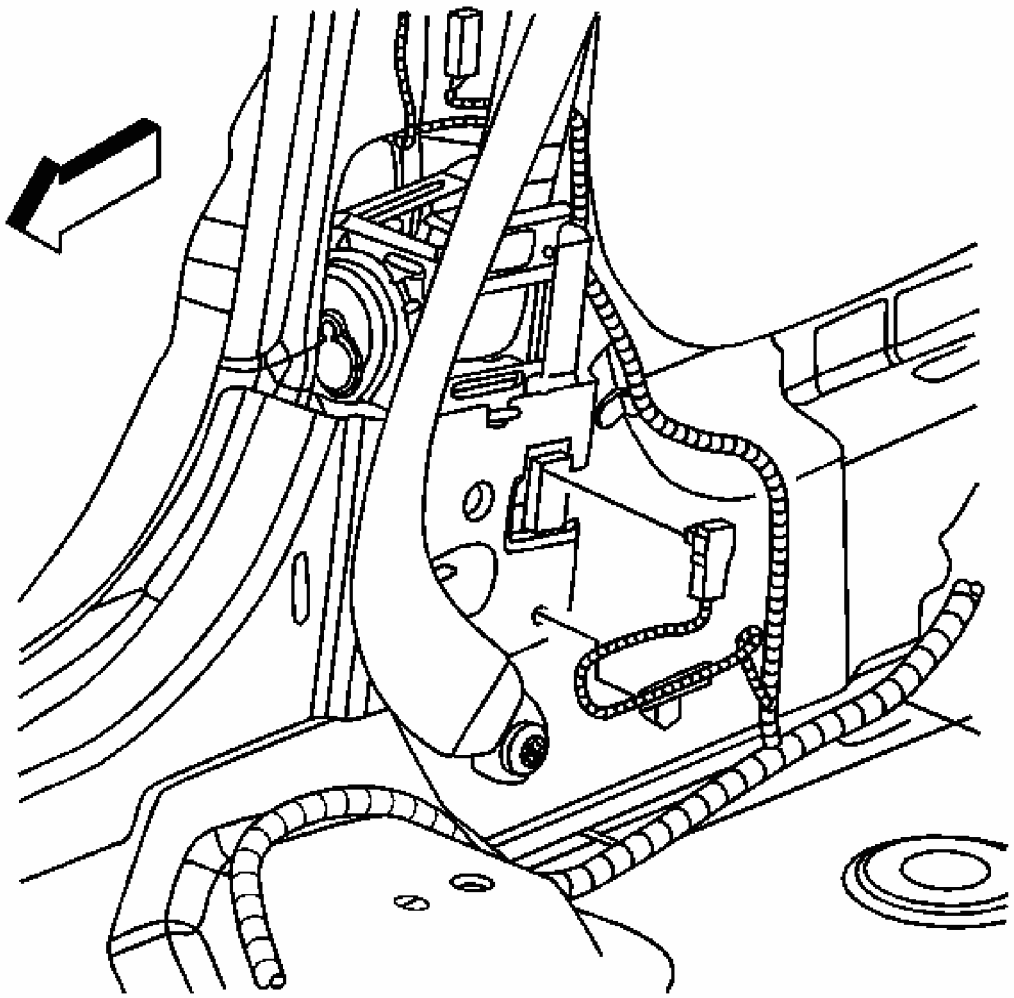


Fig. 17: View Of Seat Belt Pretensioner Connector And Wiring Harness Routing
Courtesy of GENERAL MOTORS CORP.

6. Remove the lower center pillar. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
7. Remove the connector position assurance (CPA) from the pretensioner.
8. Disconnect the seat belt pretensioner - RF connector from the vehicle harness connector.
9. Remove the CPA from the side air bag sensor - RF connector.
10. Disconnect the side air bag sensor - RF connector.

Enabling Procedure

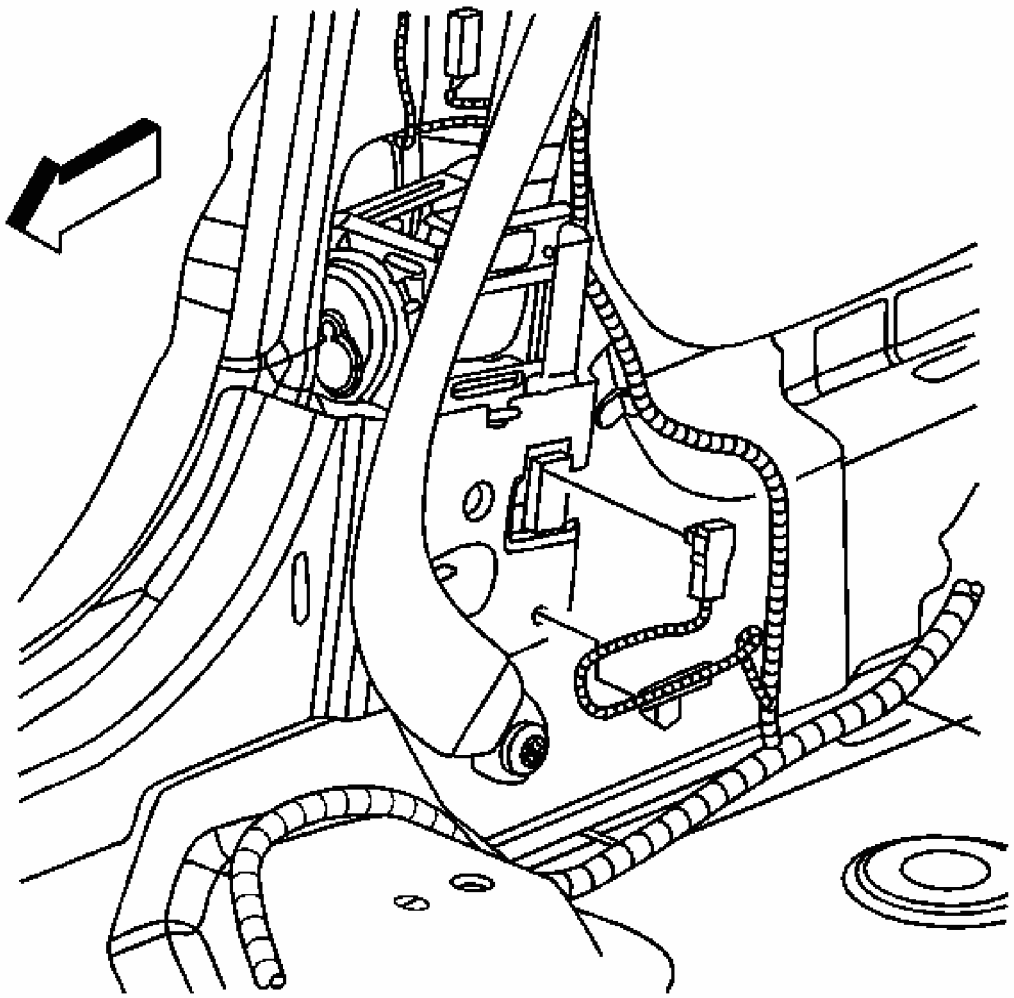


Fig. 18: View Of Seat Belt Pretensioner Connector And Wiring Harness Routing
Courtesy of GENERAL MOTORS CORP.

1. Remove the key from the ignition switch.
2. Connect the side air bag sensor - RF connector and install the CPA.
3. Connect the seat belt pretensioner - RF and install the CPA.
4. Install the lower center pillar. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.

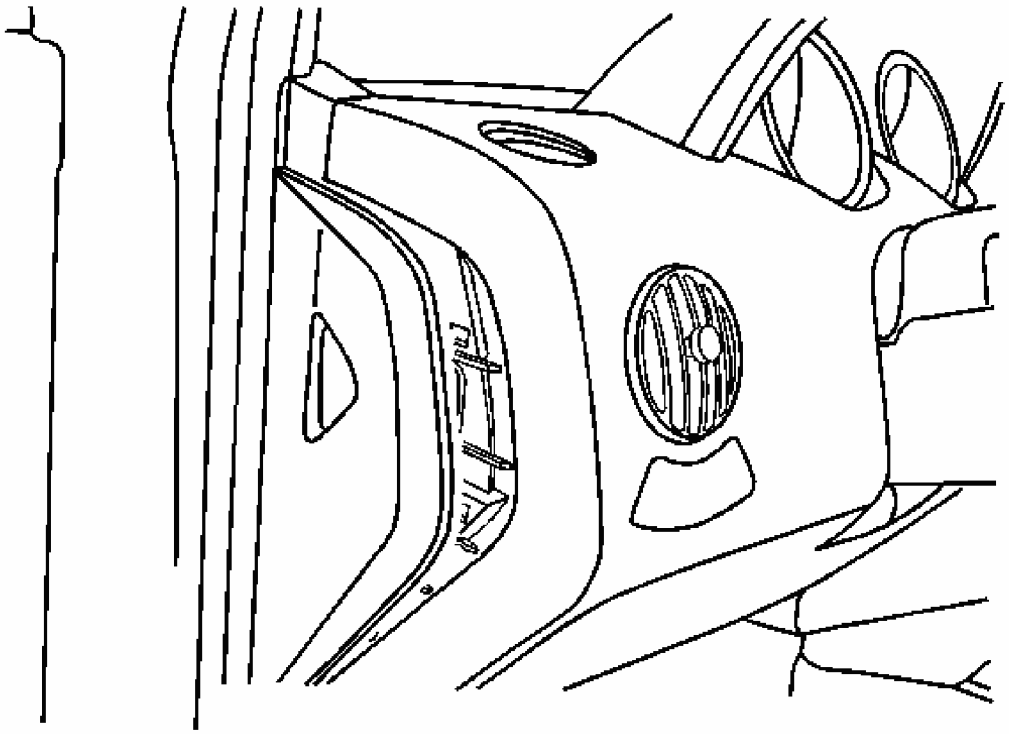


Fig. 19: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

5. Install the F8 fuse.
6. Install the body control module fuse center cover.
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 - SIR if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - SIR**.

SIR DISABLING AND ENABLING ZONE 7

Disabling Procedure

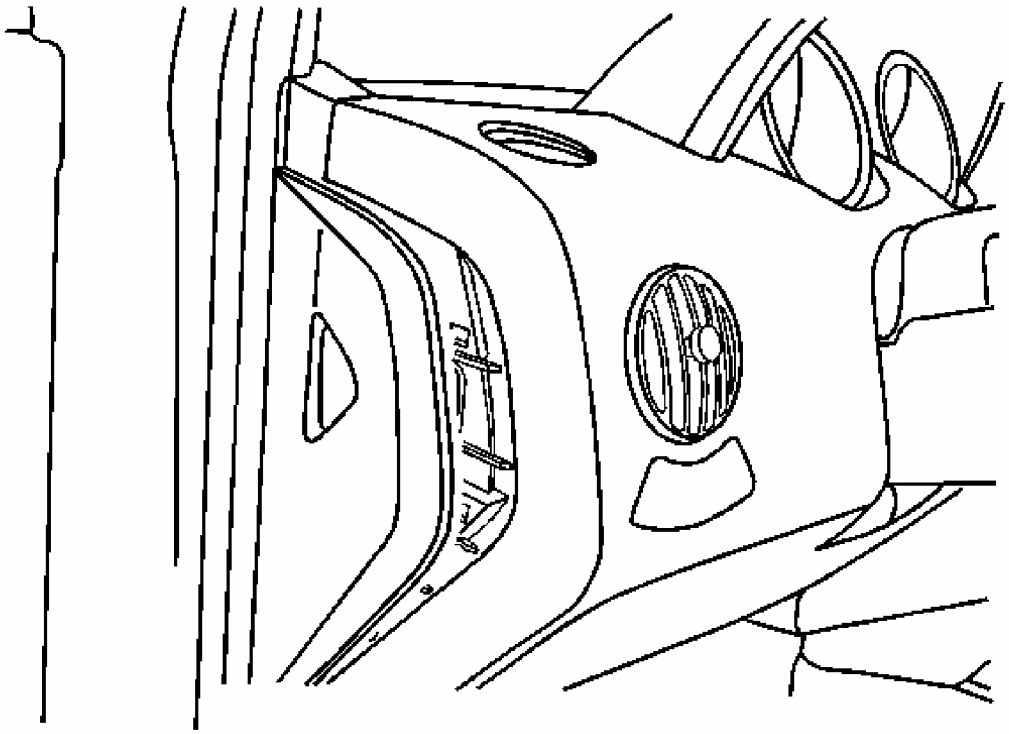


Fig. 20: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Refer to SIR Service Precautions.

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 fuse box cover.

IMPORTANT: With the F8 fuse removed and the ignition switch in the ON position, the AIR BAG indicator illuminates. This is normal operation, and does not indicate an SIR system malfunction.

5. Remove the F8 fuse.

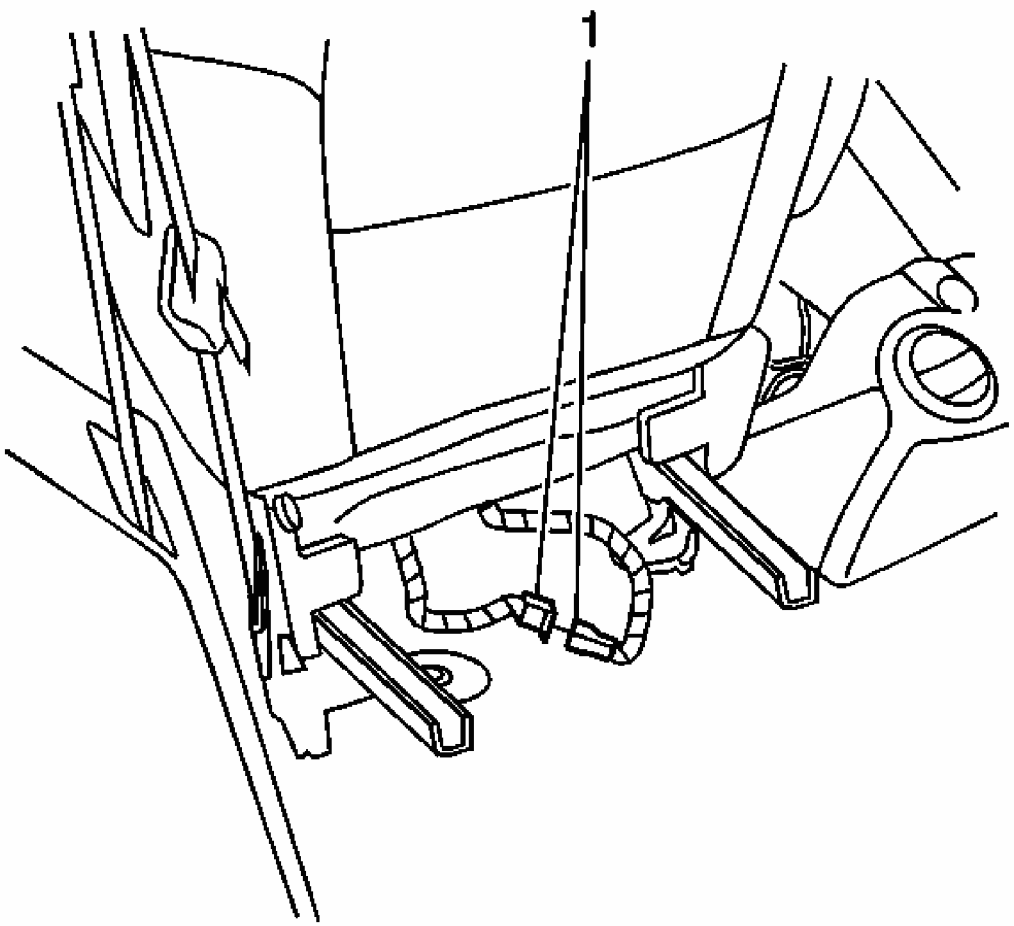


Fig. 21: View Of Deployment Harness At Side Impact Module
Courtesy of GENERAL MOTORS CORP.

6. Remove the connector position assurance (CPA) from the side impact module - LF connector (1) located under the driver seat.
7. Disconnect the side air impact module - LF connector (1).

Enabling Procedure

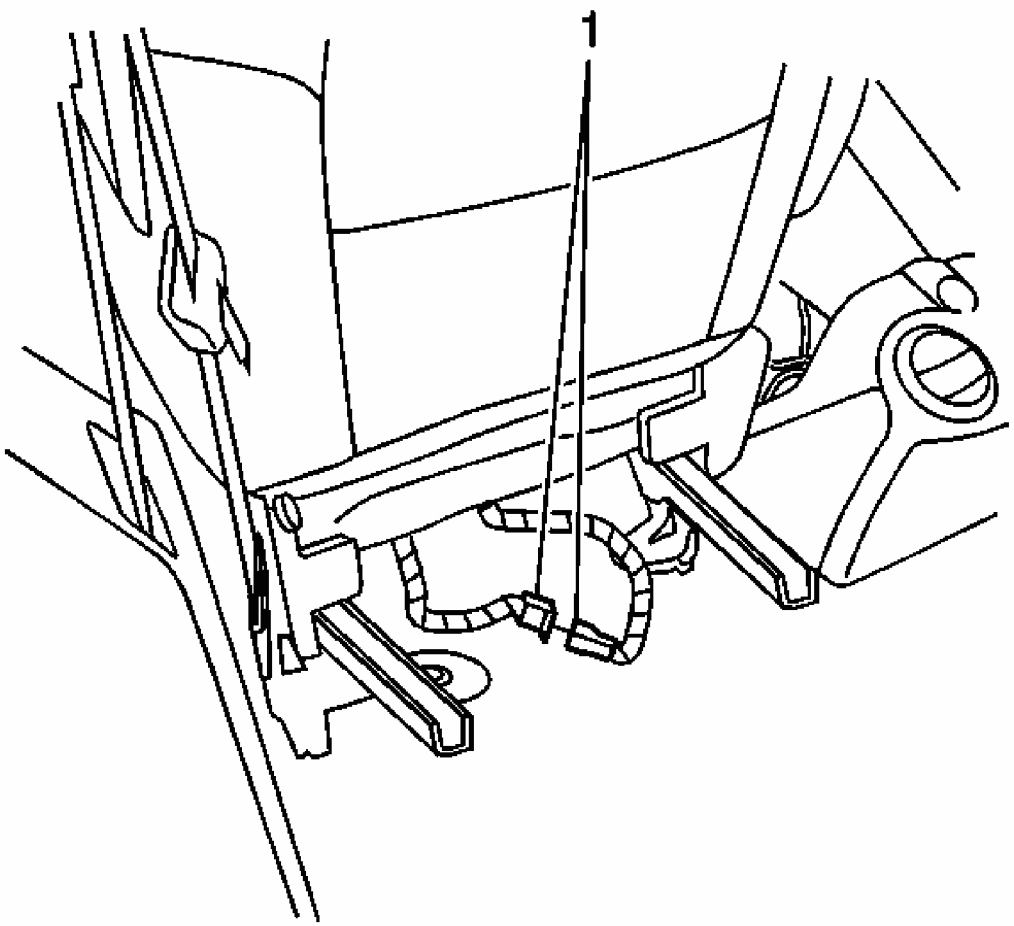


Fig. 22: View Of Deployment Harness At Side Impact Module
Courtesy of GENERAL MOTORS CORP.

1. Connect the inflatable restraint side impact module - LF connector (1) located under the driver seat.
2. Install the CPA to the side impact module - LF connector (1).

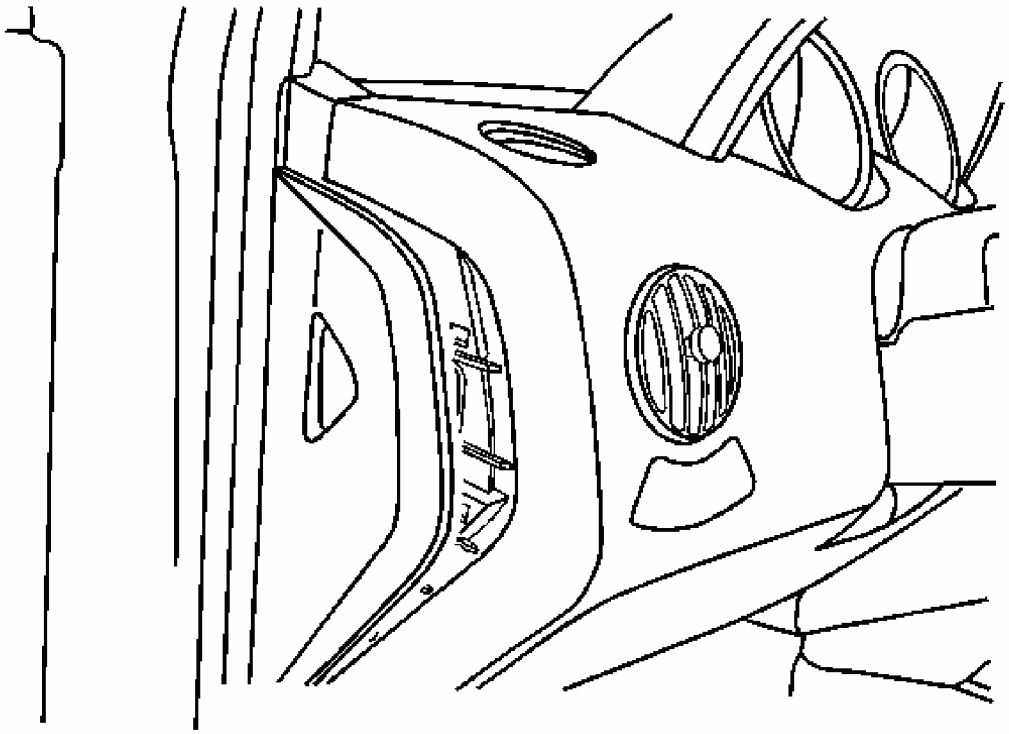


Fig. 23: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

3. Remove the F8 Fuse.
4. Install the fuse box cover.
5. Staying well away from all inflator modules and pretensioners, turn ON the ignition.
   - The AIR BAG indicator will flash 7 times.
   - The AIR BAG indicator will then turn OFF.
6. Perform the Diagnostic System Check - SIR if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - SIR**.

SIR DISABLING AND ENABLING ZONE 8

Disabling Procedure

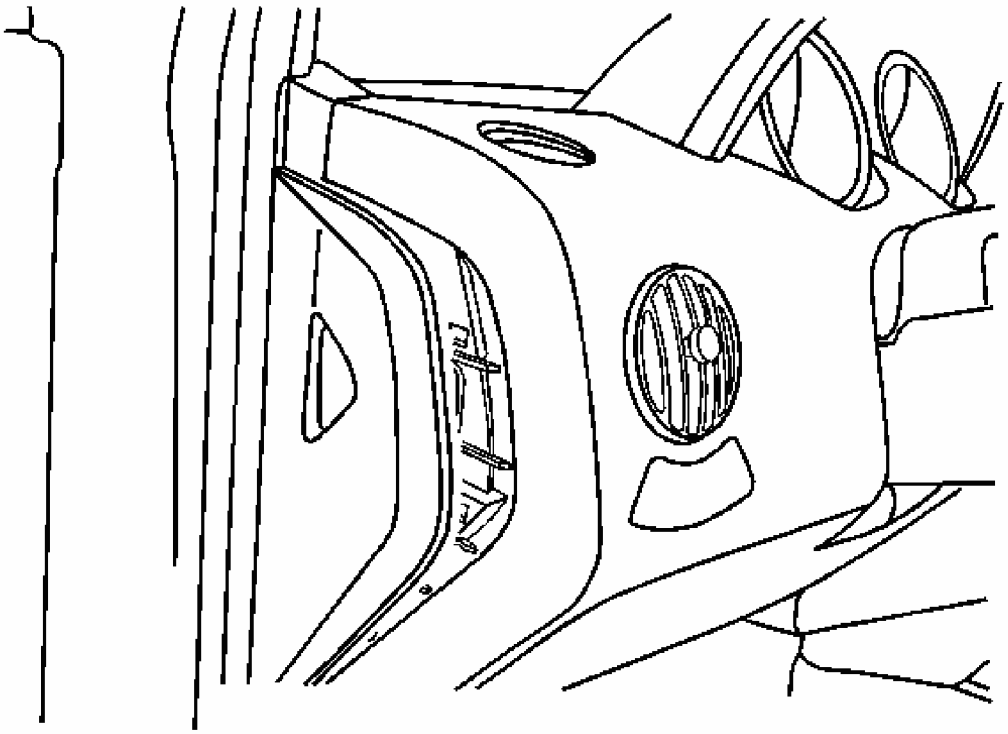


Fig. 24: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Perform this procedure in order to prevent deployment of the air bags from the reserve energy supply power.

1. Turn the steering wheel so that the vehicle wheels are pointing straight ahead.
2. Remove the key from the ignition switch.

IMPORTANT: With the F8 fuse removed and the ignition switch is the ON position, the AIR BAG warning indicator illuminates. This is a normal operation, and does not indicate an SIR system malfunction.

3. Remove the F8 fuse.
4. Remove the lower steering column trim panel. Refer to **Instrument Panel (I/P) Trim Panel Replacement - Lower** in Instrument Panel, Gages, and Console.
5. Remove the knee bolster.

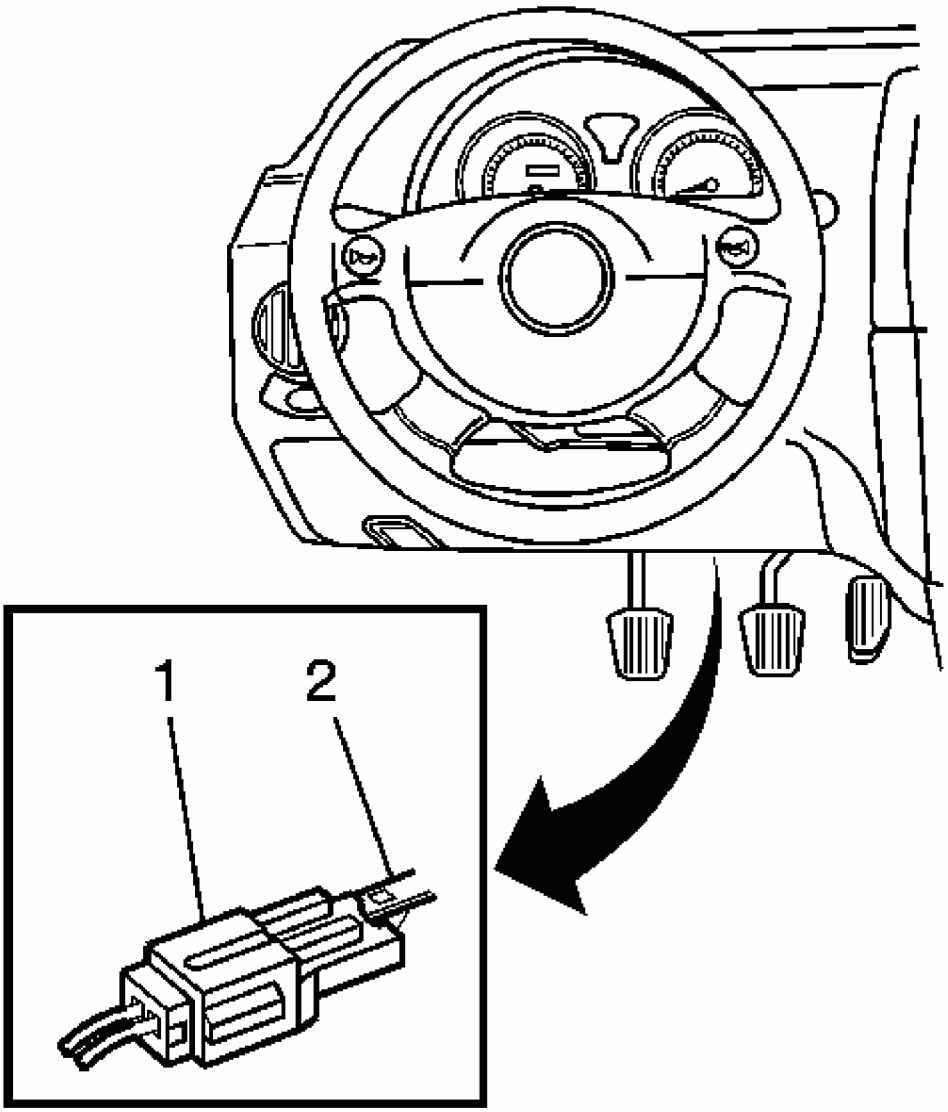


Fig. 25: CPA & Yellow 2-Way Connector For The Inflatable Restraint Steering Wheel Module
Courtesy of GENERAL MOTORS CORP.

6. Remove the following parts:
   - The connector position assurance (CPA) (2)
   - The yellow 2-way connector for the inflatable restraint steering wheel module (1)- Release then unlock the connector.

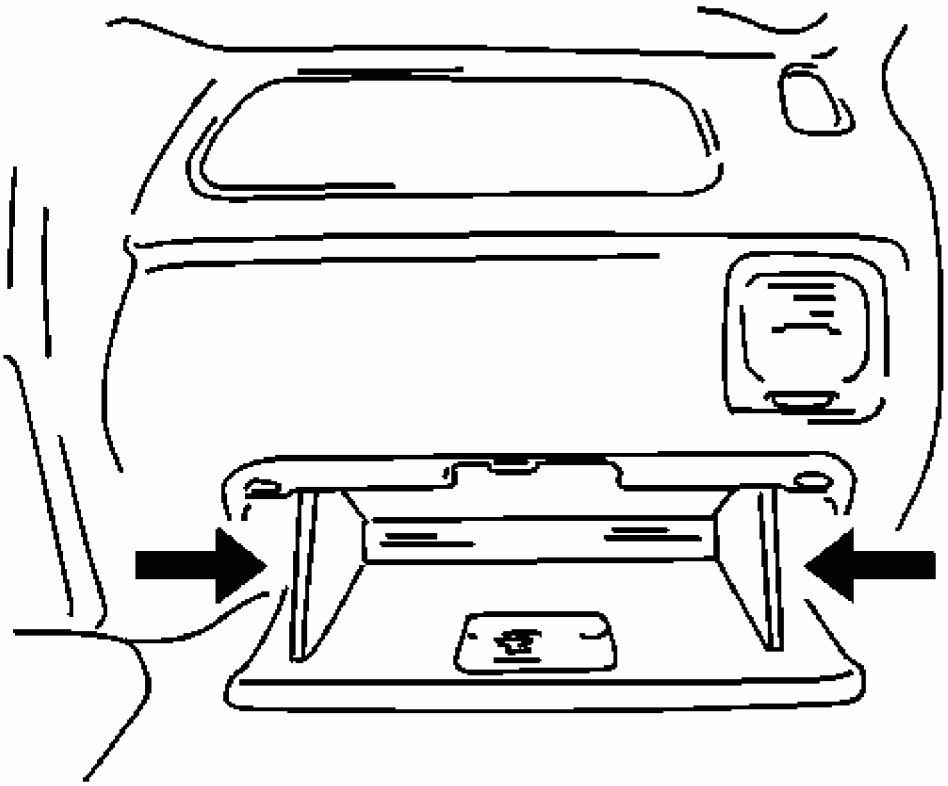


Fig. 26: Opening Instrument Panel Compartment
Courtesy of GENERAL MOTORS CORP.

7. Remove the glove box. Refer to **Storage Compartment Replacement - Instrument Panel (I/P)** in Instrument Panel, Gages, and Console.

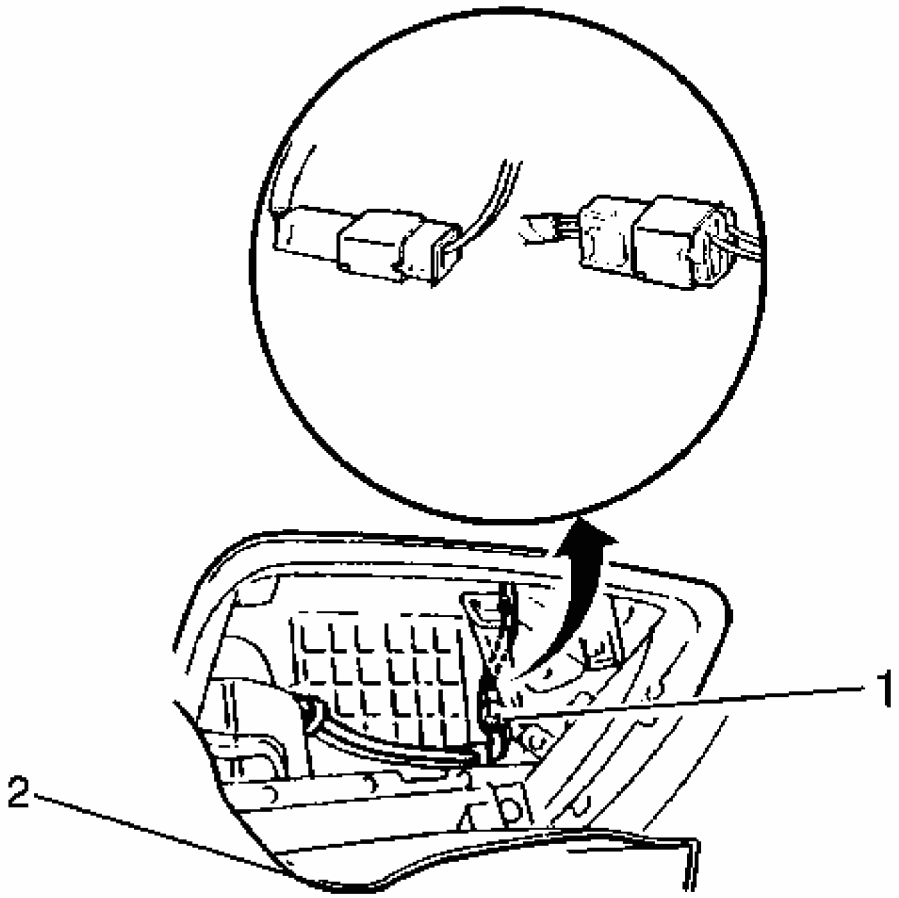


Fig. 27: Connector View
Courtesy of GENERAL MOTORS CORP.

8. Remove the CPA and the yellow 2-way connector from the inflatable restraint I/P module pigtail. Release then unlock the connector.

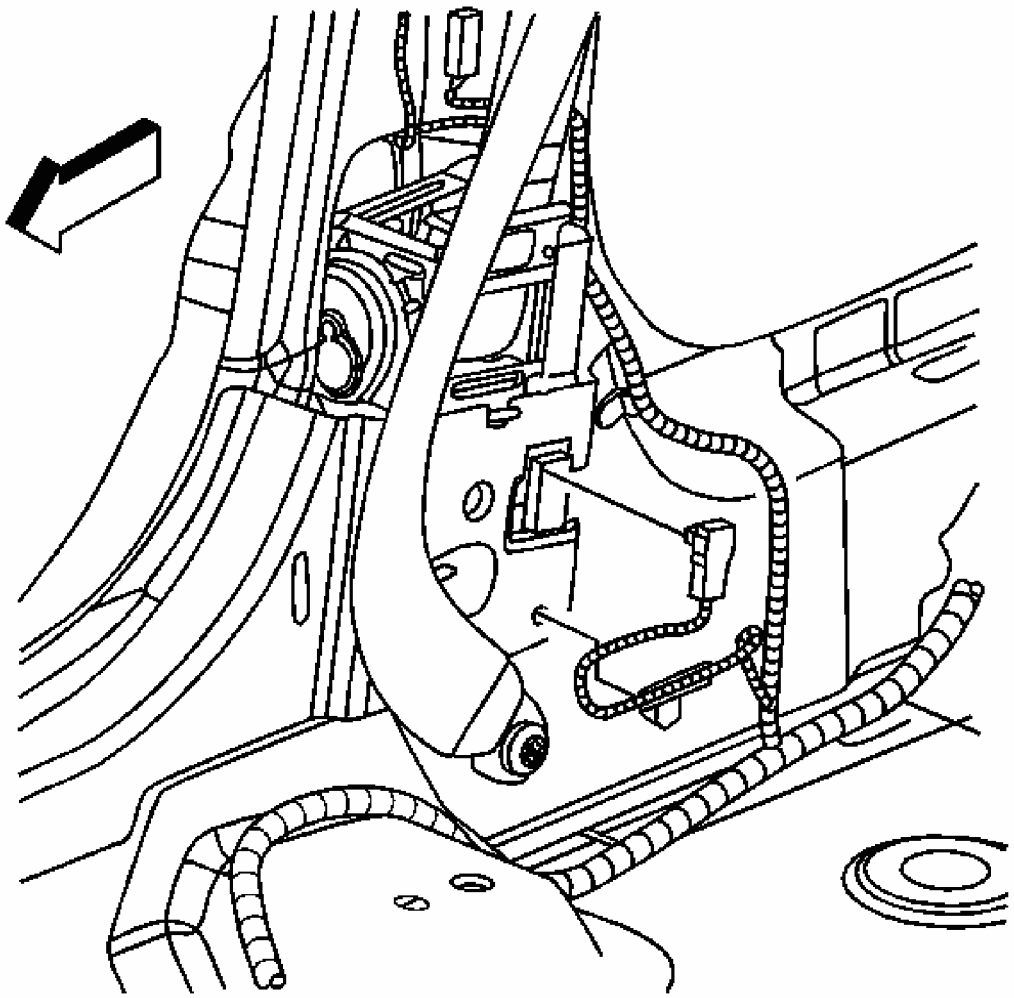


Fig. 28: View Of Seat Belt Pretensioner Connector And Wiring Harness Routing
Courtesy of GENERAL MOTORS CORP.

9. Remove the right lower center pillar trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
10. Remove the CPA from the seat belt pretensioner - RF connector.
11. Disconnect the seat belt pretensioner - RF connector from the vehicle harness connector.
12. Remove the CPA from the side air bag sensor - RF connector.
13. Disconnect the side air bag sensor - RF connector.
14. Remove the left lower center pillar trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.

15. Remove the CPA from the seat belt pretensioner - LF connector.
16. Disconnect the seat belt pretensioner - LF connector from the vehicle harness connector.
17. Remove the CPA from the side air bag sensor - LF connector.
18. Disconnect the side air bag sensor - LF connector.

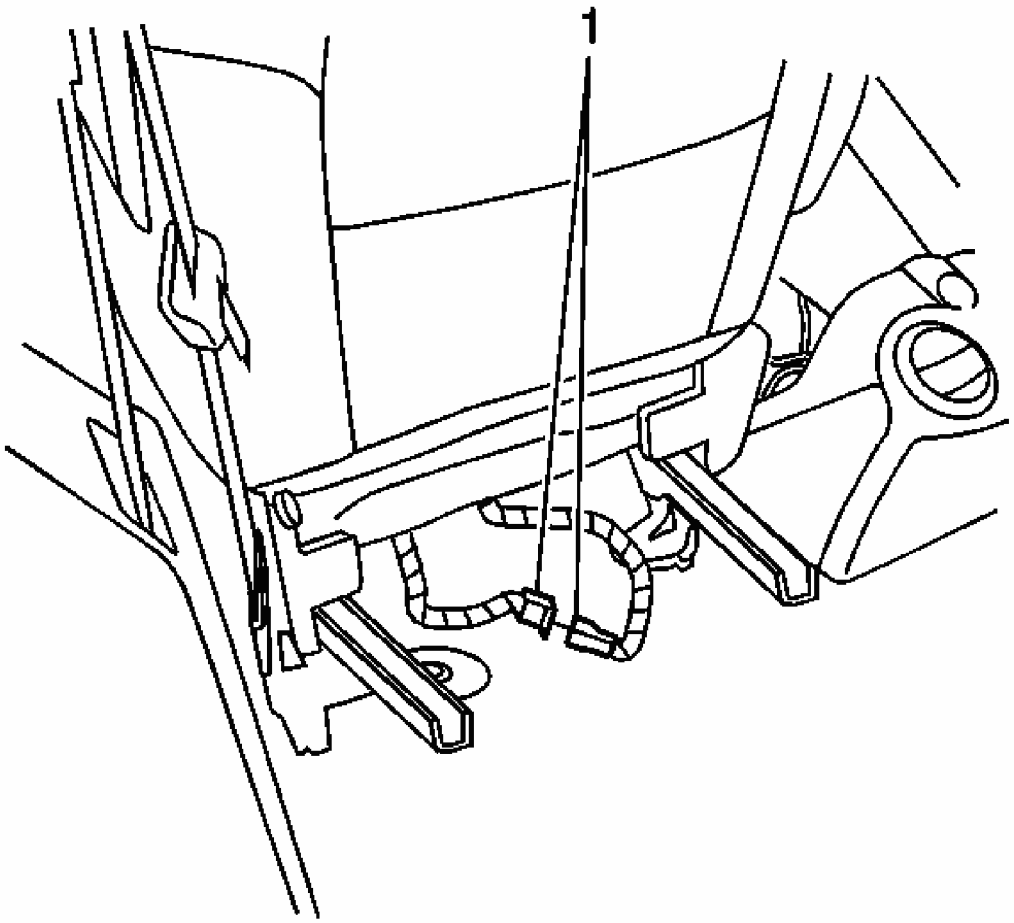


Fig. 29: View Of Deployment Harness At Side Impact Module
Courtesy of GENERAL MOTORS CORP.

19. Remove the CPA from the side impact module - LF connector (1) located under the driver seat.
20. Disconnect the side impact module - LF connector (1).
21. Remove the CPA from the side impact module - RF connector (1) located under the passenger seat.

22. Disconnect the side impact module - RF connector (1)

Enabling Procedure

1. Remove the key from the ignition switch.

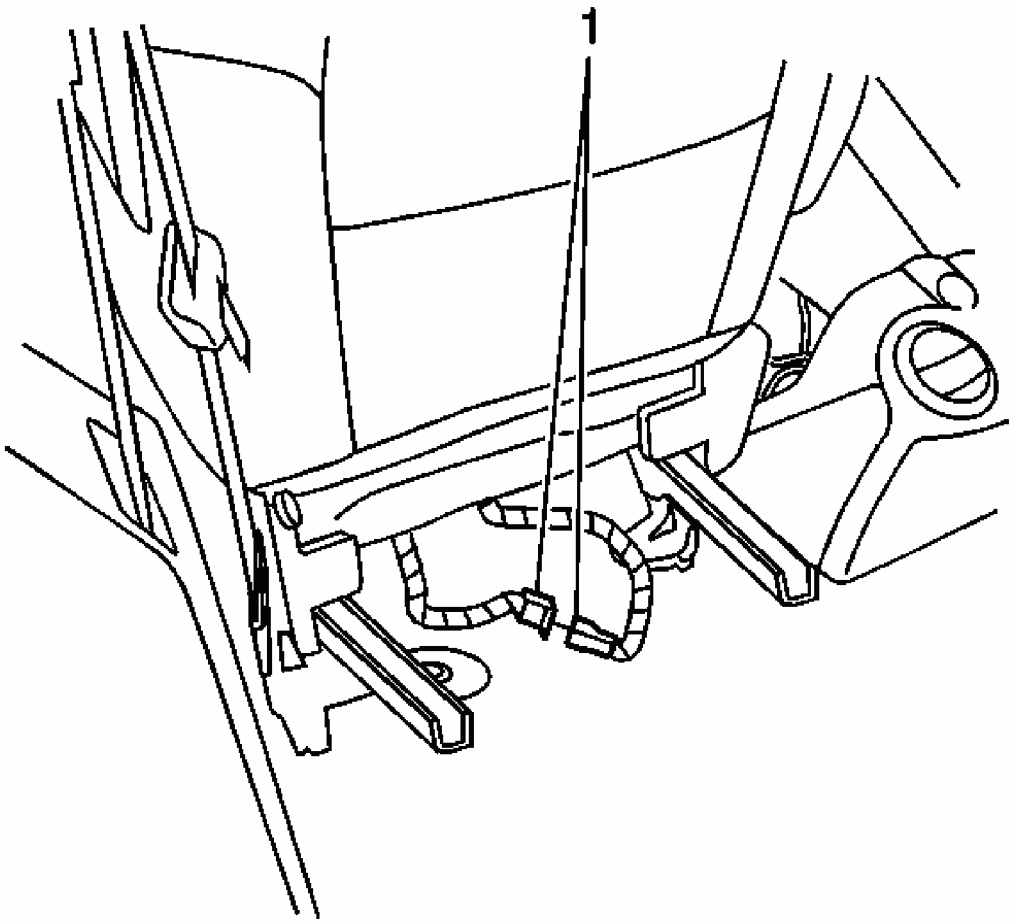


Fig. 30: View Of Deployment Harness At Side Impact Module
Courtesy of GENERAL MOTORS CORP.

2. Connect the side impact module - RF connector (1).
3. Install the CPA to the side impact module - RF connector (1) located under the passenger seat.
4. Connect the side impact module - LF connector (1).
5. Install the CPA to the side impact module - LF connector (1) located under the driver seat.

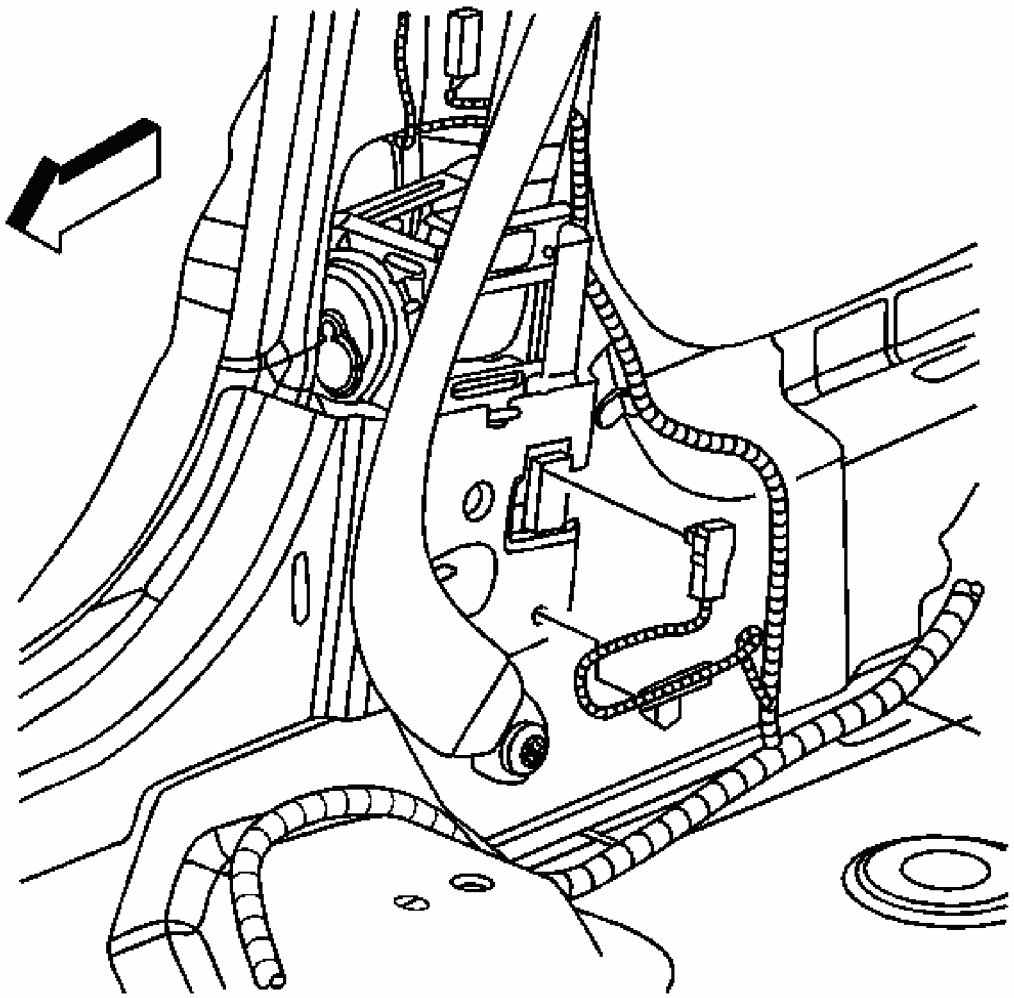


Fig. 31: View Of Seat Belt Pretensioner Connector And Wiring Harness Routing
Courtesy of GENERAL MOTORS CORP.

6. Connect the seat belt pretensioner - LF connector from the vehicle harness connector.
7. Install the CPA to the seat belt pretensioner - LF connector.
8. Connect the side air bag sensor - LF connector and install the CPA.
9. Install the left lower center pillar trim. Refer to **Trim Panel Replacement - Lower Center Pillar** in Interior Trim.
10. Connect the seat belt pretensioner - RF connector from the vehicle harness connector.
11. Install the CPA to the seat belt pretensioner - RF connector.
12. Connect the side air bag sensor - RF connector and install the CPA.
13. Install the right lower center pillar trim. Refer to **Trim Panel Replacement - Lower**

Center Pillar in Interior Trim.

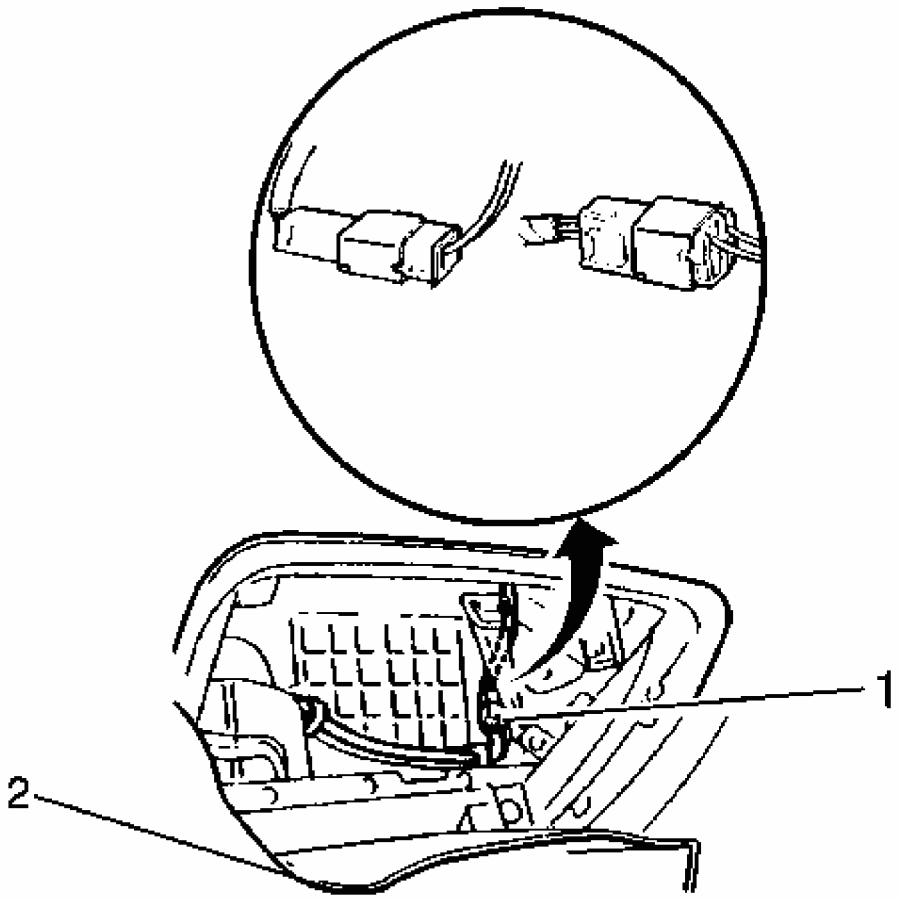


Fig. 32: Connector View
Courtesy of GENERAL MOTORS CORP.

14. Install the yellow 2-way connector and install the CPA to the inflatable restraint I/P module pigtail (1).
15. Install the glove box. Refer to **Storage Compartment Replacement - Instrument Panel (I/P)** in Instrument Panel, Gages, and Console.

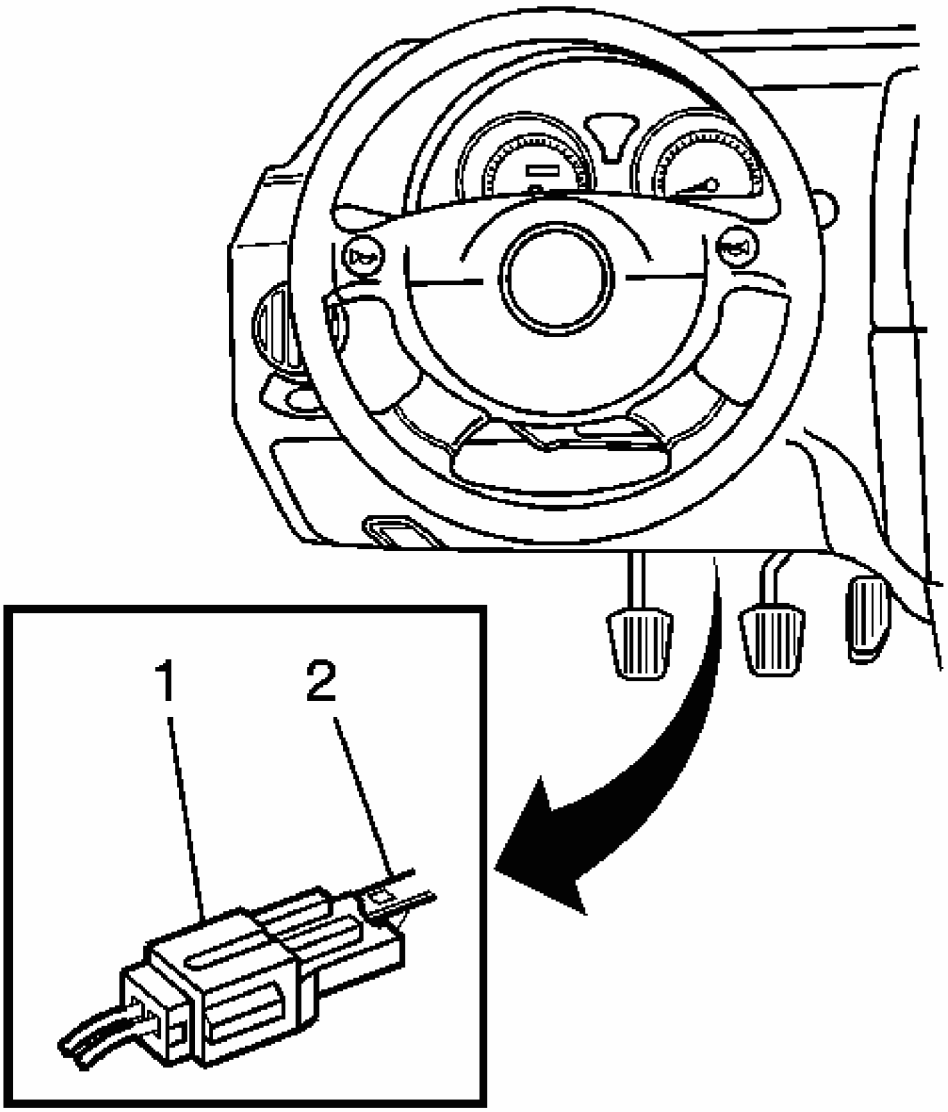


Fig. 33: CPA & Yellow 2-Way Connector For The Inflatable Restraint Steering Wheel Module
Courtesy of GENERAL MOTORS CORP.

16. Install the yellow 2-way connector (1) and install the CPA (2) for the inflatable restraint steering wheel module and the steering wheel side cap.
17. Install the knee bolster.
18. Install the lower steering column trim panel. Refer to **Instrument Panel (I/P) Trim Panel Replacement - Lower** in Instrument Panel, Gages, and Console.

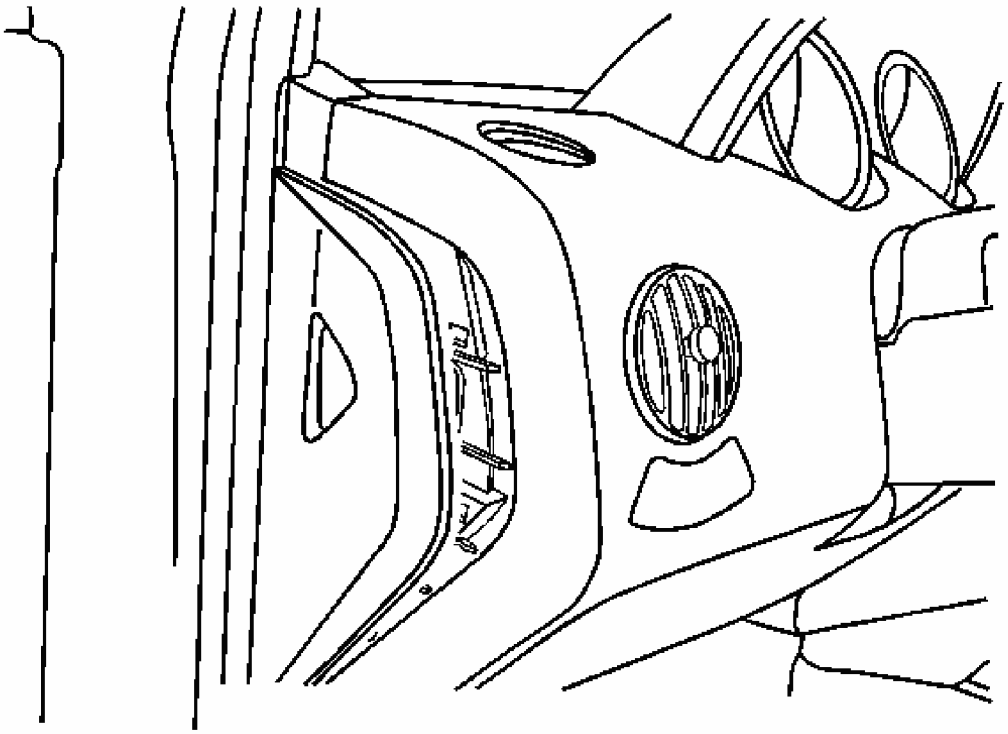


Fig. 34: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

19. Install the F8 fuse.
20. Staying well away from both air bags, turn the ignition switch to the ON position. Verify that the AIR BAG warning indicator flashes seven times and then stays OFF. If the AIR BAG warning indicator does not operate as described, refer to **Diagnostic System Check - SIR**.

SIR DISABLING AND ENABLING ZONE 9

Disabling Procedure

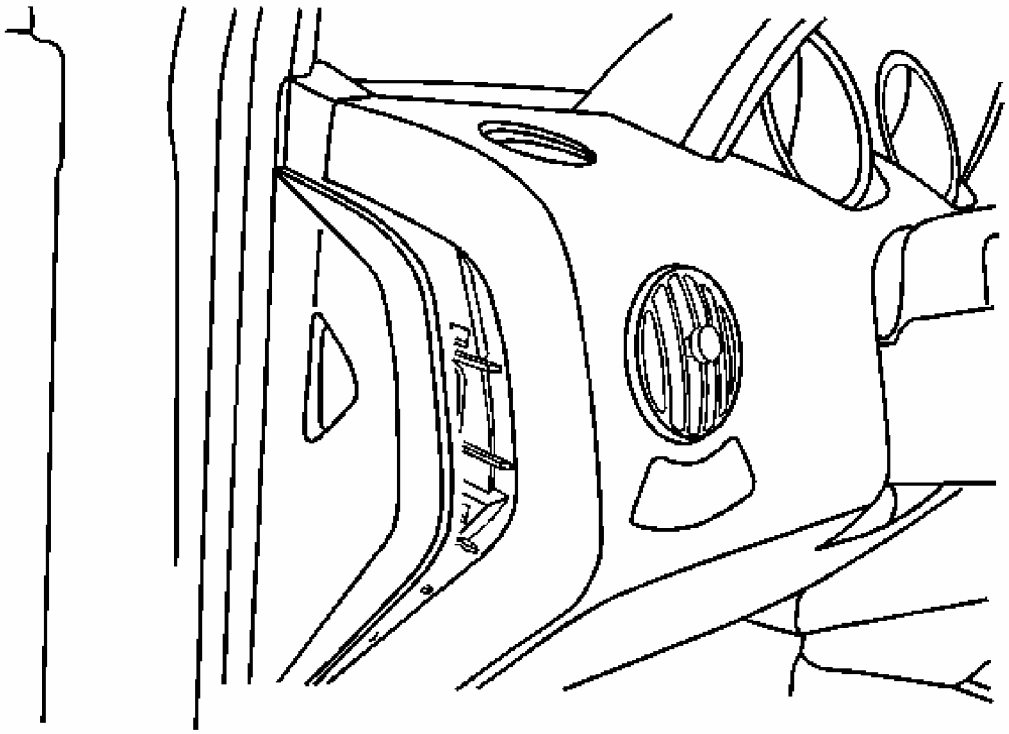


Fig. 35: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Refer to SIR Service Precautions.

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 fuse box cover.

IMPORTANT: With the F8 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 F8 fuse.

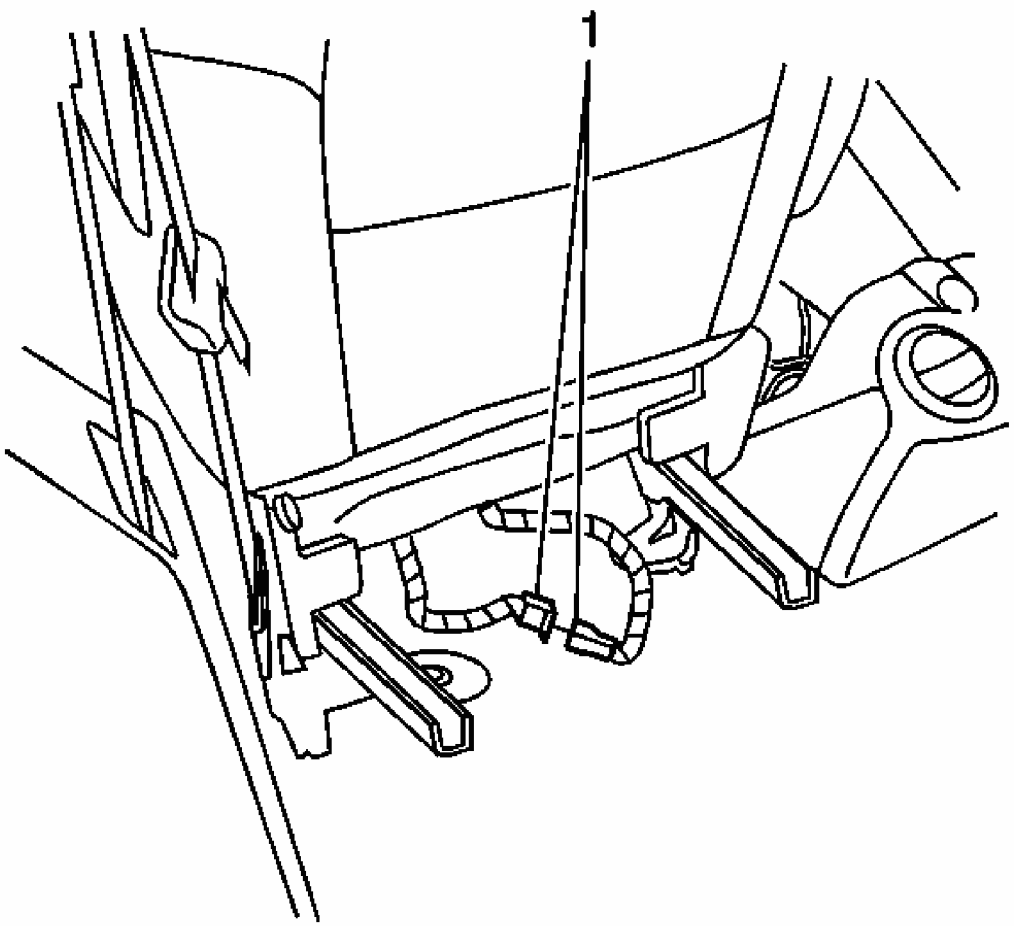


Fig. 36: View Of Deployment Harness At Side Impact Module
Courtesy of GENERAL MOTORS CORP.

6. Remove the connector position assurance (CPA) from the side impact module - RF connector (1) located under the passenger seat.
7. Disconnect the side air impact module - RF connector (1).

Enabling Procedure

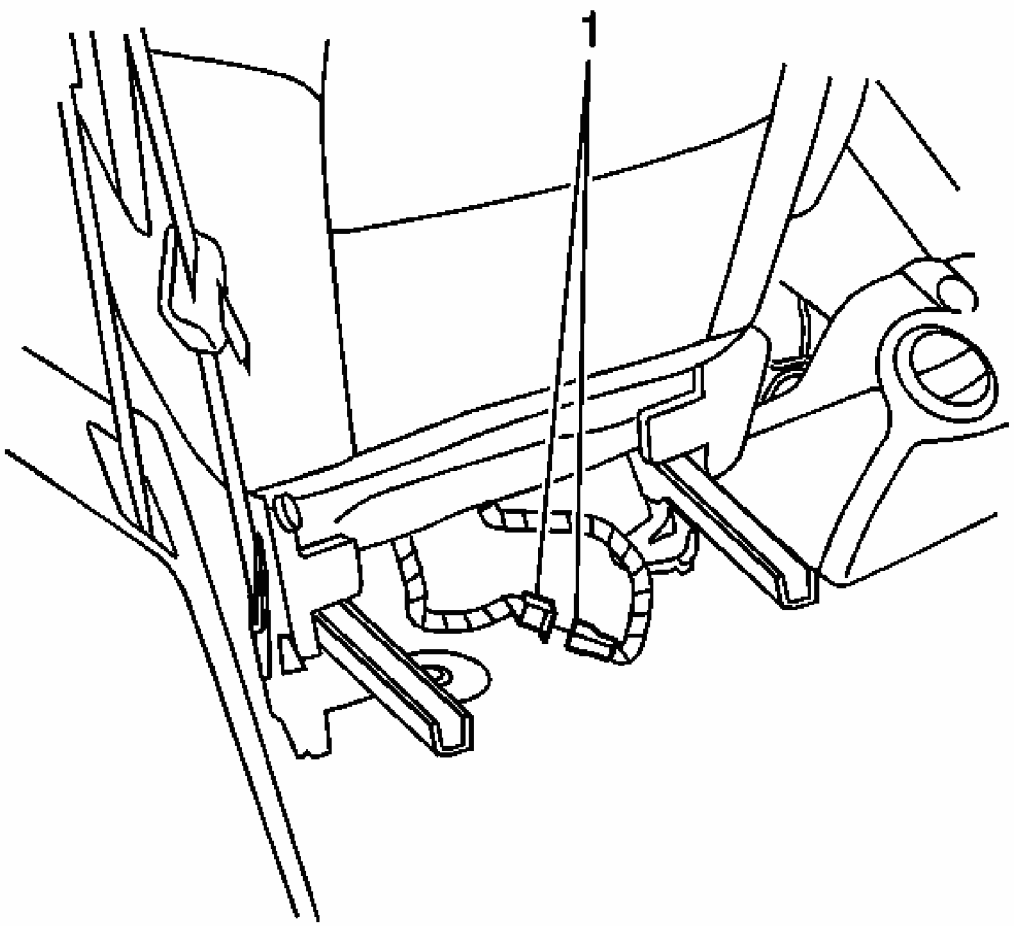


Fig. 37: View Of Deployment Harness At Side Impact Module
Courtesy of GENERAL MOTORS CORP.

1. Connect the inflatable restraint side impact module - RF connector (1) located under the passenger seat.
2. Install the CPA to the side impact module - RF connector (1).

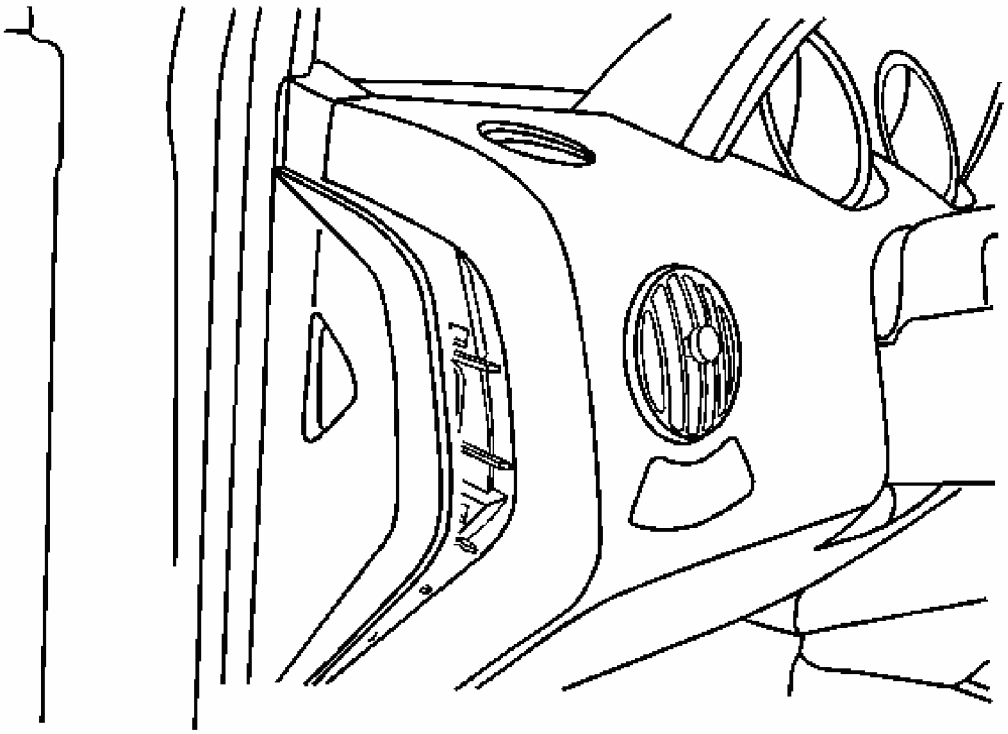


Fig. 38: Locating Left Side Fuse Block Access Cover
Courtesy of GENERAL MOTORS CORP.

3. Install the F8 Fuse.
4. Install the fuse box cover.
5. Staying well away from all inflator modules and pretensioners, turn ON the ignition.
   - The AIR BAG indicator will flash 7 times.
   - The AIR BAG indicator will then turn OFF.
6. Perform the Diagnostic System Check-SIR if the AIR BAG warning indicator does not operate as described. Refer to **Diagnostic System Check - SIR**.

ENABLING THE SIR SYSTEM

CAUTION: Refer to SRS Caution in Cautions and Notices.

1. Insert the air bag fuse F8 in the I/P fuse block.

CAUTION: When enabling the SIR system, be extremely careful

when installing the fuse and/or turning the ignition switch on. Stand clear of the inflator module and verify no loose objects are directly in front of the inflator modules. Possible personal injury or vehicle damage could result if an accidental deployment were to occur.

2. Turn the ignition switch to ON and verify that the air bag indicator flashes 7 times and turns OFF. If it does not operate as described, refer to **Diagnostic System Check - SIR**.

INFLATABLE RESTRAINT SIDE IMPACT SENSOR REPLACEMENT

Removal Procedure

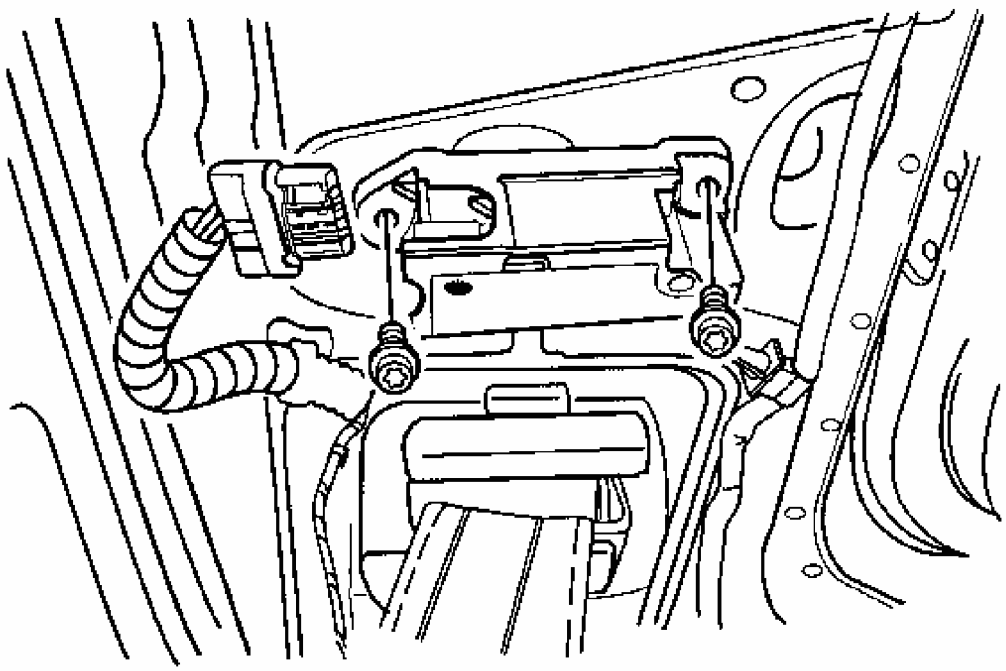


Fig. 39: Side Air Bag Sensor
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to SDM Voltage After Ignition Is Turned OFF Caution in Cautions and Notices.

CAUTION: Refer to Battery Disconnect Caution in Cautions and

Notices.

1. Disconnect the negative battery cable.
2. Remove the trim from the center pillar.
3. Remove the side air bag sensor mounting bolts.
4. Remove the side air bag sensor.

Installation Procedure

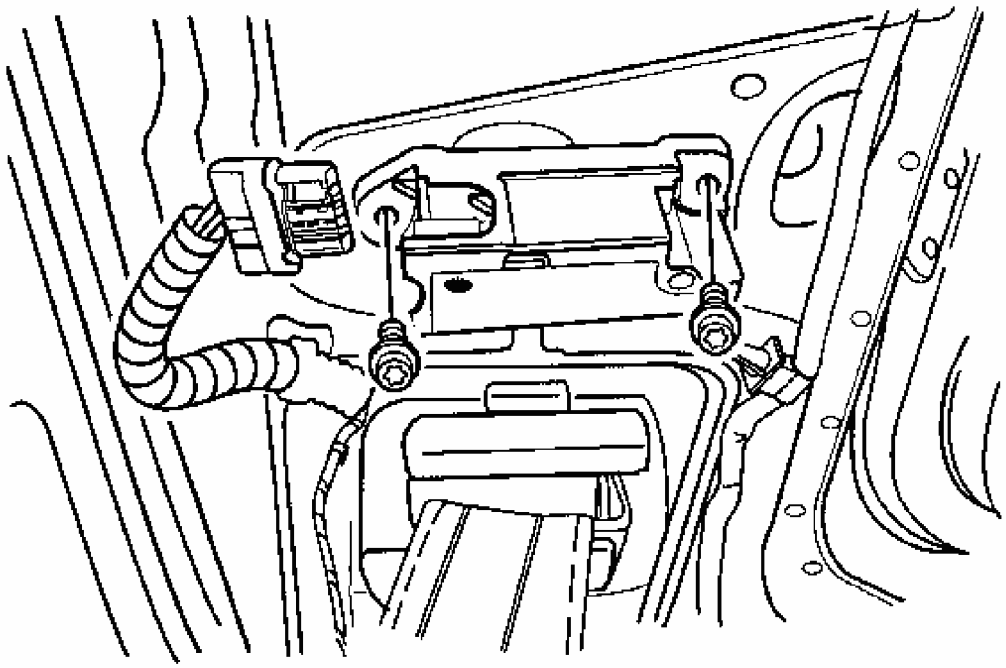


Fig. 40: Side Air Bag Sensor
Courtesy of GENERAL MOTORS CORP.

1. Install the side air bag sensor.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the side air bag sensor mounting bolts.

Tighten: Tighten the side air bag sensor mounting bolts to 10 N.m (89 lb in).

3. Install the trim to the center pillar.
4. Connect the negative battery cable.

INFLATABLE RESTRAINT SENSING AND DIAGNOSTIC MODULE REPLACEMENT

Removal Procedure

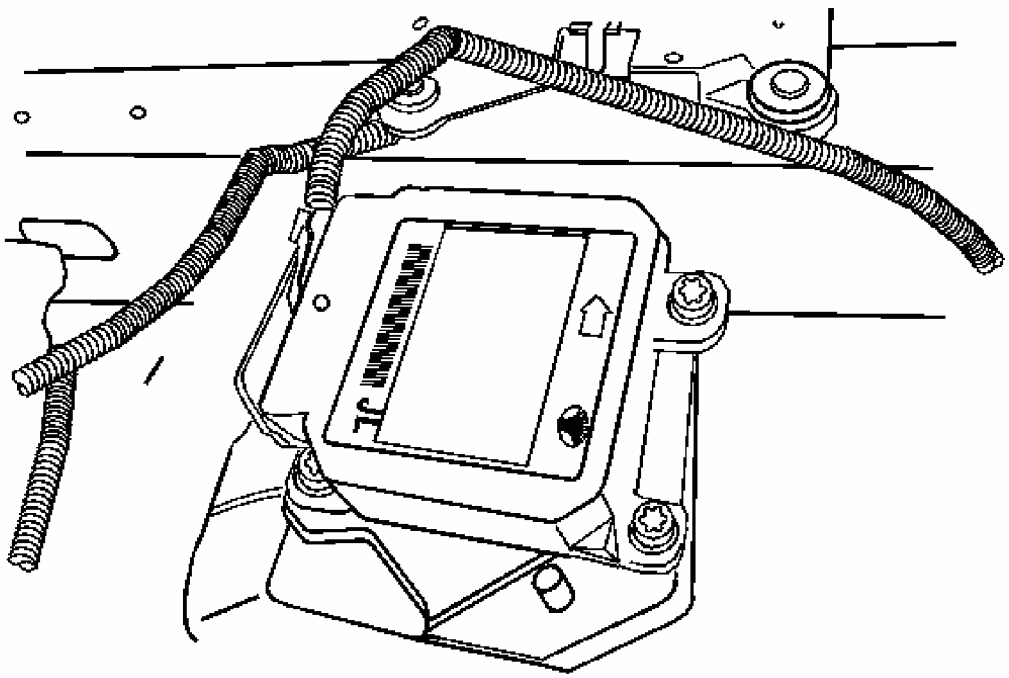


Fig. 41: SDM Electrical Connector
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

CAUTION: Refer to SRS Caution in Cautions and Notices.

CAUTION: If the vehicle interior is exposed to moisture and becomes soaked up to the level of the sensing and diagnostic module (SDM), the SDM and SDM harness connector must be replaced. The SDM could be activated when powered, which could cause airbag

deployment and result in personal injury.

1. Disable the supplemental inflatable restraints (SIR). Refer to **Disabling the SIR System**.
2. Remove the floor console. Refer to **Console Replacement - Front Floor** in Instrument Panel, Gages, and Console.
3. Remove the connector position assurance lock, which is tethered to the SDM connector.
4. Disconnect the SDM electrical connector.
5. Remove the SDM mounting bolts.
6. Remove the SDM.

Installation Procedure

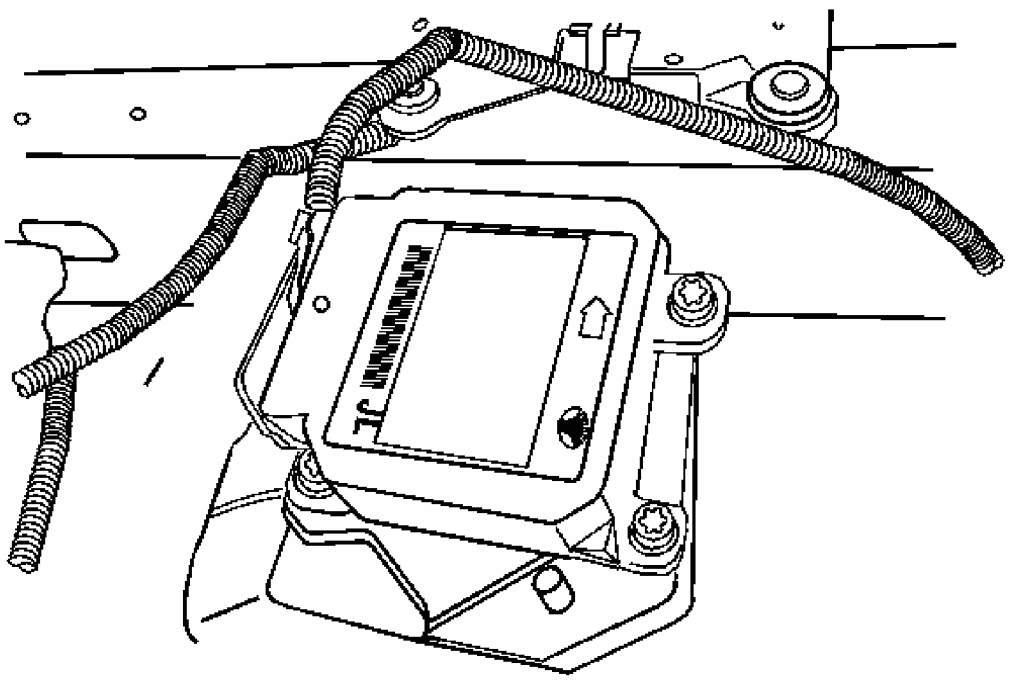


Fig. 42: SDM Electrical Connector
Courtesy of GENERAL MOTORS CORP.

1. Install the SDM.

CAUTION: Be careful when you handle a sensor. Do not strike or

jolt a sensor. Before applying power to a sensor:

- **Remove any dirt, grease, etc. from the mounting surface.**
- **Position the sensor horizontally on the mounting surface.**
- **Point the arrow on the sensor toward the front of the vehicle.**
- **Tighten all of the sensor fasteners and sensor bracket fasteners to the specified torque value.**

Failure to follow the correct procedure could cause air bag deployment, personal injury, or unnecessary SIR system repairs.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the SDM mounting bolts.

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

3. Connect the SDM electrical connector.
4. Install the connector position assurance lock, which is tethered to the SDM connector.
5. Install the floor console. Refer to **Console Replacement - Front Floor** in Instrument Panel, Gages, and Console.
6. Enable the SIR. Refer to **Enabling the SIR System**.

INFLATABLE RESTRAINT STEERING WHEEL MODULE REPLACEMENT

Removal Procedure

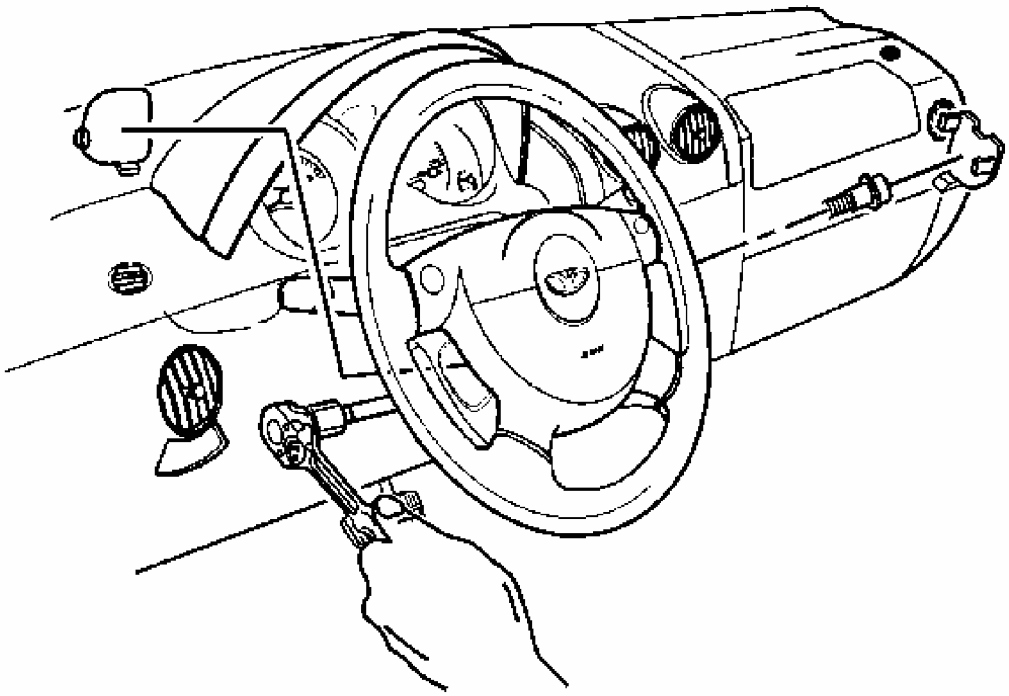


Fig. 43: Driver Air Bag Module, Mounting Bolts & Connector
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Battery Disconnect Caution in Cautions and Notices.

1. Disconnect the negative battery cable.

CAUTION: The sensing and the diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for up to 1 minute after the ignition has been turned OFF and the fuse has been removed. If the airbags and pretensioners are not disconnected, do not begin service until one minute has been passed after disconnecting power to the SDM. Failure to do so may cause personal injury.

2. Remove 2 driver air bag module mounting bolts and discard them.
3. Remove the connector from the driver air bag module.

CAUTION: When you are carrying an undeployed inflator module:

- **Do not carry the inflator module by the wires or connector on the inflator module**
- **Make sure the bag opening points away from you**

When you are storing an undeployed inflator module, make sure the bag opening points away from the surface on which the inflator module rests. When you are storing a steering column, do not rest the column with the bag opening facing down and the column vertical. Provide free space for the air bag to expand in case of an accidental deployment. Otherwise, personal injury may result.

4. Remove the driver air bag module.

Installation Procedure

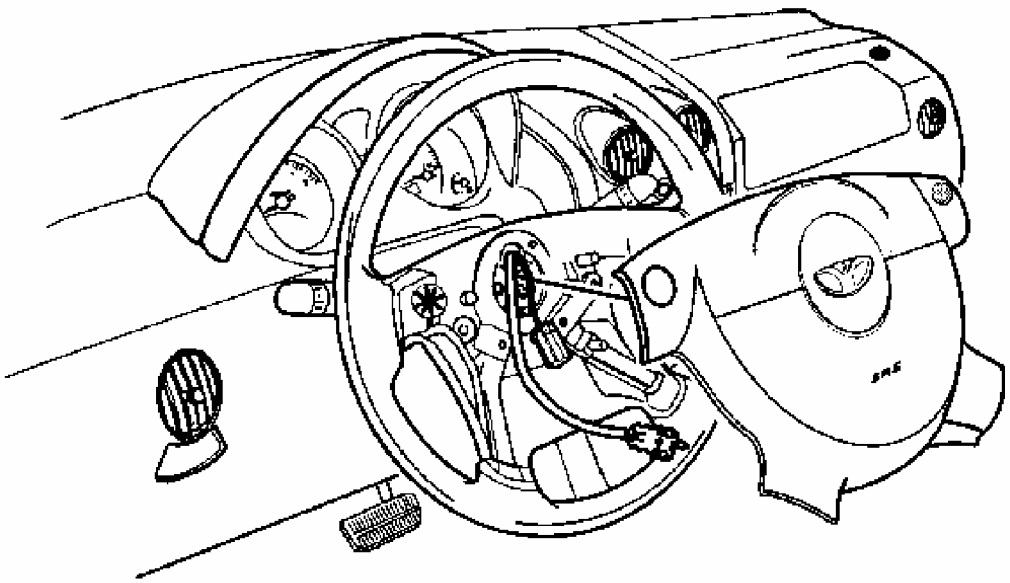


Fig. 44: Driver Air Bag Module
Courtesy of GENERAL MOTORS CORP.

1. Install the driver air bag module.

2. Install the connector to the driver air bag module.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the new driver air bag mounting bolts.

   Tighten: Tighten the driver air bag module mounting bolts to 8 N.m (71 lb in).

4. Connect the negative battery cable.

INFLATABLE RESTRAINT STEERING WHEEL MODULE COIL REPLACEMENT

Removal Procedure

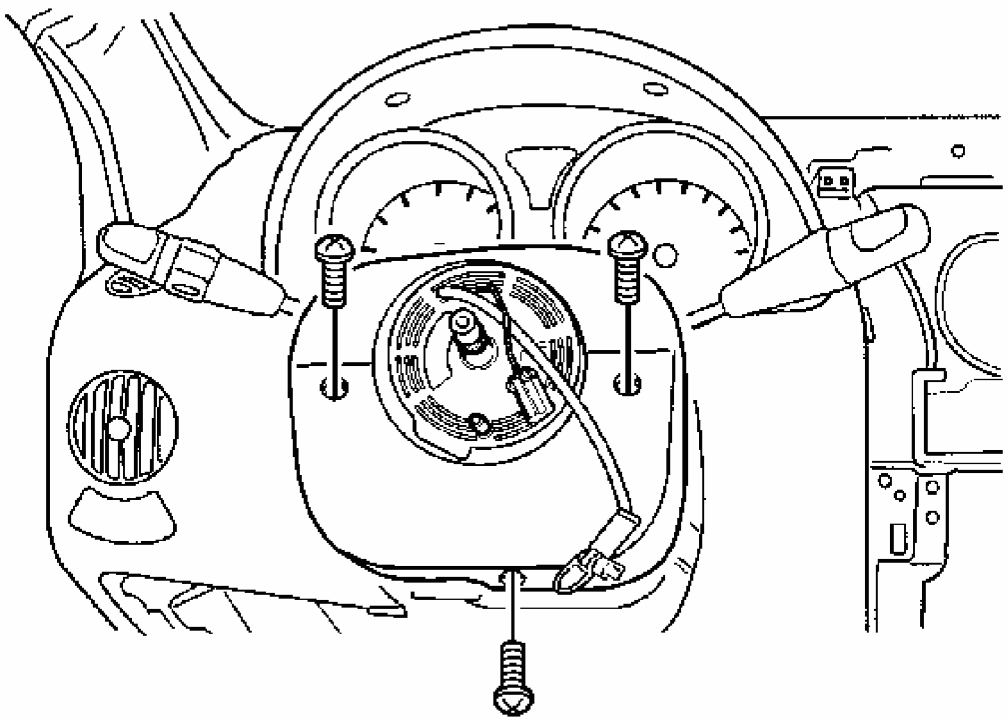


Fig. 45: Upper/Lower Steering Column Covers & Screws
Courtesy of GENERAL MOTORS CORP.

CAUTION: The sensing and the diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for up to 1 minute after the ignition has

been turned OFF and the fuse has been removed. If the airbags and pretensioners are not disconnected, do not begin service until one minute has been passed after disconnecting power to the SDM. Failure to do so may cause personal injury.

CAUTION: Refer to Battery Disconnect Caution in Cautions and Notices.

1. Disconnect the negative battery cable.
2. Remove the driver air bag 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 screws from the upper and lower steering column covers, and remove the covers.
5. Remove the driver side knee bolster or instrument panel lower cover.
6. Disconnect the driver air bag, horn, and connectors from the lower steering column.
7. Remove the screws and discard them.
8. Remove the clock spring from the steering shaft.

Installation Procedure

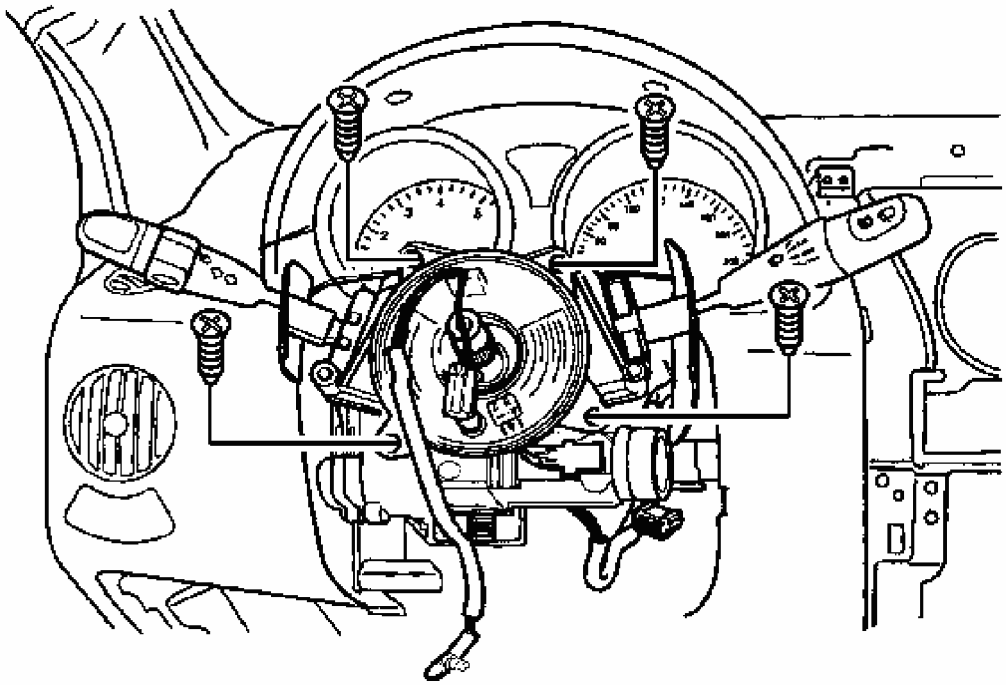


Fig. 46: Clock Spring, Steering Shaft & Screws
Courtesy of GENERAL MOTORS CORP.

1. Install the clock spring to the steering shaft. Refer to **Inflatable Restraint Steering Wheel Module Coil Centering** in Steering Wheel and Column.

NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the new screws.

   Tighten: Tighten the clock spring screws to 3 N.m (27 lb in).

3. Connect the driver air bag, horn, and connectors to the lower steering column.
4. Install the driver side knee bolster or instrument panel lower cover.
5. Install the upper and lower steering column covers, and install the screws.
6. Install the steering wheel. Refer to **Steering Wheel Replacement** in Steering Wheel and Column.
7. Install the driver air bag module. Refer to **Inflatable Restraint Steering Wheel Module Replacement**.

8. Connect the negative battery cable.

INFLATABLE RESTRAINT INSTRUMENT PANEL MODULE REPLACEMENT

Removal Procedure

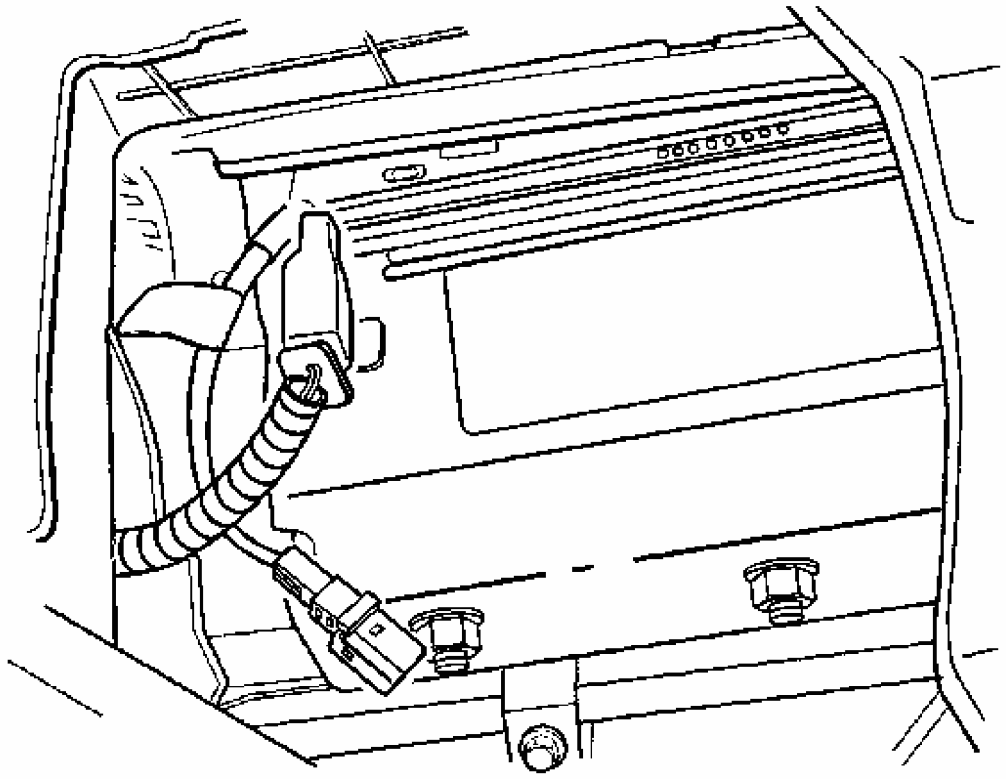


Fig. 47: Passenger Air Bag Yellow & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

CAUTION: The sensing and the diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for up to 1 minute after the ignition has been turned OFF and the fuse has been removed. If the airbags and pretensioners are not disconnected, do not begin service until one minute has been passed after disconnecting power to the SDM. Failure to do so may cause personal injury.

CAUTION: Refer to Battery Disconnect Caution in Cautions and

Notices.

1. Disconnect the negative battery cable.
2. Remove the glove box. Refer to **Storage Compartment Replacement - Instrument Panel (I/P)** in Instrument Panel, Gages, and Console.
3. Disconnect the passenger air bag yellow electrical connector.
4. Remove the passenger air bag module by removing the mounting bolts from the air bag bracket.

Installation Procedure

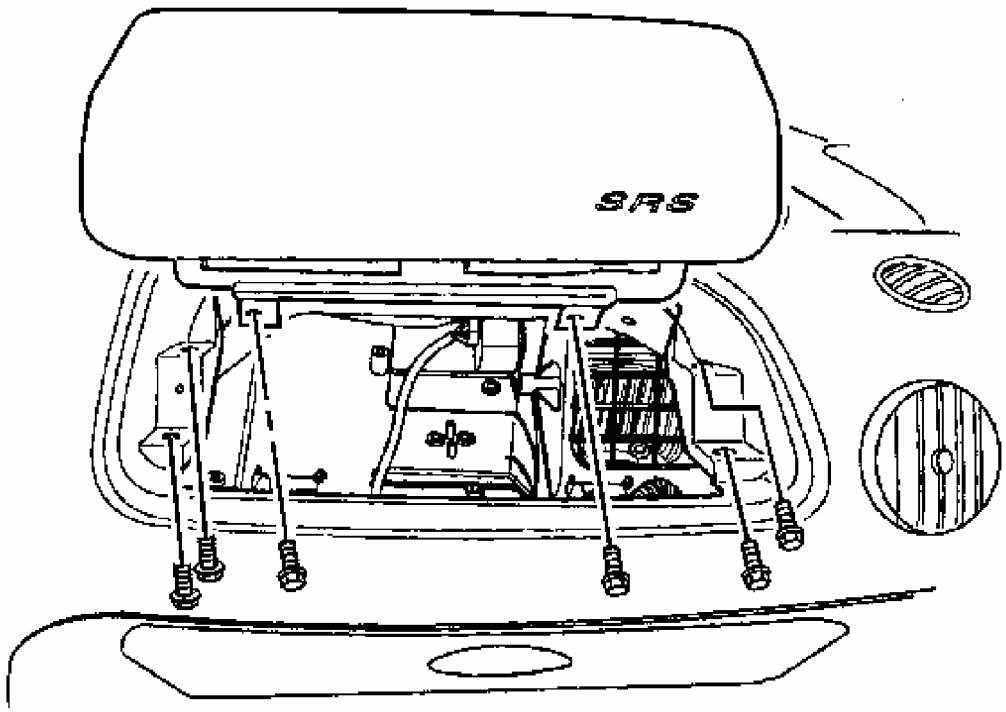


Fig. 48: Passenger Air Bag Module
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the passenger air bag module by installing the mounting bolts to the air bag bracket.

Tighten: Tighten the passenger air bag module mounting bolt to 11 N.m (97 lb in).

2. Connect the passenger air bag yellow electrical connector.
3. Install the glove box. Refer to **Storage Compartment Replacement - Instrument Panel (I/P)** in Instrument Panel, Gages, and Console.
4. Connect the negative battery cable.

REPAIRS AND INSPECTIONS REQUIRED AFTER A COLLISION

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.

- If any SIR components are damaged, they must be replaced. If SIR components mounting points are damaged, they must be repaired or replaced.
- Never use SIR parts from another vehicle. This does not include remanufactured parts purchased from an authorized source.
- Do not attempt to service the SDM, the clock spring, or other air bag modules. These items must be replaced if they are defective.
- Verify the part number of replaced air bag modules. Some inflator modules look identical, but contain different internal components.

Accident With Deployment Components Replacements

All SIR components must be replaced after a frontal crash involving air bag deployment. After deployment, a powdery residue may be on the surface of the air bag. The powder consists primarily of cornstarch, used to lubricate the bag as it inflates, and by-products of the chemical reaction. The sodium hydroxide then quickly reacts with atmospheric moisture and is converted to sodium bicarbonate, also known as baking soda. Therefore, it is unlikely that sodium hydroxide will be present after deployment. Replace the following SIR components:

CAUTION: Safety precautions must be followed when handling a deployed inflator module (air bag). After deployment, the inflator module (air bag) surface may contain a small amount of sodium hydroxide, a by-product of the deployment reaction, that is irritating to the skin and eyes. Most of the powder on the inflator module (air bag) is harmless. as a precaution, wear gloves and safety glasses when handling a deployed inflator

module (air bag), and wash your hands with mild soap and water afterwards.

- The SDM
- Air bag modules and pretensioners
- SIR wiring
- Clock spring

Accident Without Deployment Component Inspection

Certain inspects must be performed after any crash, whether the air bag has deployed or not.

- The steering column must be dimensionally inspected.
- Inspect the knee bolsters and mounting points for distortion, bending and cracking, or other damages.
- Inspect the instrument panel (I/P) and steering column reinforcement plate for distortion, bending and cracking, or other damage.
- Inspect the I/P braces for distortion, bending and cracking, or other damage.
- Inspect the seat belt and mounting points. Refer to **Seat Belt Replacement - Front** in Seat Belts.

INFLATOR MODULE HANDLING AND SCRAPPING

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

- Air bag modules should not be subjected to temperatures above 65°C (149°F).
- An air bag and the SDM should not be used if it has been dropped from a height of 0.9 meters (3 feet) or greater.
- When an SDM is replaced, it must be oriented with the arrow on the SDM pointing toward the front of the vehicle.
- It is very important for the SDM to be installed flat on the mounting surface, parallel to the vehicle's longitudinal axis.
- To avoid setting diagnostic trouble codes (DTCs), do not apply power to the SIR unless all components are connected or a diagnostic chart requests it.
- The Diagnostic System Check - SIR must be the starting point of any SIR diagnostics. The Diagnostic System Check - SIR will verify proper air bag indicator operation and will lead you to the correct chart to diagnose any SIR malfunctions. Passing these procedures may result in extended diagnostic time incorrect parts replacement.

Inflator Module Handling and Scrapping

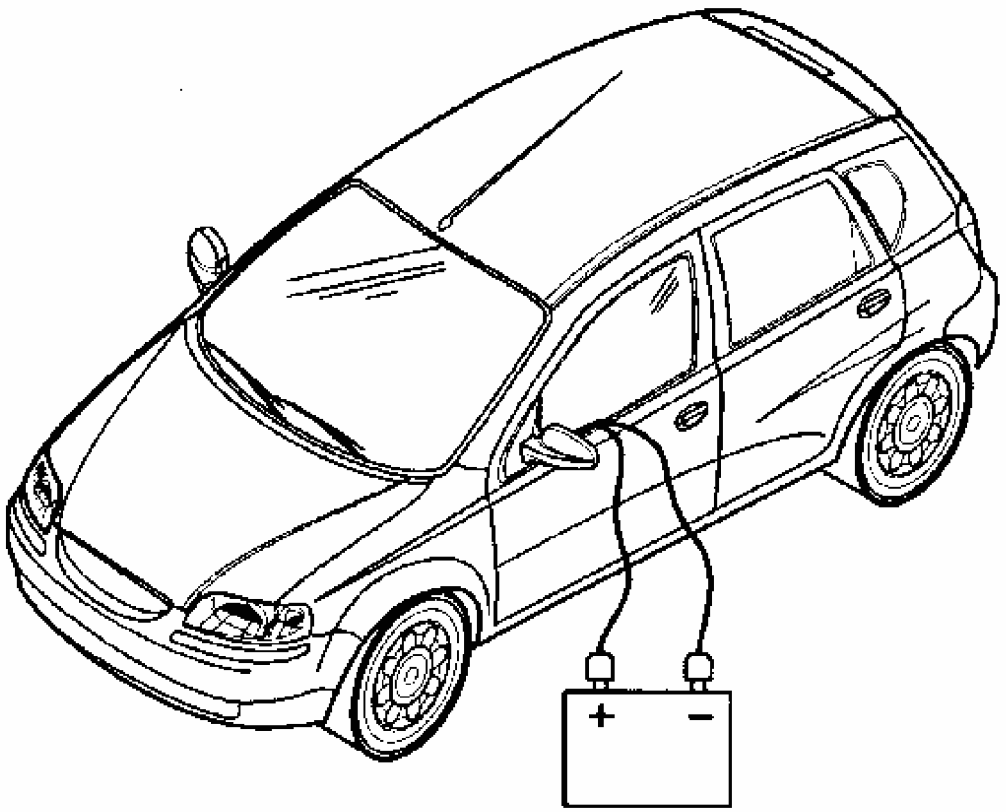


Fig. 49: Deploying Air Bags Before Disposing Them
Courtesy of GENERAL MOTORS CORP.

Deploy the air bags before disposing them. If a vehicle is to be scrapped, the air bag may be deployed inside the vehicle.

CAUTION: When deploying an airbag inside the vehicle, make sure the vehicle doors are closed and the side windows are fully open. Wear safety glasses throughout the entire procedure. Make sure the deployment area in the vehicle is clear of people, or loose objects. Failure to follow these guidelines could result in personal injury or vehicle damage.

- Before deploying the air bags, remove all loose objects from the air bag's expansion area.
- Deploy the air bags with the vehicle doors closed and the side windows open.

- Deploy the air bags only in an evacuated area. Service personnel who must be present during the deployment should be at least 10 meters (33 feet) in front of the vehicle.
- Do not connect the voltage source until after having completed all other preparations for the deployment of the air bags.
- Allow a deployed air bag module or pretensioner to cool for 30 minutes before handling.
- Wear gloves and eye protection during the disposal procedure.
- If the deployment fails, disconnect the voltage source and wait 5 minutes before approaching the vehicle.

Deployment Procedure

CAUTION: The sensing and the diagnosis module (SDM) can maintain sufficient voltage to deploy the airbags and pretensioners for up to 1 minute after the ignition has been turned OFF and the fuse has been removed. If the airbags and pretensioners are not disconnected, do not begin service until one minute has been passed after disconnecting power to the SDM. Failure to do so may cause personal injury.

CAUTION: Refer to Battery Disconnect Caution in Cautions and Notices.

1. Disconnect both battery cables and place the battery at least 10 meters (33 feet) from the vehicle.
2. Remove the driver side knee bolster or instrument panel lower cover from the steering column. Refer to **Instrument Panel (I/P) Trim Panel Replacement - Lower** in Instrument Panel, Gages, and Console.
3. At the lower steering column, cut the 2 wires leading from the supplemental inflatable restraints (SIR) harness to the clock spring.
4. Strip 13 mm (0.5 in) of the insulation from the end of the wires leading to the clock spring.
5. Use 2 additional wires, each at least 10 meters (33 feet) long to reach from the deployment battery to the inflator module.
6. Strip 13 mm (0.5 in) of the insulation from the end of these 2 additional wires.
7. Twist the 2 wires together at 1 end.
8. Place the twisted ends of the 2 wires near the deployment battery. Do not connect the wires to the battery at this time.
9. Using the free end of the 10 meters (33 feet) wires leading to the clock spring, make 2 splices, 1 at each wire from the air bag module.

10. Wrap the wires with insulation tape.
11. Now that the free ends of the 10 meters (33 feet) wires are spliced to the air bag module wires, and the ends that are twisted together are near deployment battery, clear the area.
12. Untwist the wires that are near the deployment battery.
13. Touch 1 wire to the positive battery terminal and touch the other wire to the negative battery terminals. The air bag will deploy.
14. Repeat this procedure for the passenger air bag, side air bags, and pretensioners.
15. Using proper precautions, dispose of the deployed air bags and pretensioners. Refer to the Deployed Air Bag Module Disposal Procedure information in this procedure.

Air Bag Module Deployment - Outside of Vehicle

If the vehicle is within the warranty period, contact the General Motors regional service manager for approval or special instructions before deploying the air bag modules.

Deploy the air bags in the following situations:

- If the vehicle is to be scrapped
- If an air bag module is damaged during transit, storage, or service

CAUTION: When you are deploying an inflator module for disposal, perform the deployment procedures in the order listed. Failure to follow the procedures in the order listed may result in personal injury.

- Deploy the air bags only in an evacuated area. Service personnel who must be present during the deployment should be at least 10 meters (33 feet) in front of the vehicle.
- Do not connect the voltage source until after having completed all other preparations for the deployment of the air bags.
- Allow a deployed air bag module or pretensioner to cool for 30 minutes before handling.
- Wear gloves and eye protection during the disposal procedure.
- If the deployment fails, disconnect the voltage source and wait 5 minutes before approaching the vehicle.

1. Position the air bag module face up, on flat ground outdoors, at least 10 meters (33 feet) from any obstacles or people.
2. Place a vehicle battery at least 10 meters (33 feet) away from the air bag module.
3. Deploy the air bag module.
4. If you do not have a deployment tool, follow the procedure below.
5. Cut the yellow wires to the air bag module/pretensioner.

6. Strip 13 mm (0.5 in) of the insulation from the end of the wires leading to the air bag module/pretensioner.
7. Use 2 additional wires, each at least 10 meters (33 feet) long, to reach from the deployment battery to the air bag module/pretensioner.
8. Strip 13 mm (0.5 in) of the insulation from the ends of these 2 additional wires.
9. Twist the 2 wires together at one end.
10. Place the twisted ends of the 2 wires near the deployment battery. Do not connect the wires to the battery at this time.
11. Using the free ends of the 10 meters (33 feet) wires leading to the air bag module/pretensioner, make 2 splices, 1 at each wire from the air bag module/pretensioner.
12. Wrap the splices with insulating tape.
13. Now that the free ends of the 10 meters (33 feet) wires are spliced to the air bag module/pretensioner wires, and the ends that are twisted together are near the deployment battery, clear the area.
14. Untwist the wires that are near the deployment battery.
15. Touch 1 wire to the positive battery terminal and touch the other wire to the negative battery terminal. The air bag will deploy.
16. Using proper precautions, dispose of the deployed air bags and pretensioners. Refer to the Deployed Air Bag Module Disposal Procedure information in this procedure.

Deployed Air Bag Module Disposal Procedure

CAUTION: Safety precautions must be followed when handling a deployed inflator module (air bag). After deployment, the inflator module (air bag) surface may contain a small amount of sodium hydroxide, a by-product of the deployment reaction, that is irritating to the skin and eyes. Most of the powder on the inflator module (air bag) is harmless. as a precaution, wear gloves and safety glasses when handling a deployed inflator module (air bag), and wash your hands with mild soap and water afterwards.

CAUTION: Immediately following the deployment of an air bag, the metal surfaces of the inflator module are very hot. Do not place the deployed inflator module near any flammable objects. Wait for about ten minutes before touching any metal surface of the inflator module. Disregarding these precautions may cause fire or personal injury.

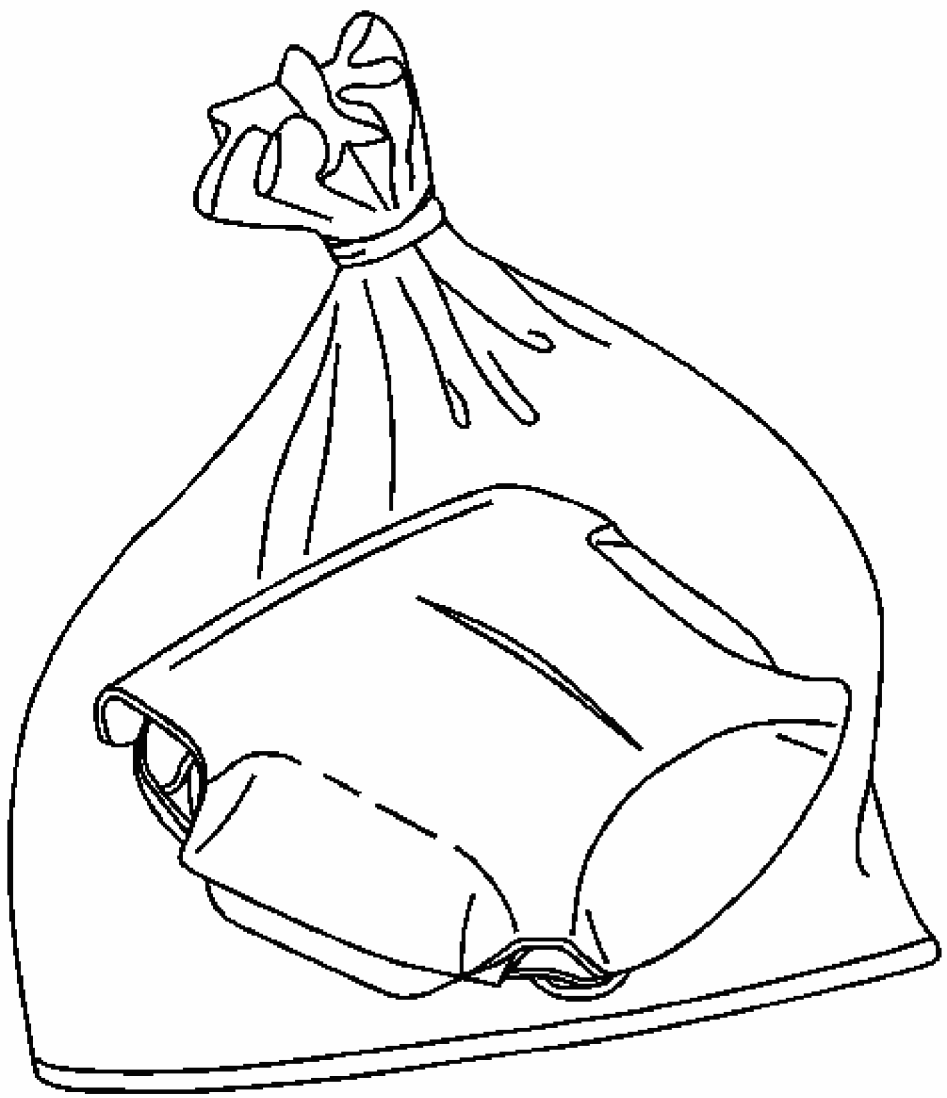


Fig. 50: Deploying An Air Bag Or Pretensioner Before Disposing It
Courtesy of GENERAL MOTORS CORP.

Deploy an air bag or pretensioner before disposing of it.

This includes those in a whole vehicle being scrapped. If the vehicle is still within the warranty period, contact the General Motors regional service manager for approval or special instructions before deploying an air bag module or a pretensioner. A deployed air bag module or pretensioner should be disposed of in the same manner as other scrap parts, with the addition to the following steps:

1. Place the deployed air bag or pretensioner in a sturdy plastic bag.
2. Seal the plastic bag securely.
3. Wash your hands and rinse them with water after handling a deployed air bag.

DESCRIPTION AND OPERATION

SIR SYSTEM DESCRIPTION AND OPERATION

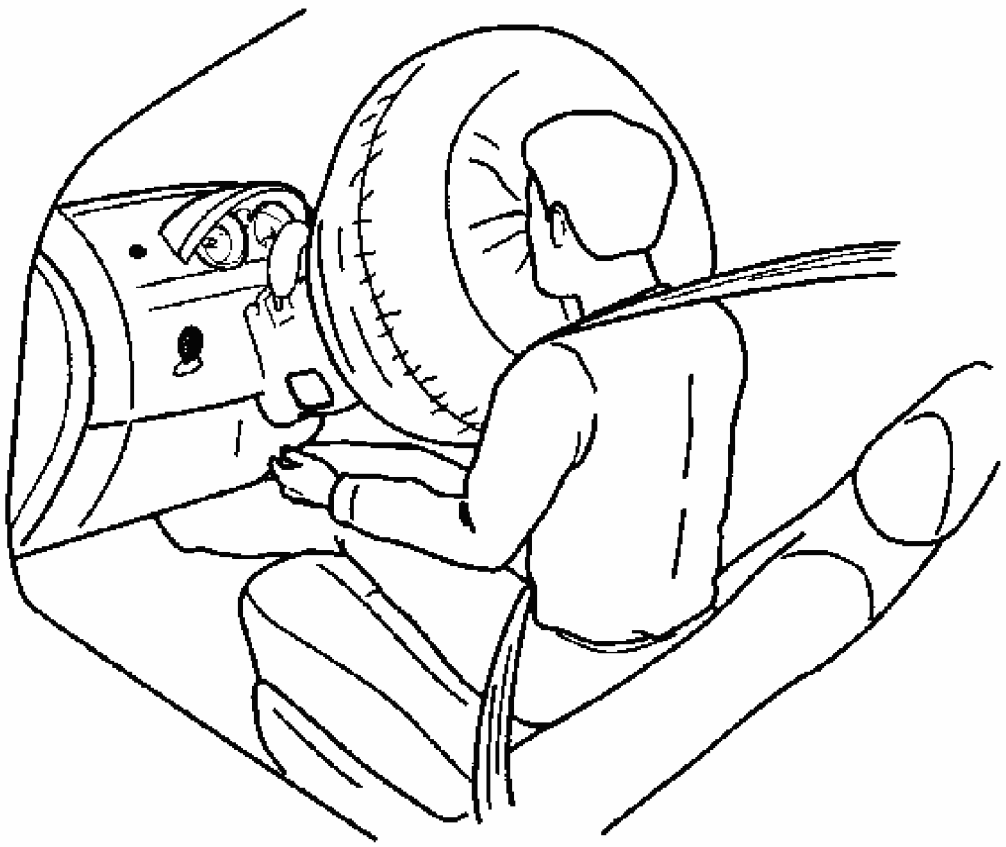


Fig. 51: View Of Deployed Air Bag
Courtesy of GENERAL MOTORS CORP.

The supplemental inflatable restraints (SIR) is a safety device used in conjunction with the seat belt. The air bag does not replace the function of the seat belt. The driver and the passengers must always fasten their seat belts and adjust them for a proper fit.

The SIR is designed to protect the driver and the front seat passenger in the event of a significant frontal impact to the vehicle. The air bags deploy if the force is applied from a

direction within 30 degrees of the vehicle's centerline.

The SIR system consists of a

- Driver air bag module
- Driver side air bag module (except North America models)
- Passenger air bag module
- Passenger side air bag module (except North America models)
- Driver's and front passenger's seat belt pretensioners (and load limiter for some model)
- Sensing and diagnostic module (SDM)
- Clock spring
- Wire harness and connectors
- AIR BAG indicator on the instrument cluster
- Side air bag sensor (except North America models)

Air Bag Modules

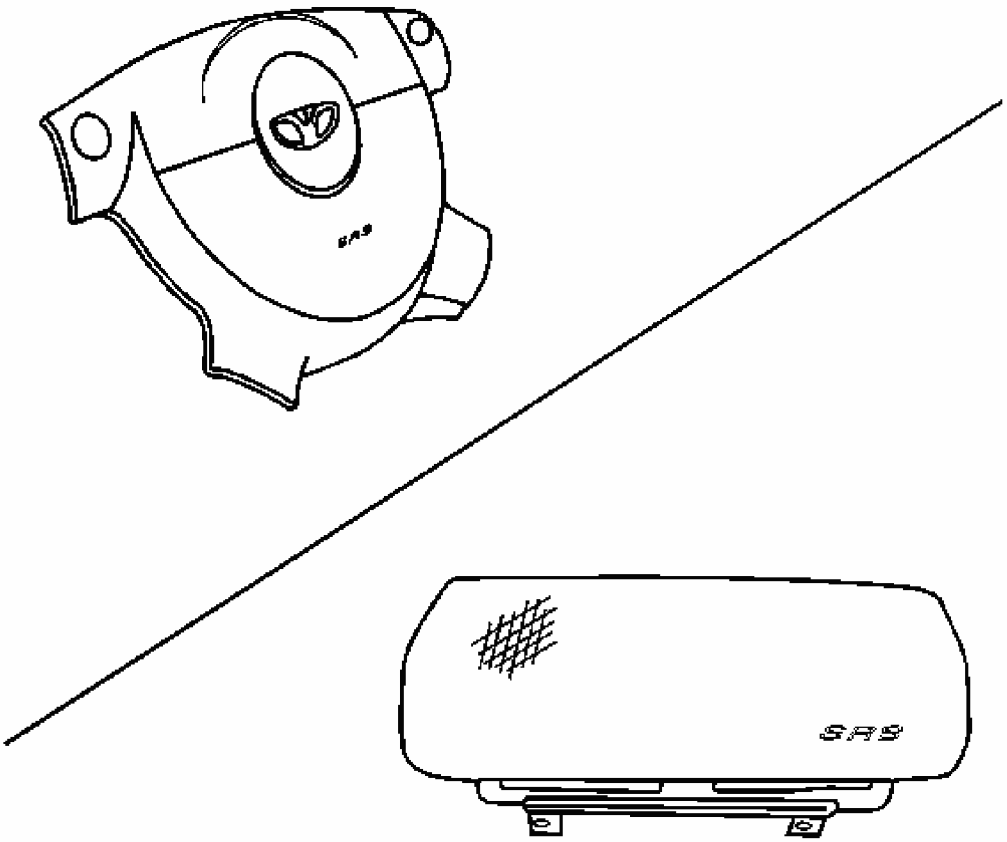


Fig. 52: Air Bag Modules
Courtesy of GENERAL MOTORS CORP.

Driver Air Bag Module

CAUTION: Refer to SIR Caution in Cautions and Notices.

The driver air bag module is under the center pad of the steering wheel. The driver air bag module contained an igniter charge and a gas generator to inflate the folded air bag.

The air bag connector contains a shorting bar, which makes the circuit shorted when the connector is disconnected. The shorting bar prevents current from travelling through the driver air bag module during servicing. The shorting bar is disengaged when the connector is connected.

Passenger Air Bag Module

CAUTION: Refer to SIR Caution in Cautions and Notices.

The passenger air bag module is on the passenger part of the instrument panel. The passenger air bag module contains an igniter charge and a gas generator to inflate the folded air bag.

The air bag connector contains a shorting bar, which makes the circuit shorted when the connector is disconnected. The shorting bar prevents current from travelling through the passenger air bag module during servicing. The shorting bar is disengaged when the connector is connected.

Side Air Bag Module (Except North America Models)

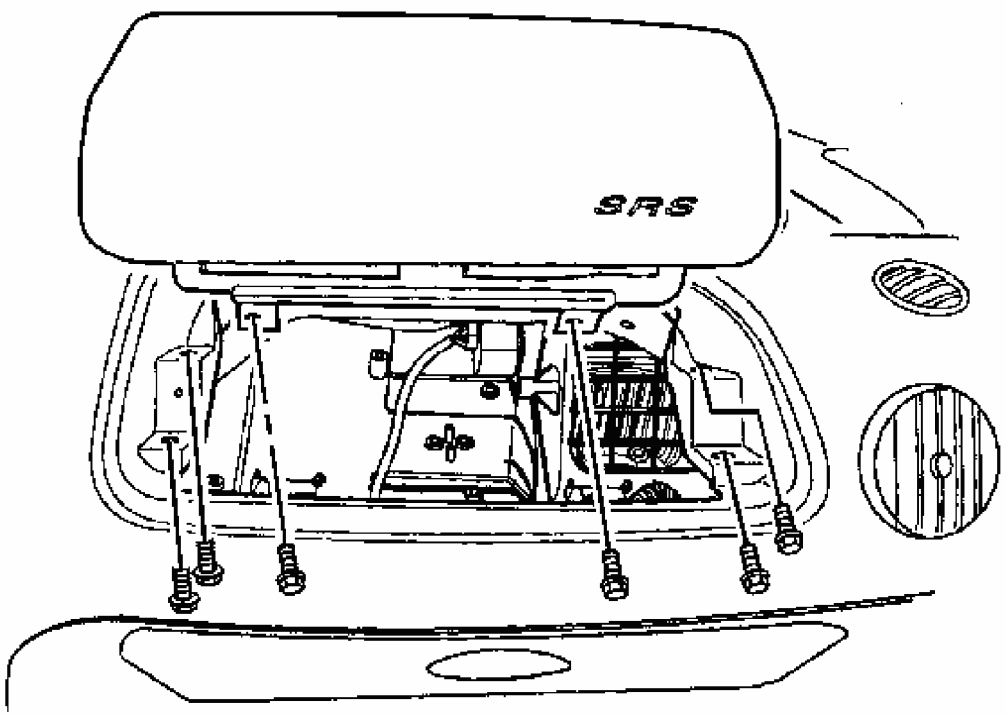


Fig. 53: Passenger Air Bag Module
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to SIR Caution in Cautions and Notices.

The side air bag modules are in the driver's and passenger's seats. The side air bag module

contains an igniter charge and a gas generator to inflate the folded air bag.

The air bag connector contains a shorting bar, which makes the circuit shorted when the connector is disconnected. The shorting bar prevents current from travelling through the side air bag module during servicing. The shorting bar is disengaged when the connector is connected.

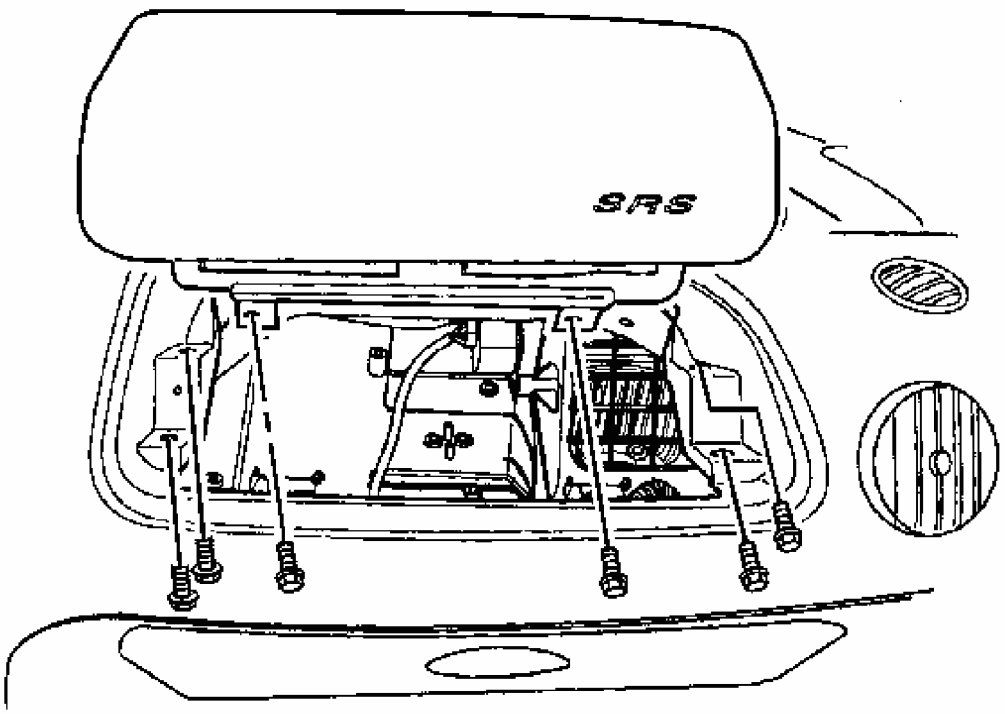


Fig. 54: Passenger Air Bag Module
Courtesy of GENERAL MOTORS CORP.

Front Seat Belt Pretensioners

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.

The seat belt pretensioners, with a load limiter for some vehicles, are assembled with each front seat belt retractors to retract the seat belt webbing when accounted frontal collision.

The seat belt pretensioners are controlled by sensing and diagnostic module (SDM). The seat belt pretensioner contains an igniter charge and a gas generator to pull the seat belt webbing. The seat belt pretensioner must be replaced after an accident that causes its activation.

The seat belt pretensioner also contains a shorting bar to prevent current from travelling through the seat belt pretensioner during servicing. The shorting bar is disengaged when the connector is connected.

Sensing and Diagnostic Module (SDM)

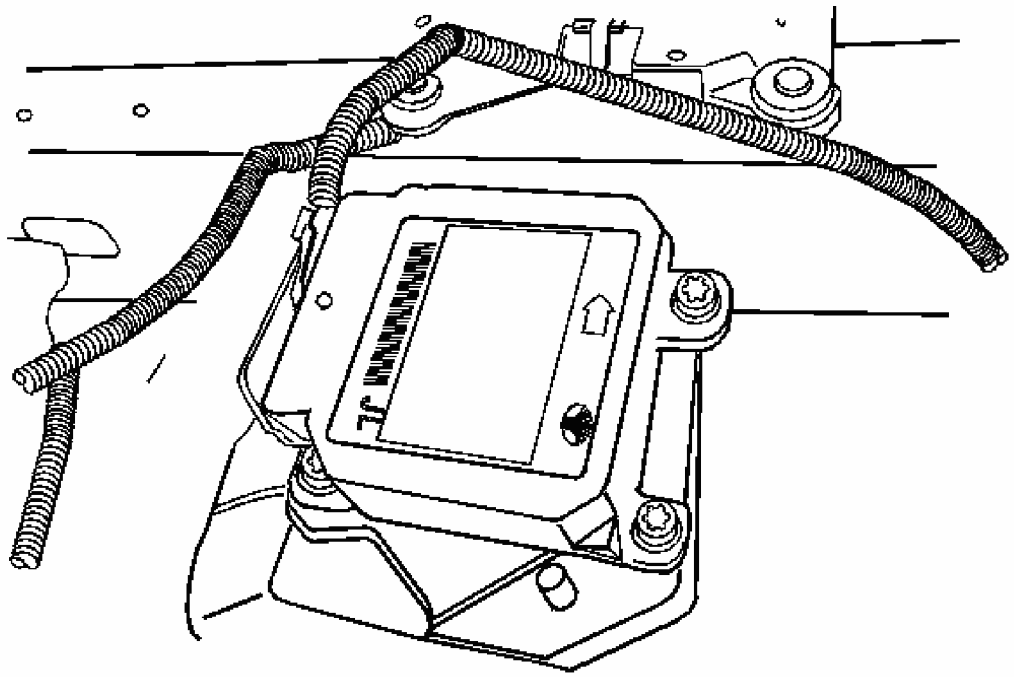


Fig. 55: Sensing and Diagnostic Module (SDM)
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Sensing and Diagnostic Module Handling Caution in Cautions and Notices.

The SDM is located on the floor beneath the floor console assembly. The SDM performs the following functions :

- Monitors the supplemental inflatable restraints (SIR) electrical components and sets a diagnostic trouble code (DTC) when malfunction is detected.
- Records any faults that are discovered.

- Displays SIR diagnostic trouble codes and system status information when connected to a scan tool.
- Illuminates the air bag indicator to alert the driver to any fault.
- Provides a reserve power source to deploy the air bags and pretensioners if an accident has disabled the normal power source.
- Monitors vehicle velocity changes to detect frontal impacts, which are severe enough to warrant deployment.
- Causes current to flow through the air bag modules and pretensioner to cause deployment if a frontal impact of sufficient force is detected.

The SDM contains no user-serviceable parts.

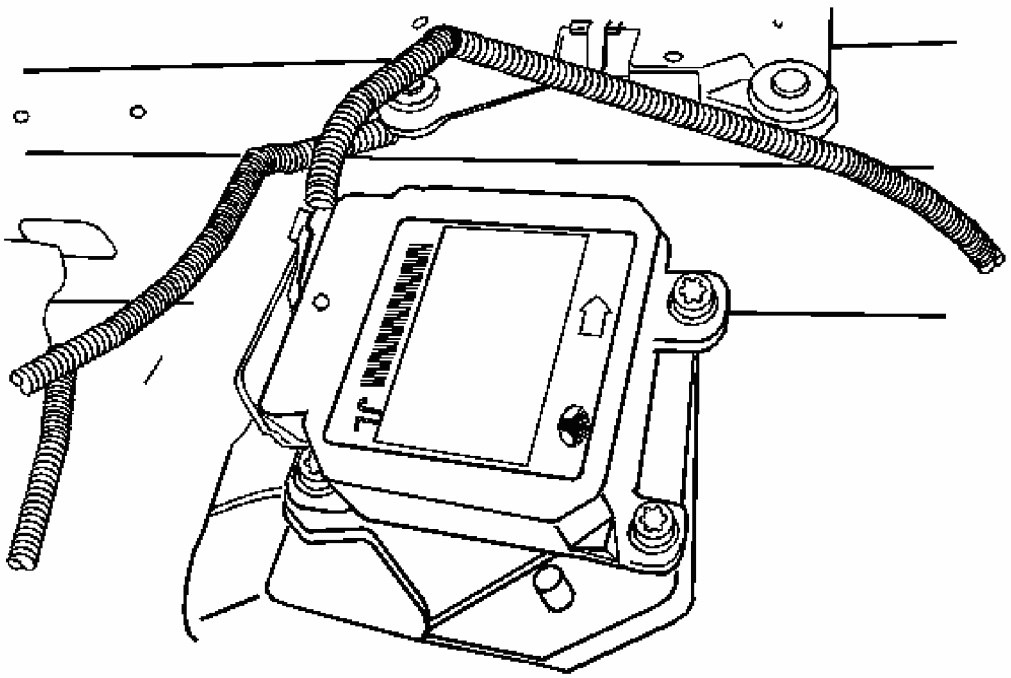


Fig. 56: Sensing and Diagnostic Module (SDM)
Courtesy of GENERAL MOTORS CORP.

Air Bag Warning Lamp

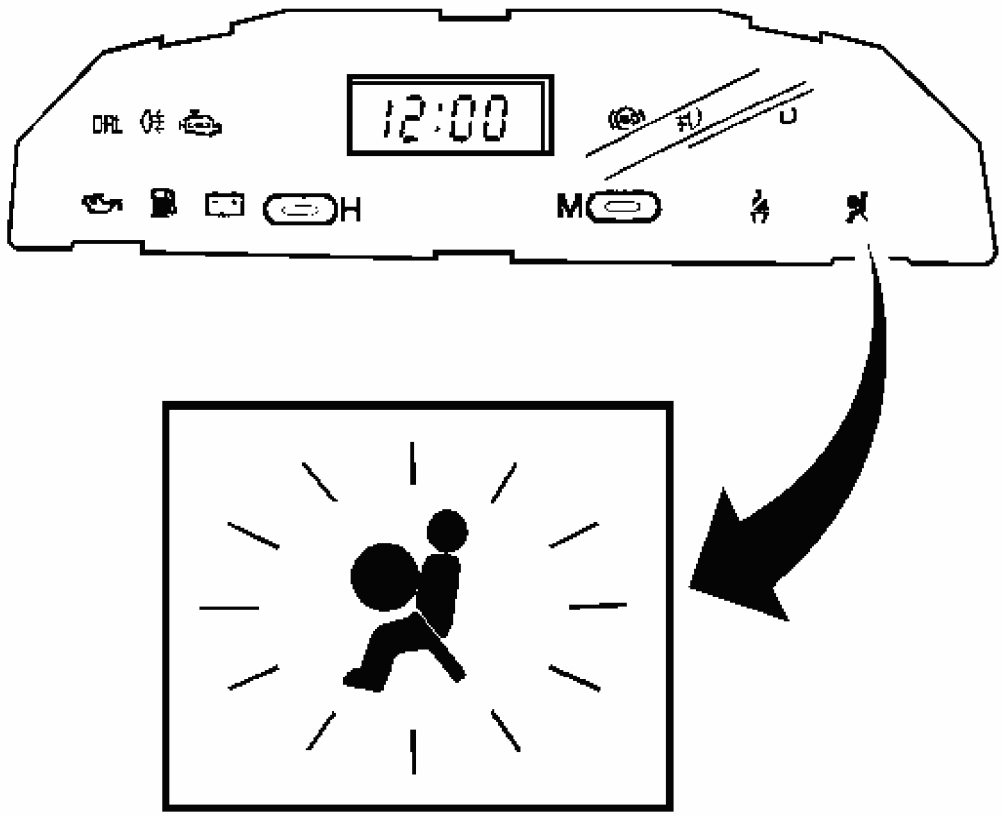


Fig. 57: Air Bag Warning Lamp
Courtesy of GENERAL MOTORS CORP.

The instrument cluster contains an air bag warning indicator and sensing and diagnostic module (SDM). The SDM performs a turn-on test when the ignition is turned ON.

The SDM flashes the air bag indicator seven times by supplying an intermittent ground to the indicator lamp circuit. After flashing seven times, the air bag indicator will turn off if no more malfunctions have been detected.

If the SDM has detected malfunctions in the internal and external circuits, which could potentially affect the operation of the supplemental inflatable restraints (SIR), the air bag indicator stays on. Some malfunctions could result in non-deployment when necessary or deployment under conditions which would not normally result in deployment.

When the SDM is not properly attached to its connector, the air bag circuit is shorted to ground because there is a shorting bar in the SDM electrical connector. The shorting bar is disengaged when proper connection is made, but if a poor connection exists the SDM

connector supplied a ground to the air bag indicator independently of the SDM, and the air bag indicator turns on.

Clock Spring

CAUTION: When servicing the steering column, the Supplemental Inflatable Restraint (SIR) System clock spring must be centered for proper steering wheel operation. Failure to properly center the SIR clock spring may result in reduced turnability of the steering wheel causing the vehicle to improperly maneuver and may cause the SIR system to be inoperative.

There is a coil assembly in the steering which is referred to as a clock spring because of its internal resemblance to the type of spring used in a mechanical clock. The coil spring should never be disassembled, and there is no timekeeping function. The clock spring contains two or three current-carrying coils. One of the current-carrying coils maintains continuous contact within the driver deployment loop while the steering wheel is rotated. The clock spring also contains coils that maintain continuous contact for horn and remote audio control switch circuit.

Turning the steering wheel in one direction tightens the coil, and turning the steering wheel in the opposite direction loosens the coil. Do not turn the clock spring when the steering wheel is not attached. Refer to **Inflatable Restraint Steering Wheel Module Coil Replacement** for proper installation of the clock spring.

The clock spring also includes the wiring and the connectors for the horn circuit and the driver air bag circuit. A yellow two-way connector on the lower steering column is attached to the clock spring wiring. The yellow connector to the air bag contains a shorting bar which connects the driver high circuit to driver low circuit when the connector is disconnected.

The shorting bar prevents current from travelling through the driver air bag module during servicing. The shorting bar is disengaged when the clock spring connector is connected.

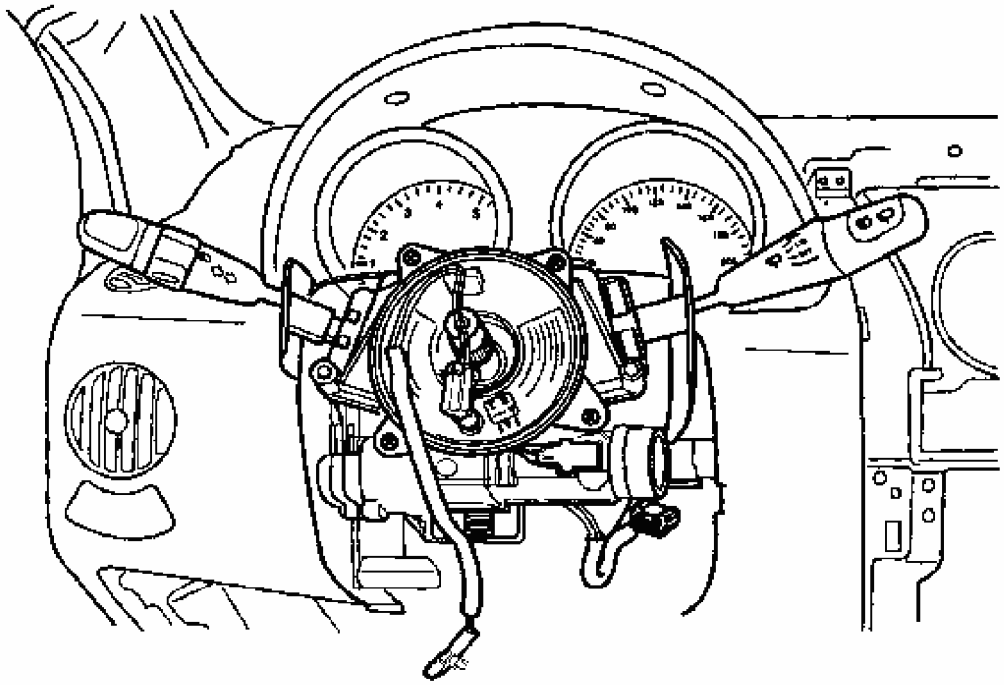


Fig. 58: Clock Spring
Courtesy of GENERAL MOTORS CORP.

Wiring Harness Connectors

If the sensing and diagnostic module (SDM) electrical connector is not attached properly, a built in shorting bar will connect the wire from air bag warning lamp with the SDM ground wire. This turns on the air bag indicator. To prevent deployment during servicing, additional shorting bars are located in following locations :

- The clock spring electrical connector at the lower steering column
- The passenger air bag module
- The driver air bag module
- The seat belt pretensioners

The shorting bar is only a backup safety device. Always disable the supplemental inflatable restraints (SIR) before beginning any service procedure.