

AIR BAG RESTRAINT SYSTEM**1998 AIR BAG RESTRAINT SYSTEMS General Motors****DESCRIPTION & OPERATION**

WARNING: To avoid injury from accidental air bag deployment, read and carefully follow all WARNINGS and SERVICE PRECAUTIONS .

SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM

The Supplemental Inflatable Restraint (SIR) system is designed to protect the driver and passenger in a frontal collision. The driver-side and passenger-side air bag modules will deploy only upon frontal or near frontal impact of no more than 30 degrees off the center line of vehicle. System is not designed to deploy in rear impacts, side impacts, or rollovers. A frontal impact of sufficient severity will cause the Sensing and Diagnostic Module (SDM) to detect this sudden deceleration. The SDM then deploys the air bag modules. Additionally, vehicle is equipped with driver-side and passenger-side front seat belt pretensioners which are also deployed by the Sensing and Diagnostic Module.

The System also incorporates a separate side impact system comprising of air bag impact sensors located in each front door, and side air bag modules located in outside edge of each front seatback. Deployment of side impact system will occur when one of the Side Impact Sensors (SIS) detects a side impact severe enough to warrant deployment. Malfunction monitoring of the SIS is performed by the SDM.

SENSING AND DIAGNOSTIC MODULE (SDM)

The SDM monitors vehicle velocity changes to detect frontal crashes which are severe enough to warrant air bag module deployment. When a frontal crash of sufficient force is detected, SDM will cause enough current to flow through they system to deploy air bag modules and seat belt pretensioners. The SDM also maintains a 28.5 Volt Loop Reserve (28.5 VLR) energy supply to provide deployment energy in cases where ignition voltage is lost in a frontal crash.

Additionally, the SDM provides diagnostic monitoring of the SIR system electrical components, including the Side Impact Sensors (SIS). When a malfunction is detected, the SDM sets a Diagnostic Trouble Code (DTC) which is retrieved using a scan tool. The SDM warns the driver of system malfunctions by controlling the AIR BAG warning light.

SIDE IMPACT SENSORS (SIS)

The Side Impact Sensors (SIS) monitor door velocity changes to detect side crashes which are severe enough to warrant air bag module deployment. When a side crash of sufficient force is detected, SIS on impact side causes enough current flow through air bag modules to deploy respective air bag module.

Additionally, SIS provides diagnostic monitoring of side impact SIR system electrical components. When a malfunction is detected, SIS communicates status of side impact system to SDM.

AIR BAG WARNING LIGHT

AIR BAG warning light is installed in Instrument Panel Cluster (IPC). SDM communicates with IPC using serial data communications. When ignition switch is first turned ON, AIR BAG warning light verifies system operation by flashing 7 times and turning off. During vehicle operation, AIR BAG warning light warns driver of malfunctions which could potentially affect SIR system operation.

SIR COIL ASSEMBLY

SIR coil assembly consists of 2 or more current-carrying coils. Coils are attached to steering column and allow rotation of steering wheel, while maintaining continuous (directly wired) contact of deployment loop through driver-side air bag module.

Shorting bar across terminals No. 7 and 8 of the 8-pin connector shorts circuits to SIR coil and driver-side air bag module when disconnected. This prevents deployment of air bag module when servicing steering column or other SIR components.

AIR BAG MODULES

Air bag modules consist of an inflatable bag and inflator. When vehicle is in an accident of sufficient force, SDM causes current flow through deployment loops. Current passing through modules ignites inflator charges, producing gas which rapidly inflates air bags.

Shorting bars on connectors short circuits to driver-side, passenger-side and side impact air bag modules when disconnected. This prevents deployment of air bag modules when servicing SIR components.

SEAT BELT PRETENSIONERS

Seat belt pretensioners consist of an end buckle and buckle sleeve, a routing cable with piston and piston tube, a mounting bracket and a gas generator. When vehicle is in a frontal crash of sufficient force, SDM causes current to flow through front air bag deployment loops and pretensioner deployment loops. Seat belt pretensioners may deploy without the front air bags in a mild collision and will deploy immediately before front air bags in a mild-to-severe collision.

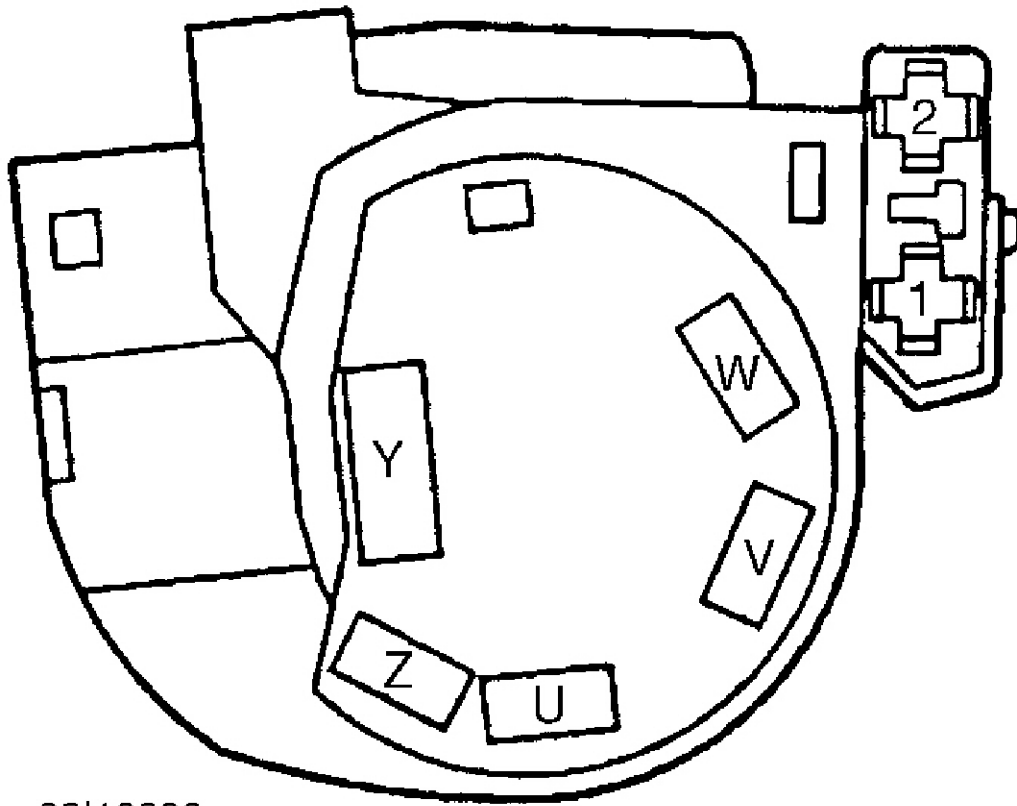
KNEE BOLSTERS

Knee bolsters are used to absorb energy and control forward movement of front passengers. This is accomplished by limiting leg movement during a frontal crash.

COMPONENT LOCATION

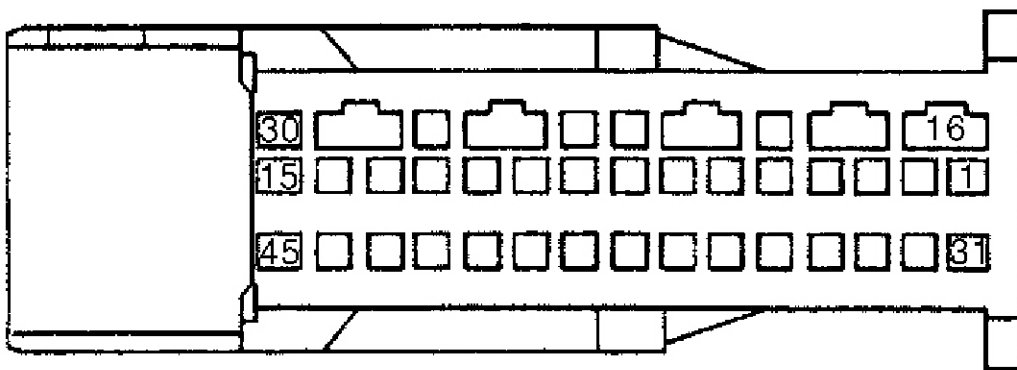
CONNECTOR IDENTIFICATION

NOTE: Refer to illustrations to identify SIR connector terminals. See Fig. 1 -Fig. 4 .



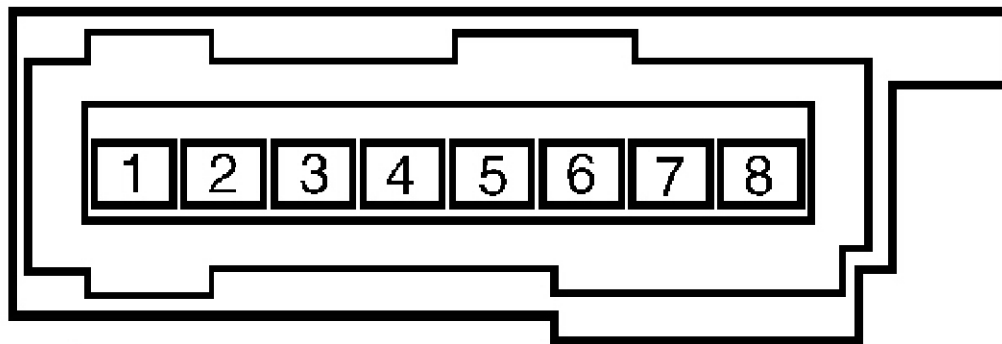
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Fig. 1: Identifying Ignition Switch Connector Terminals
Courtesy of GENERAL MOTORS CORP.



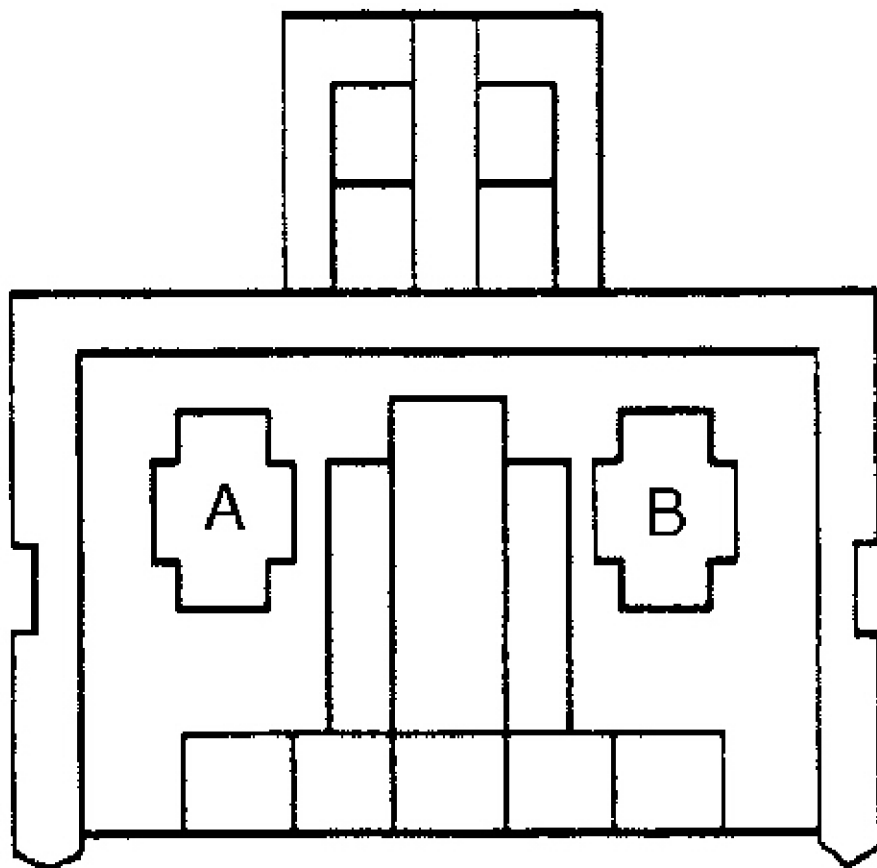
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Fig. 2: Identifying Sensing & Diagnostic Module (SDM) Connector Terminals
Courtesy of GENERAL MOTORS CORP.



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Fig. 3: Identifying SIR Coil Connector Terminals
Courtesy of GENERAL MOTORS CORP.



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Fig. 4: Identifying Passenger-Side Air Bag Connector Terminals
Courtesy of GENERAL MOTORS CORP.

SERVICE PRECAUTIONS

Observe the following precautions when working with SIR system:

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- SDM maintains sufficient voltage to cause air bag deployment for up to one minute after ignition switch is turned OFF. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
- After repairs, ensure AIR BAG warning light is working properly and no system faults are indicated. See **TESTING - SYSTEM OPERATION CHECK**.
- Always wear safety glasses when servicing or handling an air bag module.
- Air bag modules must be stored in original special containers until used for service. Store in a clean, dry place, away from sources of extreme heat, sparks, or high electrical energy.
- Air bag modules or SDMs should not be subjected to temperatures greater than 150°F (65°C).
- Air bag modules or SDMs should not be used if they have been dropped from a height of 3 feet or greater.
- When placing a live air bag module on a bench or other surface, always make certain that trim cover faces up. This will reduce motion of module if accidentally deployed.
- After deployment, air bag surface may contain deposits of sodium hydroxide, which can irritate skin. Always wear safety glasses, rubber gloves and long-sleeved shirt during clean-up, and wash hands using mild soap and water. Follow correct disposal procedures. See **DISPOSAL PROCEDURES**.
- At no time should any electrical source be allowed near inflator on back of air bag module.
- **DO NOT** apply power to SIR system unless all components are connected or a diagnostic chart requests it, as this will set a diagnostic trouble code.
- When carrying a live air bag module, trim cover should be pointed away from body to minimize injury in case of accidental deployment.
- **DO NOT** attempt to service any SIR component. All defective SIR components must be replaced.
- **DO NOT** probe a wire through insulator; this damages wire and eventually causes failure due to corrosion.
- When performing electrical tests, prevent accidental shorting of terminals. Such mistakes can damage fuses or components and may cause a second fault code to set, making diagnosis of original problem more difficult.
- When using diagnostic charts to diagnose SIR system, under no circumstances should a volt/ohmmeter, test light or any type of electrical equipment not specified by manufacturer be used. See **SPECIAL TOOLS**.
- If SIR system is not fully functional for any reason, vehicle should not be driven until system is repaired. **DO NOT** remove bulbs, modules, sensors or other components or in any way disable system from operating normally.

SPECIAL TOOLS

To avoid accidental deployment when working on SIR system, use only electrical test equipment specified by manufacturer. See **SIR RECOMMENDED TOOLS** table.

SIR RECOMMENDED TOOLS

Tool Name	Tool Number
Connector Test Adapter Kit	J-35616-A
Digital Multimeter	J-39200
Scan Tool	Tech 2
SIR Deployment Harness	J-38826
SIR Driver/Passenger Load Tool	J-38715-A
Steering Wheel Puller	J-1859-A
Steering Wheel Puller Legs	J-36541-A
Terminal Repair Kit	J-38125-A

DISABLING & ACTIVATING AIR BAG SYSTEM

CAUTION: When battery is disconnected, vehicle computer and memory systems may

lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES in GENERAL INFORMATION. Record preset radio stations and obtain code for theft deterrent-equipped radios before disconnecting battery.

DISABLING SYSTEM

WARNING: SDM maintains sufficient voltage to cause air bag deployment for up to one minute after ignition switch is turned OFF.

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition switch to LOCK position.
2. Remove key from ignition switch and wait one minute until energy reserve has discharged. Disconnect negative battery cable. System is now disabled.

ACTIVATING SYSTEM

1. With steering wheel turned so vehicle wheels are in straight-ahead position and ignition switch in LOCK position, connect negative battery cable.
2. Stay well away from air bags and turn ignition switch to RUN position. Check system for proper operation. See TESTING - SYSTEM OPERATION CHECK .

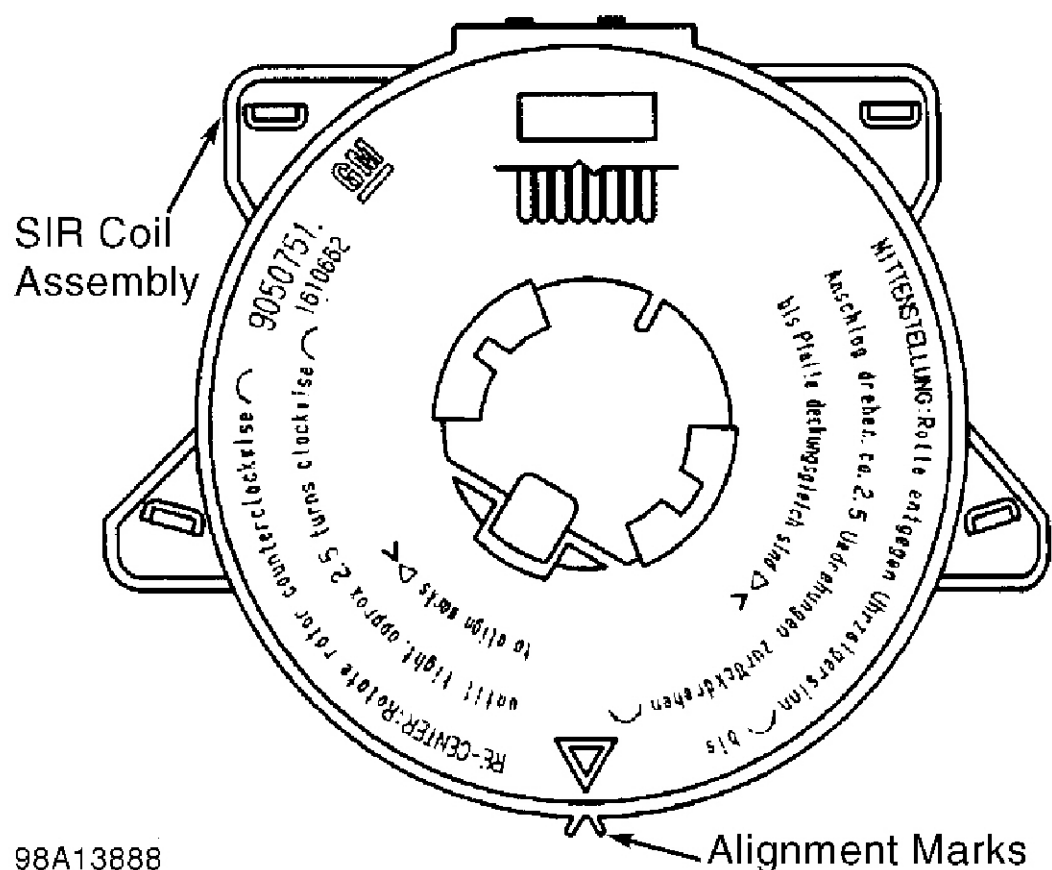
POST-COLLISION INSPECTION

When a vehicle has been involved in a collision, certain components of the passive restraint system must be inspected or replaced. See PASSIVE RESTRAINT SYSTEM INSPECTION article in the GENERAL INFORMATION section for post-collision inspection information.

ADJUSTMENTS

CENTERING COIL ASSEMBLY

1. If coil assembly has been removed from steering column and is being reinstalled, go to next step. New coil assemblies are pre-centered and include a centering tab that is removed once coil is installed.
2. While holding coil assembly housing, depress locking tab and rotate center counterclockwise until resistance is felt. Rotate coil center clockwise approximately 2 1/2 turns until arrow in center of coil aligns with arrow on the outer casing. See Fig. 5 .



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Fig. 5: Centering SIR Coil Assembly
 Courtesy of GENERAL MOTORS CORP.

DISPOSAL PROCEDURES

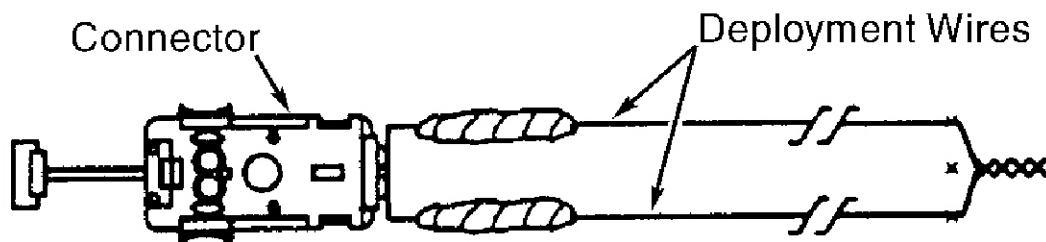
WARNING: To prevent accidental deployment and personal injury, deploy air bags before disposal. DO NOT dispose of undeployed air bag modules at normal refuse locations. Undeployed air bag modules contain substances that can cause severe illness or personal injury if sealed container is damaged during disposal.

NOTE: If vehicle is to be scrapped, perform on-vehicle air bag deployment procedure.

ON-VEHICLE DEPLOYMENT

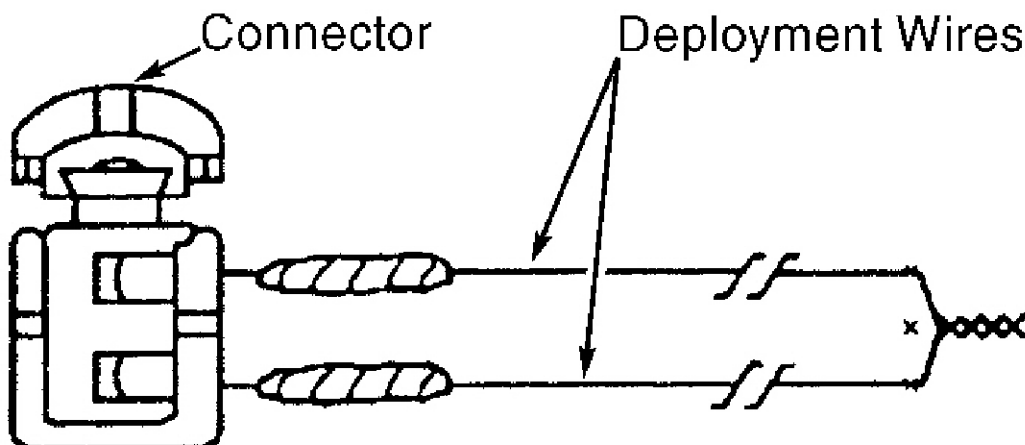
1. Before proceeding, see **SERVICE PRECAUTIONS**. Turn ignition switch OFF, remove key and put on safety glasses. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Cut air bag module harness connector from vehicle leaving at least 6" of wire at the connector. Strip 1/2" (13 mm) of insulation from each wire lead to the connector. Cut 2 deployment wires at least 20 feet long from 18-gauge multi-strand wire. Strip 1/2" (13 mm) of insulation from each connector wire lead. Cut 2 15-foot deployment wires from 18-gauge multi-strand wire. Strip 1/2" (13 mm) of insulation from both ends of wires. Twist wires together at one end to short.
3. Twist together one connector wire lead to other end of each deployment wire. See **Fig. 6**. Bend twisted connection flat and wrap tightly with electrical tape to insulate. Repeat this step for other connector wire lead.
4. Remove all loose objects from front seat, and ensure no one is in vehicle. Connect deployment harness to air bag module connector. Stretch wires away from car as far as possible.

5. Repeat steps 2-4 for passenger-side air bag module and seat belt pretensioners. See **Fig. 7** and **Fig. 8** . Side impact air bag modules must be removed before deploying. See **OFF-VEHICLE DEPLOYMENT** . Cover windshield and front door openings with a drop cloth.
6. Separate wire ends. Connect wires to a 12-volt battery. Air bag should deploy. Disconnect wires from battery. **DO NOT** touch metal surfaces of air bag module for at least 10 minutes due to heat generated during deployment. Wear gloves and safety glasses when handling deployed air bag module. Wash hands with mild soap and water. Dispose of deployed air bag module like any other part. Repeat deployment procedure for remaining air bags and pretensioners.
7. If air bag modules or pretensioners do not deploy, carefully remove from vehicle. See **REMOVAL & INSTALLATION** . Temporarily store module with trim facing up. Contact manufacturer for proper disposal instructions.



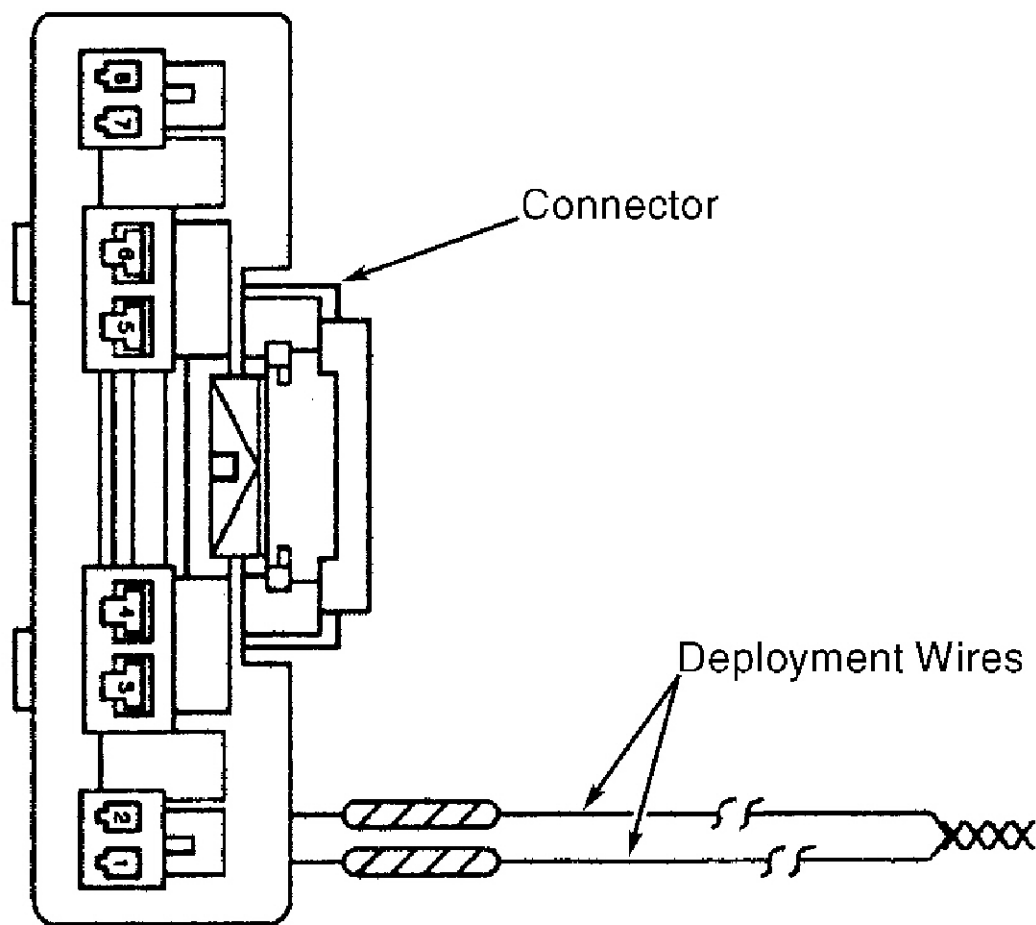
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Fig. 6: Preparing Deployment Harness For Driver-Side Air Bag On-Vehicle Deployment
 Courtesy of GENERAL MOTORS CORP.



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Fig. 7: Preparing Deployment Harness For Passenger-Side Air Bag On-Vehicle Deployment
 Courtesy of GENERAL MOTORS CORP.



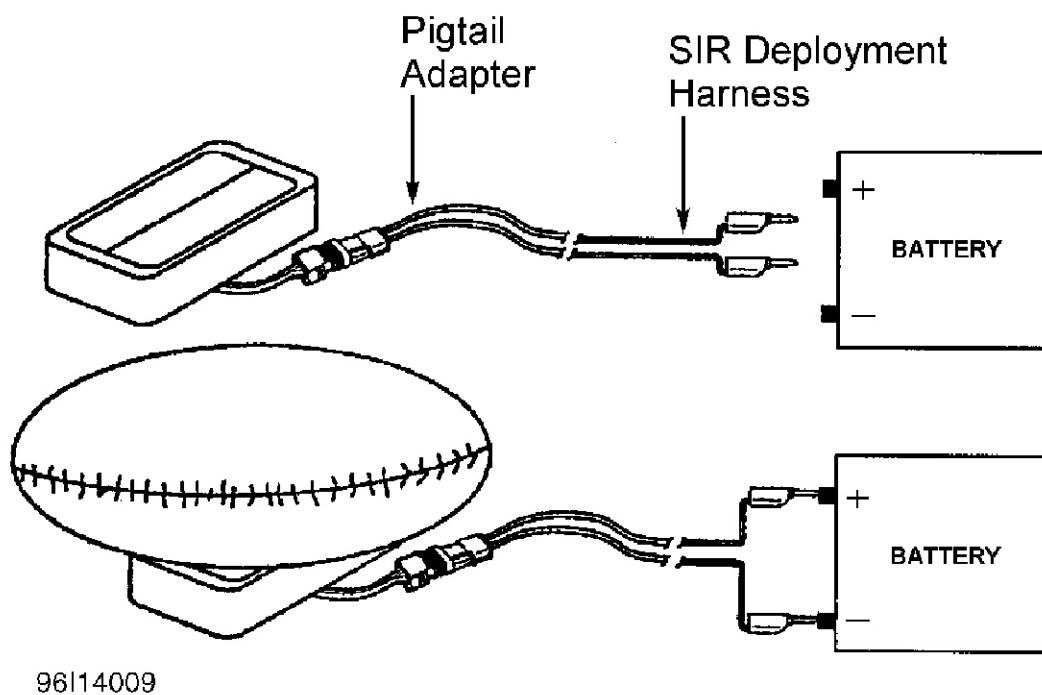
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Fig. 8: Preparing Deployment Harness For Seat Belt Pretensioner On-Vehicle Deployment
 Courtesy of GENERAL MOTORS CORP.

OFF-VEHICLE DEPLOYMENT

1. Before proceeding, see **SERVICE PRECAUTIONS**. Turn ignition switch OFF, remove key and put on safety glasses. Short 2 SIR Deployment Harness (J-38826) leads together by fully seating one banana plug into the other. Connect appropriate pigtail adapter to SIR deployment harness. See **Fig. 9**.
2. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION.
3. Place air bag module on ground (preferably outdoors) at least 6 feet away from any people or objects. Stretch SIR deployment harness and pigtail adapter from air bag module to its full length. Place a 12-volt battery near shorted end of SIR deployment harness.
4. Connect air bag module to pigtail adapter on SIR deployment harness. See **Fig. 9**. Ensure area around air bag module is clear of people and objects. Verify that air bag module is resting with trim cover facing up.
5. Separate 2 banana plugs on SIR deployment harness. Connect SIR deployment harness wires to battery. See **Fig. 9**. Air bag module should deploy immediately. If air bag module does not deploy, go to next step. Disconnect SIR deployment harness from battery. Short 2 SIR deployment harness leads together. **DO NOT** touch metal surfaces of air bag module for at least 10 minutes due to heat generated during deployment. Wear gloves and safety glasses when handling deployed air bag module. Wash hands with mild soap and water after handling. Dispose of deployed air bag module like any other part. Inspect pigtail adapter and SIR deployment harness for damage after each use. Repeat deployment procedure for passenger-side air bag, side air bag modules and seat belt pretensioners. Pretensioners should be clamped in vise for off-vehicle deployment.
6. Ensure that SIR deployment harness is disconnected from battery and that 2 banana plugs have been shorted together. Disconnect pigtail adapter from air bag module. Temporarily store air bag modules with trim cover

facing up. Contact manufacturer for proper disposal instructions.



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Fig. 9: Preparing Deployment Harness For Off-Vehicle Deployment
Courtesy of GENERAL MOTORS CORP.

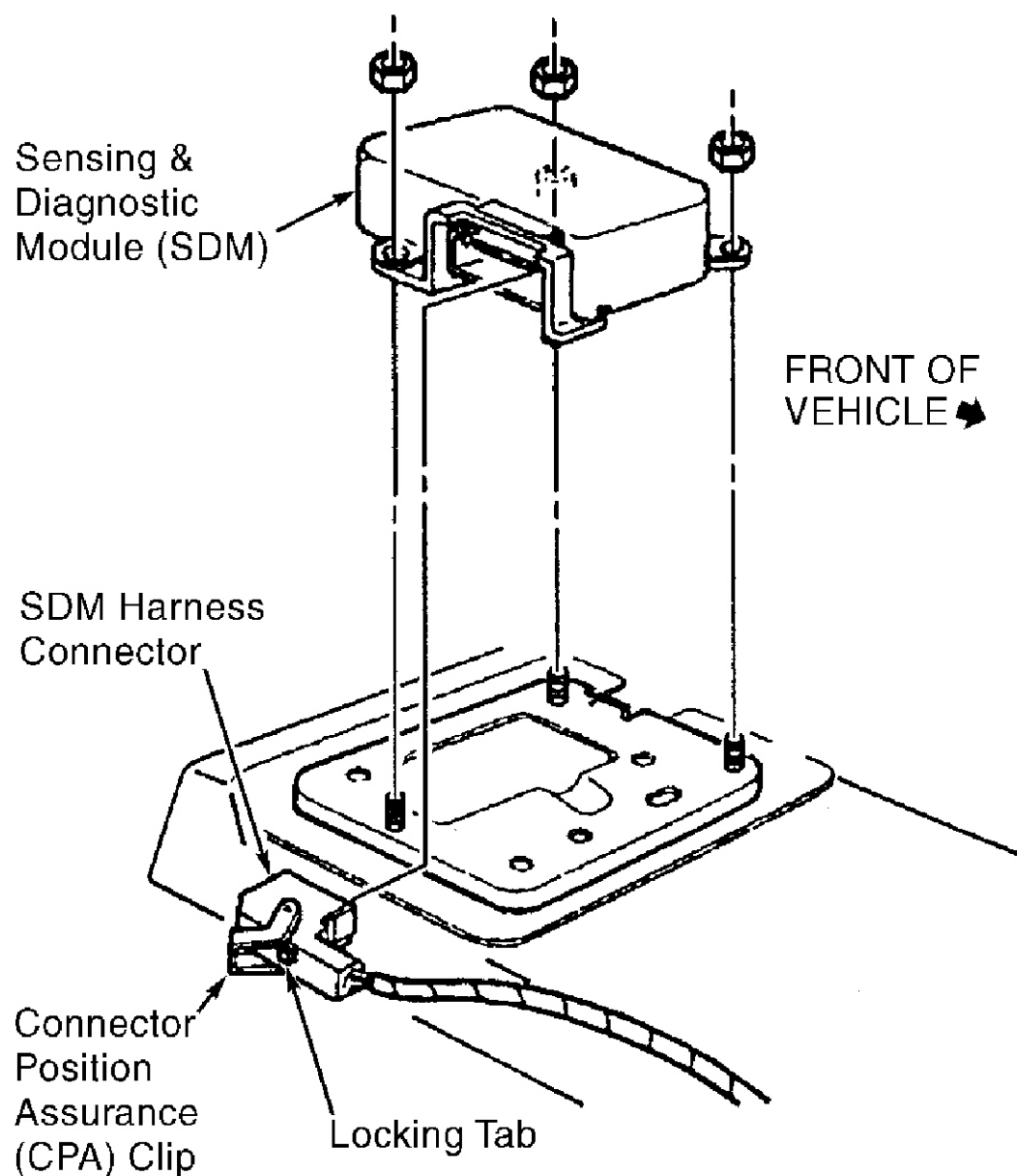
REMOVAL & INSTALLATION

WARNING: Failure to follow service precautions may result in air bag deployment and personal injury. See SERVICE PRECAUTIONS . After component replacement, check system operation. See TESTING - SYSTEM OPERATION CHECK .

SENSING & DIAGNOSTIC MODULE (SDM)

Removal

1. Before proceeding, see SERVICE PRECAUTIONS . Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM .
2. Remove center console. Remove connector position assurance (CPA) clip and disconnect SDM harness connector from SDM. Remove SDM fasteners. See Fig. 10 . Remove SDM.



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Fig. 10: Removing Sensing & Diagnostic Module (SDM)
 Courtesy of GENERAL MOTORS CORP.

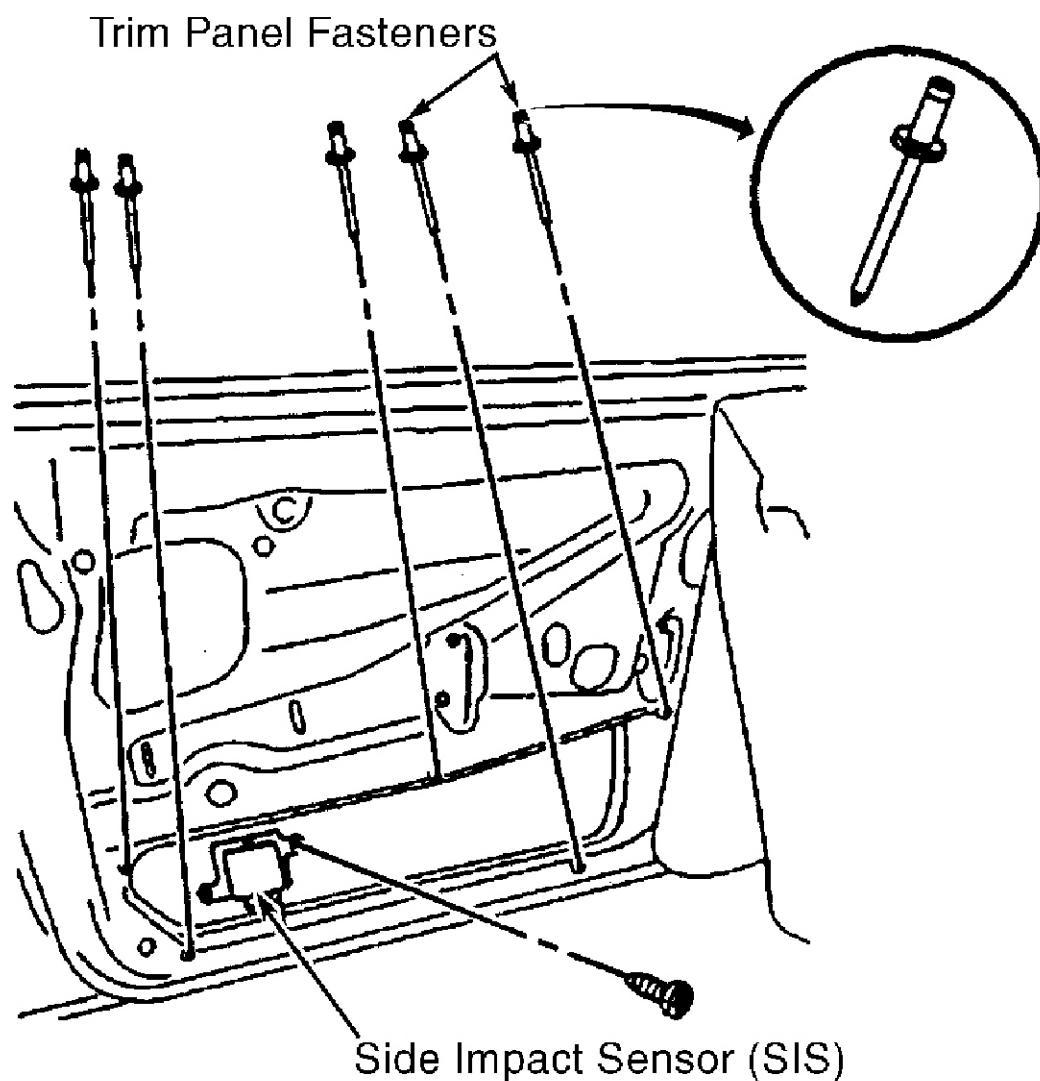
Installation

1. Mount SDM on vehicle, ensuring arrow is pointing toward front of vehicle. Install SDM fasteners. See **Fig. 10**. Tighten to 89 INCH lbs. (10 N.m). Reconnect SDM harness connector and CPA clip.
2. To complete installation, reverse removal procedure. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK**.

SIDE IMPACT SENSORS (SIS)

Removal

1. Before proceeding, see **SERVICE PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove front door trim panel. Remove front door water deflector. Disconnect SIS harness connector. Remove Torx screws. Remove sensor from mounting plate. See **Fig. 11**.



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Fig. 11: Removing Side Impact Sensor (SIS)
 Courtesy of GENERAL MOTORS CORP.

Installation

To install, reverse removal procedure. Tighten screws to 45 INCH lbs. (5 N.m). Install trim panel with new fasteners. See **Fig. 11** . Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK** .

STEERING WHEEL

Removal

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove driver-side air bag module. See **AIR BAG MODULES** . Reposition locking tab on steering wheel nut. Remove steering wheel nut. Note mark on steering shaft and steering wheel to ensure proper alignment during installation. Using Steering Wheel Puller (J-1859-A) and Steering Wheel Puller Legs (J-36541-A), remove steering wheel.

Installation

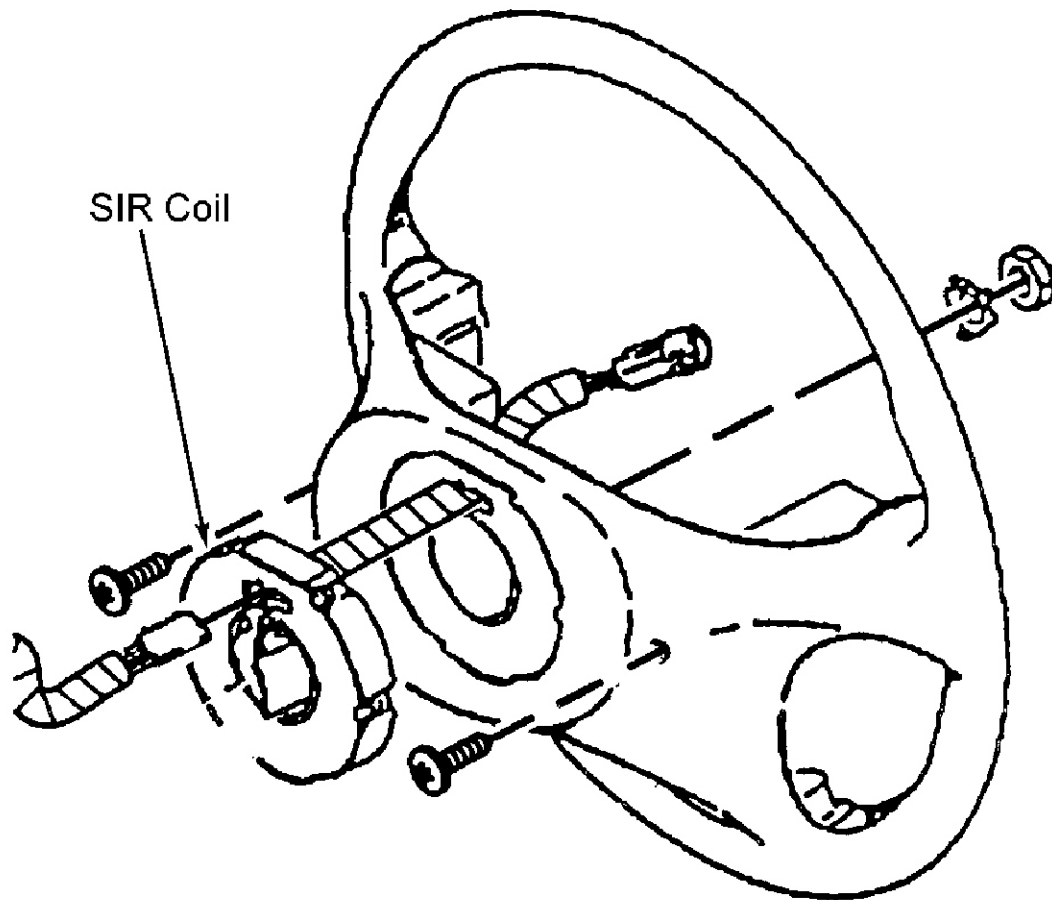
1. To install, feed wiring through steering wheel. Align mark on steering wheel with mark on shaft, then install nut. Tighten nut to 21 ft. lbs. (28 N.m). Secure nut with locking tab. Install driver-side air bag module. See

AIR BAG MODULES .

2. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK** .

SIR COIL ASSEMBLY**Removal**

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Ensure front wheels face straight ahead. Remove driver-side air bag module. See **AIR BAG MODULES** . Remove steering wheel. See **STEERING WHEEL** . Remove upper steering column cover screw caps and screws. Remove upper cover. Remove tilt lever and rubber protective cover from the ignition lock cylinder. Remove lower steering column cover screws and lower cover. Disconnect SIR coil connector and remove SIR coil. See **Fig. 12** .



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Fig. 12: Removing SIR Coil Assembly
Courtesy of GENERAL MOTORS CORP.

Installation

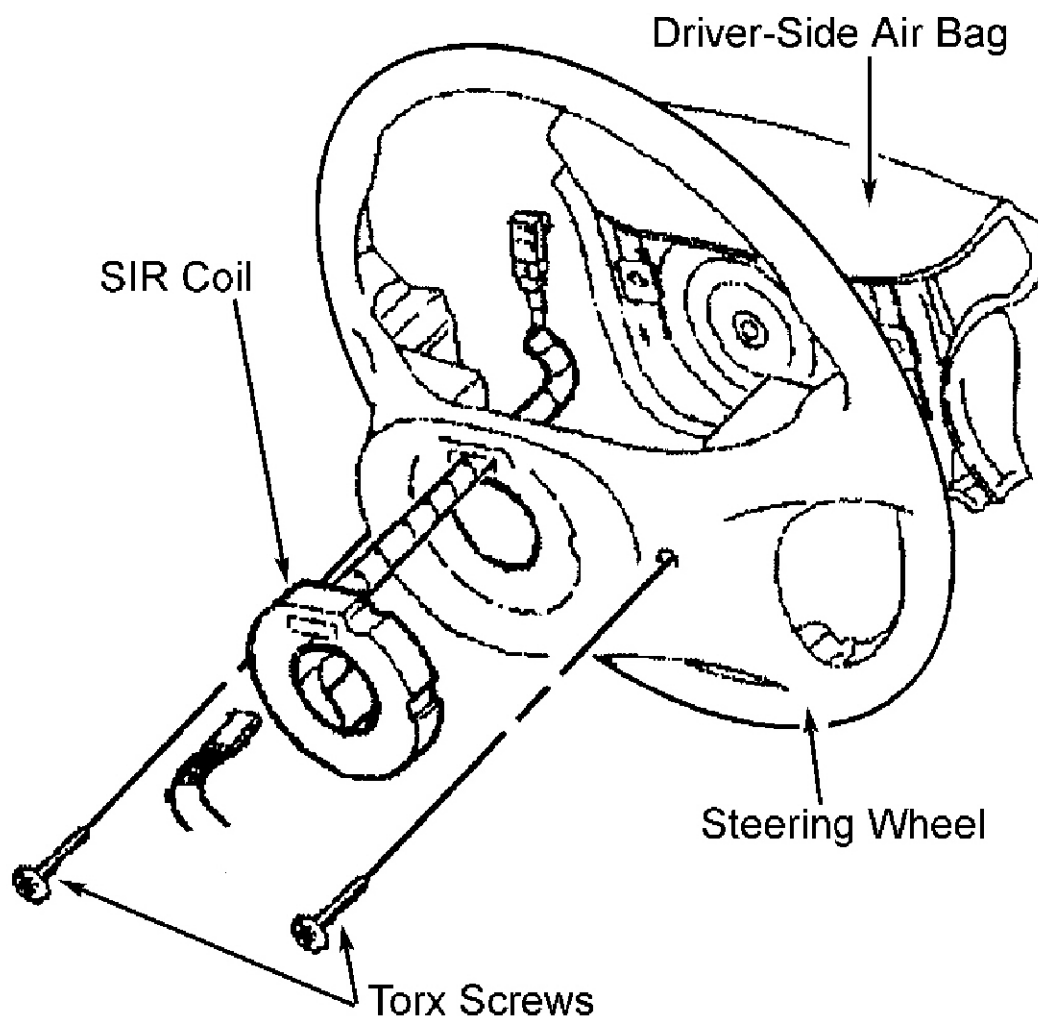
1. Install SIR coil and connect SIR coil connector. Center SIR coil assembly if necessary. See **CENTERING COIL ASSEMBLY** under ADJUSTMENTS. Install lower steering column cover and screws. Install rubber protective cover to the ignition lock cylinder. Install tilt lever and upper column cover. Install screws and screw caps.
2. Install steering wheel. See **STEERING WHEEL** . Install driver-side air bag module. See **AIR BAG MODULES** . Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check

system for proper operation. See **TESTING - SYSTEM OPERATION CHECK**.

AIR BAG MODULES

Removal (Driver-Side)

1. Before proceeding, see **SERVICE PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove screws from back of steering wheel. See **Fig. 13**. Disconnect CPA and SIR coil connector from air bag module. Remove air bag module.



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Fig. 13: Removing Driver-Side Air Bag Module
Courtesy of GENERAL MOTORS CORP.

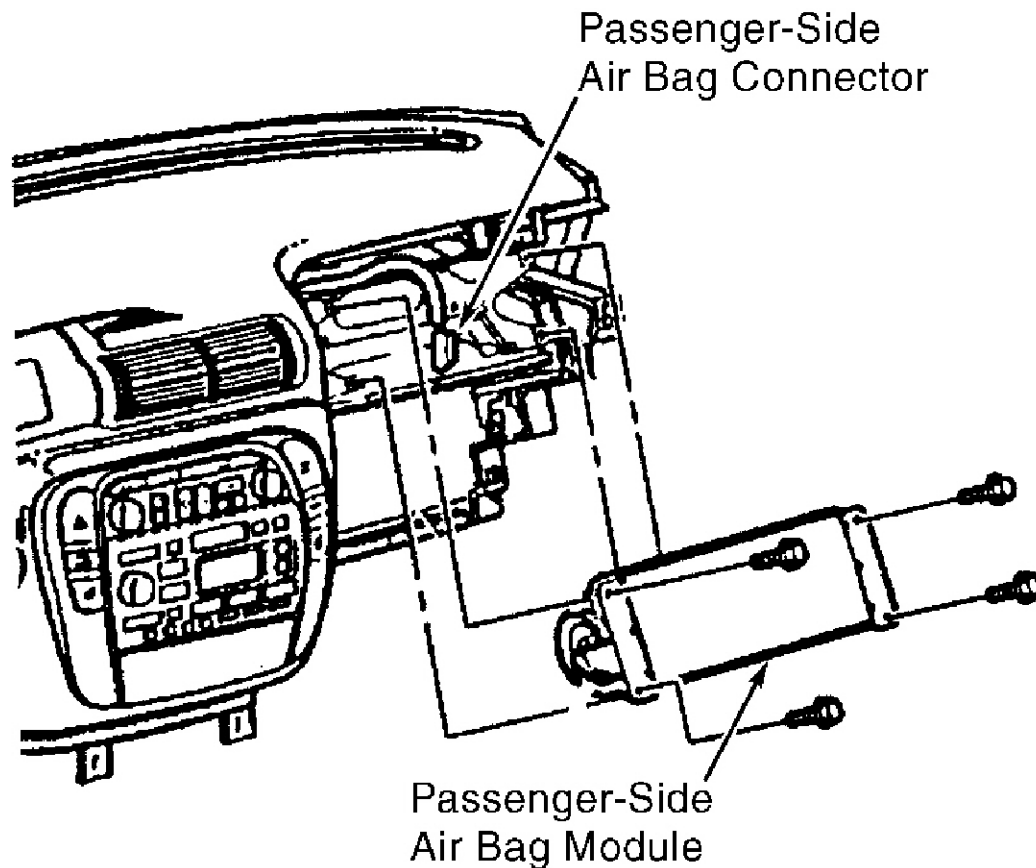
Installation

To install, reverse removal procedure. Tighten screws to 72 INCH lbs. (8 N.m). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK**.

Removal (Passenger-Side)

1. Before proceeding, see **SERVICE PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove air bag module trim cover. Remove air bag module fasteners. Remove Connector Position Assurance

(CPA) clip and disconnect 2-pin air bag module connector. Remove passenger-side air bag module from vehicle. See **Fig. 14** .



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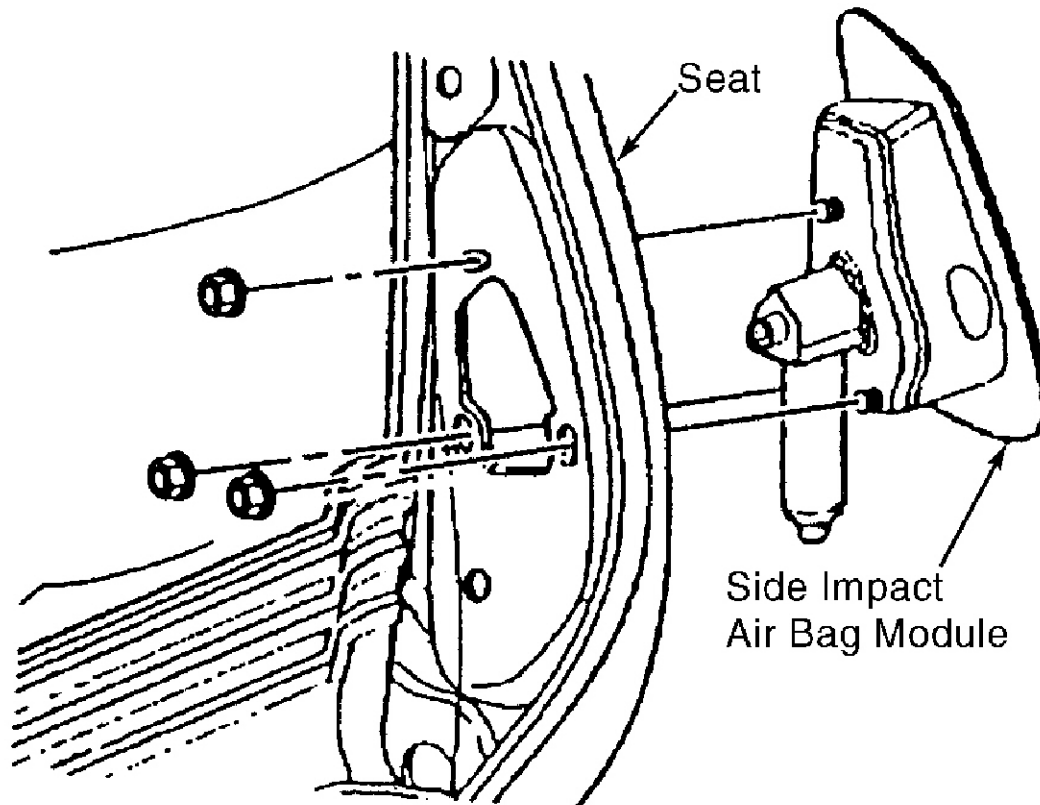
Fig. 14: Removing Passenger-Side Air Bag Module
Courtesy of GENERAL MOTORS CORP.

Installation

To install, reverse removal procedure. Tighten fasteners to 72 INCH lbs. (8 N.m). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK** .

Removal (Side Impact)

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Move seat to full forward position. Remove seatback panel screws and seatback panel. Disconnect air bag harness connector. See **Fig. 15** . Remove nuts from module and remove from seatback.



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Fig. 15: Removing Front Seat Side Air Bag Module
Courtesy of GENERAL MOTORS CORP.

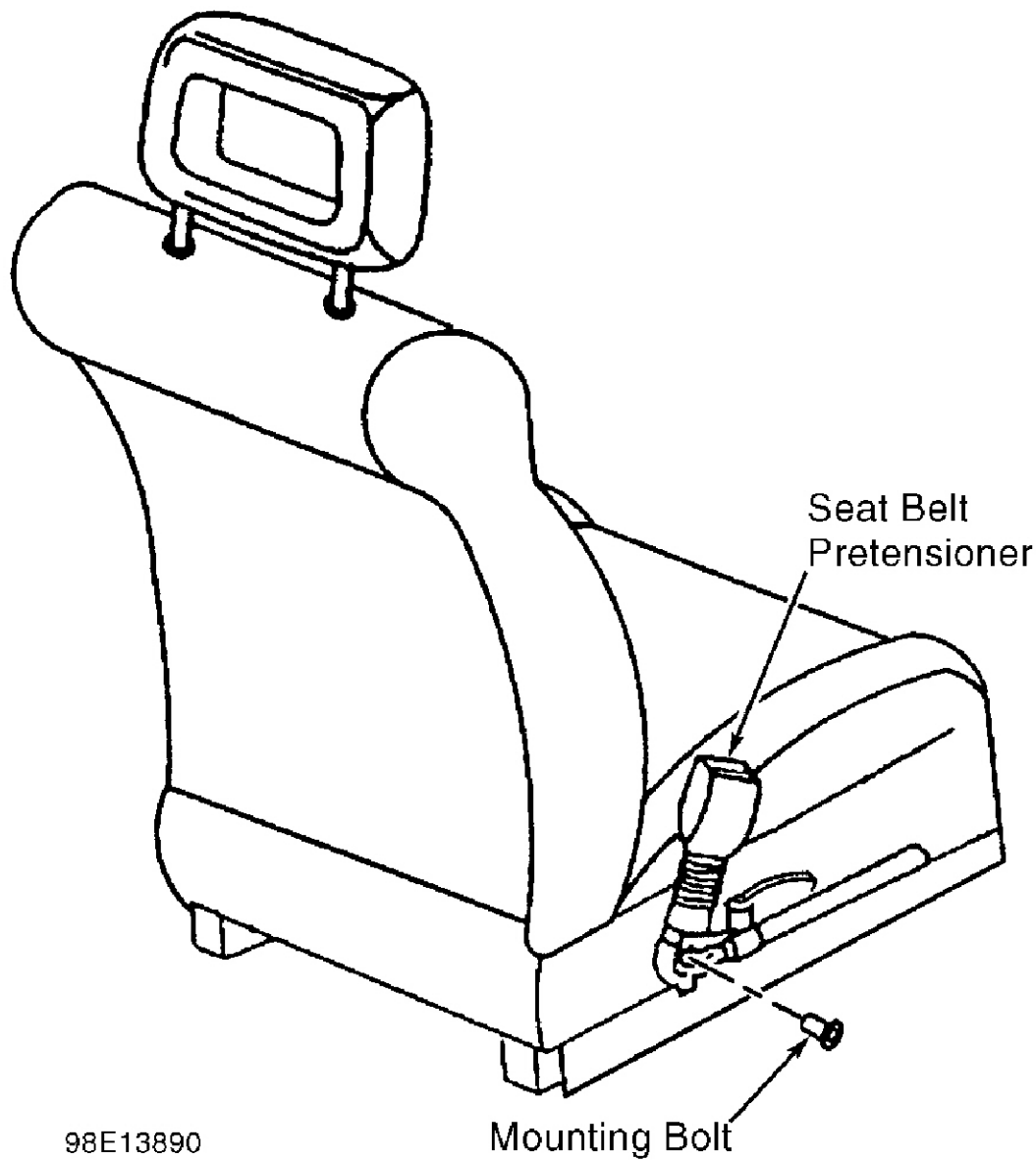
Installation

To install, reverse removal procedure. Tighten air bag mounting nuts to 44 INCH lbs. (5 N.m). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK** .

SEAT BELT PRETENSIONERS

Removal

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove front seat. Disconnect pretensioner connector from pretensioner. Remove mounting bolt and pretensioner. See **Fig. 16** .



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Mounting Bolt

Fig. 16: Removing Seat Belt Pretensioner
 Courtesy of GENERAL MOTORS CORP.

Installation

To install, reverse removal procedure. Tighten bolts to 26 ft. lbs. (35 N.m). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **TESTING - SYSTEM OPERATION CHECK**.

TESTING - SYSTEM OPERATION CHECK

If system is functioning normally, AIR BAG warning light flashes 7 times and then turns off when ignition switch is turned ON. System malfunction is indicated when light does not illuminate at all, light comes on while vehicle is driven, light flashes 7 times and remains on, or light does not flash but remains on when ignition switch is turned ON.

SIR system faults are usually due to a disconnected or loose electrical connector caused by previous service on vehicle. Always check SIR coil connector at base of steering column for loose or damaged wiring.

DIAGNOSIS & TESTING

WARNING: Failure to follow service precautions may result in air bag deployment and

personal injury. See SERVICE PRECAUTIONS . After component replacement, check system operation. See TESTING - SYSTEM OPERATION CHECK .

DIAGNOSTIC TROUBLE CODES (DTCS)

Sensing & Diagnostic Module (SDM) provides a record of DTCs, stored according to type. SDM performs diagnostic monitoring of SIR system electrical components and sets a diagnostic trouble code (DTC) when a malfunction is detected. Current DTCs are stored in SDM and are erased when fault is corrected. Current DTCs can be read using a scan tool such as Tech 2.

SCAN TOOL DIAGNOSTICS

Scan Tool (Tech 2) reads and clears current and history codes. Ensure scan tool contains correct software cartridge for SIR diagnostics. To use scan tool, connect it to DLC connector, plug in power source and turn ignition switch to ON. Follow scan tool manufacturer instructions for communication with SIR system. Scan tool reads serial data from SDM data line output terminal No. 12 to DLC connector terminal No. 12.

DIAGNOSTIC PROCEDURES

Diagnostic procedures are designed to find and repair SIR malfunctions. It is important to use diagnostic charts and follow sequence listed below:

Perform SIR System Diagnostic Check

SIR System Diagnostic Check should always be starting point for any SIR diagnostics. It checks for proper AIR BAG warning light operation and SIR trouble codes using both flash code and scan tool methods.

Refer To Proper Diagnostic Chart

SIR Diagnostic System Check indicates correct chart to diagnose SIR problems. Bypassing procedures may result in extended diagnostic time, incorrect diagnosis and incorrect parts replacement.

Repeat SIR Diagnostic System Check

Performing SIR Diagnostic System Check after all repair or diagnostic procedures ensures that repair has been made correctly and that no other conditions exist.

TESTING - DIAGNOSTIC

NOTE: **Following diagnostic charts are courtesy of General Motors Corp.**

DIAGNOSTIC TROUBLE CODE (DTC) CHART

Trouble Code	Possible Cause
<u>13</u>	Driver Deployment Loop Short To Ground
<u>14</u>	Driver Pretensioner Loop Short To Ground
<u>15</u>	Driver Deployment Loop Short To Voltage
<u>16</u>	Driver Pretensioner Loop Short To Voltage
<u>23</u>	Passenger Deployment Loop Short To Ground
<u>24</u>	Passenger Pretensioner Loop Short To Ground
<u>25</u>	Passenger Deployment Loop Short To Voltage
<u>26</u>	Passenger Pretensioner Loop Short To Voltage
<u>31</u>	Driver Deployment Loop Resistance High

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<u>32</u>	Driver Deployment Loop Resistance Low
<u>33</u>	Passenger Deployment Loop Resistance High
<u>34</u>	Passenger Deployment Loop Resistance Low
<u>35</u>	Driver Pretensioner Loop Resistance High
<u>36</u>	Driver Pretensioner Loop Resistance Low
<u>37</u>	Passenger Pretensioner Loop Resistance High
<u>38</u>	Passenger Pretensioner Loop Resistance Low
<u>43</u>	Warning Light Circuit Short To Voltage
<u>44</u>	Warning Light Circuit Open or Short To Ground
<u>52</u>	SDM Not Configured
<u>53</u>	SDM Configuration Mismatch
<u>55</u>	Internal SDM Failure
<u>56</u>	SDM Not Reusable
<u>65</u>	Passenger-Side Air Bag Deployment Commanded
<u>66</u>	Driver-Side Air Bag Deployment Commanded
<u>67</u>	Pretensioner Only Deployment Commanded
<u>68</u>	Driver Side Impact Air Bag Deployment Commanded
<u>69</u>	Passenger Side Impact Air Bag Deployment Commanded
<u>71</u>	Driver Side Impact Sensor Communications Invalid
<u>73</u>	Driver Side Impact Sensor Short To Voltage
<u>74</u>	Driver Side Impact Sensor Short To Ground
<u>75</u>	Driver Side Impact Air Bag Short To Ground
<u>76</u>	Driver Side Impact Air Bag Short To Voltage
<u>77</u>	Driver Side Impact Air Bag Deployment Loop Resistance High
<u>78</u>	Driver Side Impact Air Bag Deployment Loop Resistance Low
<u>81</u>	Passenger Side Impact Sensor Communications Invalid
<u>83</u>	Passenger Side Impact Sensor Short To Voltage
<u>84</u>	Passenger Side Impact Sensor Short To Ground
<u>85</u>	Passenger Side Impact Air Bag Short To Ground
<u>86</u>	Passenger Side Impact Air Bag Short To Voltage
<u>87</u>	Passenger Side Impact Air Bag Deployment Loop Resistance High
<u>88</u>	Passenger Side Impact Air Bag Deployment Loop Resistance Low

SIR DIAGNOSTIC SYSTEM CHECK

WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic charts. Carefully follow all instructions.

Circuit Description

AIR BAG warning light flashes 7 times to verify operation when SDM recognizes ignition voltage at terminal No. 5 is greater than 9 volts. SDM performs initialization and continuous monitoring tests. SDM sets a current DTC and illuminates AIR BAG warning light when malfunction is detected. SDM clears current DTCs and moves them to history when malfunction no longer detected and/or ignition switch is cycled.

Diagnostic Aids

Diagnose DTCs in order specified. Failure to do so may result in extended diagnostic time, incorrect diagnosis or

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incorrect parts replacement.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 17 and Fig. 18 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

1

AIR BAG warning light should flash 7 times after ignition switch is turned ON.

2

Differentiates warning light stays ON condition from warning light does not come ON condition.

3

AIR BAG warning light should turn OFF after flashing 7 times.

4

Checks for proper operation of serial data line.

6

Identify stored DTCs and whether they are current or history.

7

Checks for proper operation of Serial Data Line and identifies any stored history DTCs.

8

Refers to appropriate DTC Table Diagnostic Aids for diagnosis of history DTCs.

Step	Action	Value(s)	Yes	No
1	Note the AIR BAG warning lamp while turning the ignition switch to the RUN position. Does the AIR BAG warning lamp flash seven times?	—	Go to Step 3	Go to Step 2
2	Does the AIR BAG warning lamp come ON steady?	—	Go to AIR BAG Warning Lamp Comes On Steady	Go to AIR BAG Warning Lamp Does Not Come On
3	Note the AIR BAG warning lamp after it flashed seven times. Does the AIR BAG warning lamp go OFF?	—	Go to Step 7	Go to Step 4
4	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the Data Link Connector. Follow the directions in the instruction manual of the scan tool. 3. Turn the ignition switch to the RUN position. 4. Request the SIR Diagnostic Trouble Code (DTC) display. Is a current DTC displayed?	—	Go to Step 6	Go to Step 5
5	Does the scan tool indicate no data received?	—	Check Scan Tool	Go to Integrity Check

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Fig. 17: SIR Diagnostic System Check (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
6	1. Turn the ignition switch to the OFF position. 2. Record the displayed DTC(s) on the repair order specifying as current or history. 3. When DTC 65 is set, go to <i>DTC 65 Deployment Commanded</i> table. 4. When DTC 66 is set, go to <i>DTC 66 Driver Air Bag Deployment Commanded</i> table. 5. When DTC 67 is set, go to <i>DTC 67 Pretensioner Only Deployment Commanded</i> table. 6. When DTC 68 is set, go to <i>DTC 68 Driver Side Air Bag Deployment Commanded</i> table. 7. When DTC 69 is set, go to <i>DTC 69 Pass. Side Air Bag Deployment Commanded</i> table. 8. Diagnose the remaining current DTC(s) from lowest to highest. 9. When only history DTC(s) exist, refer to Diagnostic Aids for that specific DTC. A history DTC indicates the malfunction that the malfunction is repaired (but DTCs were not cleared) or is intermittent. Was the current DTC diagnosis performed and all current DTC(s) cleared?	—	Go to Step 1	
7	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the Data Link Connector. Follow the directions in the instruction manual of the scan tool. 3. Turn the ignition switch to the RUN position. 4. Request the SIR Diagnostic Trouble Code (DTC) display. Is a history DTC displayed?	—	Go to Step 9	Go to Step 8
8	Does the scan tool indicate no data received?	—	Check Scan Tool	System OK
9	1. Turn the ignition switch to the OFF position. 2. Record the displayed DTCs on the repair order specifying as history. 3. When History DTC 55 is set, go to <i>DTC 55 Internal SDM Failure</i> table, but do not replace the SDM. 4. For all other DTCs, Refer to Diagnostic Aids for that specific DTC. A history DTC indicates the malfunction has been repaired or is intermittent. Has the diagnosis been performed and the DTCs cleared?	—	Go to Step 1	

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Fig. 18: SIR Diagnostic System Check (2 Of 2)
 Courtesy of GENERAL MOTORS CORP.

SDM INTEGRITY CHECK

Circuit Description

AIR BAG warning light flashes 7 times to verify operation when SDM recognizes ignition voltage at terminal No. 5 is greater than 9 volts. SDM performs initialization and continuous monitoring tests. SDM sets a current DTC and illuminates AIR BAG warning light when malfunction is detected. SDM clears current DTCs and moves them to history when malfunction no longer detected and/or ignition switch is cycled.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 19 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

1. Confirms a current malfunction. If no current malfunction is occurring (History DTC set) Diagnostic Aids for appropriate DTC should be referenced. SDM should not be replaced for a History DTC except when directed.

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2. Checks for a malfunction introduced into SIR system during diagnostic process. It is extremely unlikely that a malfunctioning SDM would cause a new malfunction to occur during diagnostic process.
3. When all circuitry outside SDM has been found to operate properly, as indicated by appropriate diagnostic chart, then and only then should SDM be replaced.

Step	Action	Value(s)	Yes	No
1	Were you sent here from a Symptom Table or a Diagnostic Trouble Code Table?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Reconnect all the SIR system components. Ensure all components are properly mounted. 3. Ensure the ignition switch has been OFF for at least 30 seconds. 4. Note the AIR BAG warning lamp while turning the ignition switch to the ON position. Does the AIR BAG warning lamp flash seven times, then go OFF?	—	<i>Go to Step 7</i>	<i>Go to Step 3</i>
3	Use the scan tool to request the SIR Diagnostic Trouble Code display. Is the same symptom or DTC occurring as when the SIR Diagnostic System Check was first performed?	—	<i>Go to Step 4</i>	—
4	1. Clear the SIR Diagnostic Trouble Code. 2. Turn the ignition switch to the OFF position for at least 30 seconds. 3. Note the AIR BAG warning lamp while turning the ignition switch to the ON position. Does the AIR BAG warning lamp flash seven times, then go OFF?	—	System OK	<i>Go to Step 5</i>
5	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 6</i>	—
6	Reconnect all the SIR system components. Ensure all components are properly mounted. Is all the SIR components reconnected and is all the SIR components properly mounted?	—	<i>Go to SIR Diagnostic System Check</i>	—
7	1. The symptom or DTC is no longer occurring. 2. Clear the SIR Diagnostic Trouble Codes. Is the SIR Diagnostic Trouble Codes cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 19: SDM Integrity Check
 Courtesy of GENERAL MOTORS CORP.

AIR BAG WARNING LIGHT COMES ON STEADY

Circuit Description

Starter switch applies system voltage to ignition input, terminal No. 5, when ignition switch is turned ON. Ignition voltage is applied from SDM to AIR BAG warning light which is connected to AIR BAG WARNING INDICATOR terminal No. 6. SDM responds by flashing AIR BAG warning light 7 times. AIR BAG warning light will come on steady if ignition is outside normal voltage range

Diagnostic Aids

SDM harness connector must be properly connected to SDM to disable shorting bar from terminal No. 6 to terminal No. 7 inside SDM harness connector.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 20** and **Fig. 21** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks for sufficient ignition voltage applied to SDM.

3

Checks for excessive ignition voltage applied to SDM.

4

Checks for correct connection of SDM harness connector.

6

Checks if SDM is turning on AIR BAG warning light.

8

Checks if malfunction is short to ground in circuit XB20 or short between circuits XB20 and F108.

14

Checks if malfunction is open in ignition feed circuit.

16

Checks if there is a short to ground in ignition feed circuit.

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Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Connect a scan tool to the data link connector. Follow the directions in the instruction manual of the scan tool. Turn the ignition switch to the ON position. Request the SIR data list display. Is the IGNITION more than the specified value?	9.0 V	<i>Go to Step 3</i>	<i>Go to Step 12</i>
3	<ol style="list-style-type: none"> Set the parking brake. Start the engine. Use the scan tool to read the SIR data list. Is the IGNITION more than the specified value?	16.0 V	<i>Go to Battery is Undercharged or Overcharged in Engine Electrical</i>	<i>Go to Step 4</i>
4	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Wait one minute until the SDM energy reserve capacitors have discharged. Disconnect the negative cable of the battery. Inspect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) harness connector. Is the harness connector properly connected and is the CPA locked in the correct position?	—	<i>Go to Step 6</i>	<i>Go to Step 5</i>
5	<ol style="list-style-type: none"> Properly connect the SDM harness connector to the SDM. Lock the CPA in the correct position. Is the SDM harness connector properly connected to the SDM and is the CPA locked in the correct position?	—	<i>Go to SIR Diagnostic System Check</i>	—
6	<ol style="list-style-type: none"> Disconnect the SDM harness connector CPA. Disconnect the SDM harness connector from the SDM. Insert the <i>J 42113</i> Shorting Bar Tool into the SDM harness connector terminal above terminal 6 and 7. This opens the short circuit bridge between terminals 6 and 7. Turn the ignition switch to the ON position. Does the AIR BAG warning lamp come ON steady?	—	<i>Go to Step 7</i>	<i>Go to Table A</i>
7	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Disconnect the instrument cluster. Measure the resistance from the SDM harness connector terminal 6 to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 8</i>	<i>Go to Step 11</i>
8	<ol style="list-style-type: none"> Disconnect the CKT F108 from ground (G103). Disconnect the instrument cluster. Measure the resistance from the SDM harness connector terminal 6 to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 10</i>	<i>Go to Step 9</i>

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Fig. 20: Air Bag Warning Light Comes On Steady (1 Of 2)
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Step	Action	Value(s)	Yes	No
9	Repair a short to ground condition in CKT XB20. Is the repair complete?	—	<i>Go to Step 19</i>	—
10	Repair a short from CKT XB20 to CKT F108. Carefully inspect CKT F108 for cutting or chafing along its entire length. Is the repair complete?	—	<i>Go to Step 19</i>	—
11	Service the instrument cluster. Is the repair complete?	—	<i>Go to Step 19</i>	—
12	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the ignition switch. 4. Inspect the connection at the ignition switch terminal V. Is the ignition switch terminal V damaged or corroded?	—	<i>Go to Step 13</i>	<i>Go to Step 14</i>
13	Repair the connection at the ignition switch terminal V. Is the repair complete?	—	<i>Go to Step 19</i>	—
14	1. Disconnect the SDM harness connector CPA and disconnect the SDM harness connector from the SDM. 2. Use the <i>J 39200</i> Digital Multimeter to measure the resistance from the ignition switch terminal V to terminal 5 of the SDM harness connector. Is the resistance reading within the specified values?	0–5 Ω	<i>Go to Step 16</i>	<i>Go to Step 15</i>
15	Repair an open circuit or repair a high resistance condition between the ignition switch terminal V and terminal 5 of the SDM harness connector. Is the repair complete?	—	<i>Go to Step 19</i>	—
16	Use the <i>J 39200</i> Digital Multimeter to measure the resistance from the ignition switch terminal V to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 17</i>	<i>Go to Step 18</i>
17	Repair a short to ground condition between the ignition switch terminal V and terminal 5 of the SDM harness connector. Is the repair complete?	—	<i>Go to Step 19</i>	—
18	Replace the ignition switch. Is the replacement complete?	—	<i>Go to Step 19</i>	—
19	Reconnect all the SIR system components. Ensure all components are properly mounted. Is all the SIR components reconnected and is all the SIR components properly mounted?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 21: Air Bag Warning Light Comes On Steady (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

AIR BAG WARNING LIGHT DOES NOT COME ON

Circuit Description

Starter switch applies system voltage to ignition input, terminal No. 5, when ignition switch is turned ON. Ignition voltage is applied from SDM to AIR BAG warning light which is connected to AIR BAG WARNING INDICATOR terminal No. 6. SDM responds by flashing AIR BAG warning light 7 times. AIR BAG warning light will come on steady if ignition is outside normal voltage range

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 22** and **Fig. 23** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks if malfunction is in SDM circuitry or instrument cluster power feed circuitry.

3

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Checks if open is due to bad bulb.

4

Checks for short from instrument cluster power feed circuit to ground.

9

Checks if malfunction is due to short to battery voltage in circuit XB20.

11

Checks if malfunction is due to open in circuit XB20.

Step	Action	Value(s)	Yes	No
1	Were you sent here from a Symptom Table or a Diagnostic Trouble Code Table?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	Note the instrument cluster while turning the ignition switch to ON. Did the ABS indicator come ON for a short time?	—	<i>Go to Step 3</i>	<i>Go to Step 4</i>
3	1. Turn the ignition switch to the OFF position. 2. Remove the instrument cluster. 3. Check for proper connection to the instrument cluster at terminal 13. 4. If OK, remove the air bag bulb. 5. Inspect the air bag bulb. Is the air bag bulb good?	—	<i>Go to Step 4</i>	<i>Go to Step 5</i>
4	Check for an open circuit or a short-to-ground condition in the power feed circuitry from the battery to the instrument cluster. Is the power feed circuitry to the instrument cluster OK?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
5	1. Replace the air bag bulb. 2. Install the instrument cluster. Is the replacement complete and is instrument cluster installed?	—	<i>Go to Step 13</i>	—
6	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the SDM Connector Position Assurance (CPA). 5. Disconnect the SDM harness connector. 6. Inspect the SDM harness connector terminals 6 and 7. Are the SDM harness connector terminals damaged and/or corroded?	—	<i>Go to Step 8</i>	<i>Go to Step 9</i>
7	1. Locate the open circuit or the short-to-ground condition in the power feed circuitry to the instrument cluster. 2. Repair the open circuit or the short-to-ground condition in the power feed circuitry to the instrument cluster. Is the repair complete?	—	<i>Go to Step 13</i>	—
8	Replace the IP harness. Is the replacement complete?	—	<i>Go to Step 13</i>	—

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Fig. 22: Air Bag Warning Light Does Not Come On (1 Of 2)
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Step	Action	Value(s)	Yes	No
9	1. Turn the ignition switch to the ON position. 2. Measure the voltage from terminal 13 of the instrument cluster connector and ground. Is the voltage reading greater than the specified value?	1 V	Go to Step 10	Go to Step 11
10	1. Turn the ignition switch to the OFF position. 2. Repair the short to B+ condition in CKT XB20. Is the repair complete?	—	Go to Step 13	—
11	1. Turn the ignition switch to the OFF position. 2. Zero the J 39200 Digital Multimeter. 3. Use the J 39200 Digital Multimeter to measure the resistance from the instrument cluster connector terminal 13 to the SDM harness connector terminal 6. Is the resistance reading within the specified value?	0-5.0 Ω	Go to Table A	Go to Step 12
12	Repair the open circuit condition in CKT XB20. Is the circuit repair complete?	—	Go to Step 13	—
13	Reconnect all the SIR system components. Ensure all components are properly mounted. Are all the SIR components reconnected and are all the SIR components properly mounted?	—	Go to SIR Diagnostic System Check	—

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Fig. 23: Air Bag Warning Light Does Not Come On (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 13: DRIVER AIR BAG DEPLOYMENT LOOP SHORT TO GROUND

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground are above specified value caused by a short circuit from driver frontal air bag deployment loop to ground.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A driver-side air bag circuit short to ground or short between communication signal return line of left or right SIS can cause intermittent condition. Inspect circuits BM30, B30, XB42 and XM430 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 24 -Fig. 26** . For circuit number and wire color identification, see **WIRING**

DIAGRAMS .

Diagnostic Chart Step References

7

Checks if malfunction is in driver-side air bag.

9

Checks if malfunction is in SIR coil.

11

Checks if malfunction is in circuit BM30.

13

Checks if malfunction is in circuit B30.

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Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharge. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Check for proper connection at terminals 1 and 2 on the SDM harness connector. 	—		
	Are the terminals damaged and/or corroded?		<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	Replace the IP harness. Are the repairs complete?	—	<i>Go to Step 4</i>	—
4	Check for proper connection at terminals 1 and 2 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 15</i>
5	Check for proper connection at terminals 1 and 2 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	<i>Go to Step 15</i>	—
7	<ol style="list-style-type: none"> 1. Disconnect the inflatable restraint steering wheel module. 2. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool STEERING COLUMN connector to the inflatable restraint steering wheel module integral harness connector. 3. Reconnect the SDM harness connector to the SDM. 4. Reconnect the negative battery cable. 5. Turn the ignition switch to the ON position. 6. Use the scan tool to request the SIR diagnostic trouble code display. 	—		
	Is DTC 13 still current?		<i>Go to Step 9</i>	<i>Go to Step 8</i>
8	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Inspect the inflatable restraint steering wheel module integral harness connector for damage. 3. Ensure the nearby wiring is routed correctly. 4. Replace the inflatable restraint steering wheel module. 	—		—
	Are the repairs complete?		<i>Go to Step 15</i>	

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Fig. 24: DTC 13: Driver Air Bag Deployment Loop Short To Ground (1 Of 3)
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Step	Action	Value(s)	Yes	No
9	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. Remove the inflatable restraint steering wheel module coil from the top of the steering column. Use the J 38715-40 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool BASE OF COLUMN connector to the inflatable restraint steering wheel module coil connector at the top of the steering column. Turn the ignition to the ON position. Use the scan tool to request the SIR diagnostic trouble code display. 	—		
	Is DTC 13 still current?		Go to Step 11	Go to Step 10
10	<ol style="list-style-type: none"> Turn the ignition to the OFF position. Remove the inflatable restraint steering wheel module coil. Remove the connecting wires. Inspect the inflatable restraint steering wheel module coil. Inspect the connecting wires. Determine the cause of the damage. Repair the cause of damage. Replace the inflatable restraint steering wheel module coil. 	—		—
	Was the inflatable restraint steering wheel module coil replaced?		Go to Step 15	
11	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Wait one minute until the SDM energy reserve capacitors have discharged. Disconnect the negative battery cable. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Disconnect the J 38715-A SIR Driver/Passenger Load Tool. Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 1 and 2. This opens the short circuit bridge between terminals 1 and 2. Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 1 to terminal 7 (ground). 	OL		
	Is the resistance reading less than the specified value?		Go to Step 12	Go to Step 13

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Fig. 25: DTC 13: Driver Air Bag Deployment Loop Short To Ground (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
12	Repair the short to ground condition in CKT BM30. Is the circuit repair complete?	---	Go to Step 15	—
13	Measure the resistance on the SDM harness connector from terminal 2 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	Go to Step 14	Go to Integrity Check
14	Repair the short to ground condition in CKT B30. Is the circuit repair complete?	—	Go to Step 15	—
15	Reconnect all the SIR system components. Ensure all the components are properly mounted. Are all the SIR components reconnected and are all the SIR components properly mounted?	---	Go to Step 16	—
16	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 26: DTC 13: Driver Air Bag Deployment Loop Short To Ground (1 Of 3)

Courtesy of **GENERAL MOTORS CORP.**

DTC 14: DRIVER PRETENSIONER DEPLOYMENT LOOP SHORT TO GROUND

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground are above specified value, caused by a short circuit from driver pretensioner deployment loop to ground.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A driver-side pretensioner circuit short to ground or short between communication signal return line of left or right SIS can cause intermittent condition. Inspect circuits AM900, AM950, XM901, XM950, XB42 and XM430 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 27** and **Fig. 28** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks for damaged or corroded SDM harness connector.

7

Checks if malfunction is in circuit AM900 or AM950 in SIR wiring harness.

9

Checks if malfunction is in circuit XM901 or XM950 in SIR wiring harness.

11

Checks if malfunction is in circuit AM900 in driver pretensioner wiring harness.

12

Checks if malfunction is in circuit XM901 in driver pretensioner wiring harness.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-driver seat connector seat connector C315 from the 8-way driver seat connector located under the LH front seat track cover. 5. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 6. Check for proper connection at terminals 8 and 9 on the SDM harness connector. Are the terminals damaged or corroded?	—	Go to Step 3	Go to Step 5
3	Replace the body harness. Are the repairs complete?	—	Go to Step 4	—
4	Check for proper connection at terminal 8 and terminal 9 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 6	Go to Step 14
5	Check for proper connection at terminal 8 and terminal 9 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 6	Go to Step 7
6	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	Go to Step 14	—
7	1. Reconnect the negative battery cable. 2. Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 8 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	Go to Step 8	Go to Step 9
8	Repair the short to ground condition in CKT AM900 or CKT AM950 between the 8-way body harness-to-driver seat connector C315 and the SDM harness connector. Is the repair complete?	—	Go to Step 14	—
9	Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 9 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	Go to Step 10	Go to Step 11
10	Repair the short to ground condition in CKT XM901 or CKT XM950 between the 8-way body harness-to-driver seat connector C315 and the SDM harness connector. Is the repair complete?	—	Go to Step 14	—

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Fig. 27: DTC 14: Driver Pretensioner Deployment Loop Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
11	1. Remove the driver seat from the vehicle. 2. Disconnect the driver pretensioner orange 2-way integral harness connector. 3. Place the driver seat in it's proper position. 4. Connect the driver seat harness connectors. 5. Use the <i>J 39200</i> Digital Multimeter to measure the resistance from the driver pretensioner orange 2-way integral harness connector terminal 1 to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 12</i>	<i>Go to Step 13</i>
12	Use the <i>J 39200</i> Digital Multimeter to measure the resistance from the driver pretensioner orange 2-way integral harness connector terminal 2 to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 13</i>	<i>Go to Integrity Check</i>
13	1. Inspect the driver seat belt side buckle pretensioner seat harness for damage, cutting or chafing. 2. Replace the Driver Seat Belt Side Buckle Pretensioner. Are the repairs complete?	—	<i>Go to Step 13</i>	—
14	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	<i>Go to Step 15</i>	—
15	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes clear?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 28: DTC 14: Driver Pretensioner Deployment Loop Short To Ground (2 Of 2)
 Courtesy of GENERAL MOTORS CORP.

DTC 15: DRIVER AIR BAG DEPLOYMENT LOOP SHORT TO VOLTAGE

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground are above specified value, caused by a short circuit from driver frontal air bag deployment loop to VOLTAGE.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A short to voltage in driver-side air bag module circuit or short circuit between communication signal line of left or right SIS can set this DTC. Inspect circuits BM30 and B30 for cutting or chafing. If DTCs 15 and 73 are set, also inspect circuit B41. If DTCs 15 and 83 are set, also inspect circuit M44.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 29 -Fig. 31 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Checks if malfunction is in driver-side air bag.

4

Checks if malfunction is in SIR coil.

11

Checks if malfunction is in circuit BM30.

13

Checks if malfunction is in circuit B30.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint steering wheel module. 5. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool STEERING COLUMN connector to the inflatable restraint steering wheel module integral harness connector. 6. Reconnect the negative battery cable. 7. Turn the ignition switch to the ON position. 8. Use the scan tool to request the SIR diagnostic trouble code display. 	—		
	Is DTC 15 still current?		<i>Go to Step 4</i>	<i>Go to Step 3</i>
3	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Inspect the inflatable restraint steering wheel module integral harness connector for damage. 3. Ensure the nearby wiring is routed correctly. 4. Replace the inflatable restraint steering wheel module. 	—		—
	Are the repairs complete?		<i>Go to Step 15</i>	
4	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Remove the inflatable restraint steering wheel module coil from the top of the steering column. 5. Use the J 38715-40 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool BASE OF COLUMN connector to the inflatable restraint steering wheel module coil connector at the top of the steering column. 6. Turn the ignition switch to the ON position. 7. Use the scan tool to request the SIR diagnostic trouble code display. 	—		
	Is DTC 15 still current?		<i>Go to Step 6</i>	<i>Go to Step 5</i>

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Fig. 29: DTC 15: Driver Air Bag Deployment Loop Short To Voltage (1 Of 3)
Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
5	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Remove the inflatable restraint steering wheel module coil. 3. Remove the connecting wires. 4. Inspect the inflatable restraint steering wheel module coil for damage. 5. Inspect the connecting wires for damage. 6. Determine the cause of damage. 7. Repair the cause of the damage. 8. Replace the inflatable restraint steering wheel module coil. <p>Are the repairs complete?</p>	—	Go to Step 15	—
6	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Check for proper connection at terminals 1 and 2 on the SDM harness connector. <p>Are the terminals damaged or corroded?</p>	—	Go to Step 7	Go to Step 9
7	<p>Replace the IP harness.</p> <p>Are the repairs complete?</p>	---	Go to Step 8	—
8	<p>Check for proper connection at terminals 1 and 2 on the SDM.</p> <p>Are the terminals damaged or corroded?</p>	—	Go to Step 10	Go to Step 15
9	<p>Check for proper connection at terminals 1 and 2 on the SDM.</p> <p>Are the terminals damaged or corroded?</p>		Go to Step 10	Go to Step 11
10	<p>Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM).</p> <p>Are the repairs complete?</p>	—	Go to Step 15	—
11	<ol style="list-style-type: none"> 1. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 2. Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 1 and 2. This opens the short circuit bridge between terminals 1 and 2. 3. Reconnect the negative battery cable. 4. Turn the ignition switch to the ON position. 5. Use the J 39200 Digital Multimeter to measure the voltage on the SDM harness connector from terminal 1 to terminal 7 (ground). <p>Is the measured voltage less than the specified value?</p>	1 V	Go to Integrity Check	Go to Step 12

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Fig. 30: DTC 15: Driver Air Bag Deployment Loop Short To Voltage (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
12	1. Turn the ignition switch to the OFF position. 2. Repair a short to B+ condition in CKT BM30. Is the repair complete?	---	Go to Step 15	---
13	Measure the voltage on the SDM harness connector from terminal 2 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Integrity Check	Go to Step 14
14	1. Turn the ignition switch to the OFF position. 2. Repair a short to B+ condition in CKT B30. Is the repair complete?	---	Go to Step 15	---
15	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	---	Go to Step 16	---
16	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	---	Go to SIR Diagnostic System Check	---

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Fig. 31: DTC 15: Driver Air Bag Deployment Loop Short To Voltage (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC 16: DRIVER PRETENSIONER DEPLOYMENT LOOP SHORT TO VOLTAGE

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground are above specified value, caused by a short circuit from driver pretensioner deployment loop to VOLTAGE.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A short to voltage in driver-side pretensioner circuit or short between communication signal line of left or right SIS can set this DTC. Inspect circuits AM900, AM950, XM901 and XM950 for cutting or chafing. If DTCs 16 and 73 are set, also inspect circuit B41. If DTCs 15 and 83 are set, also inspect circuit M44.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 32** and **Fig. 33**. For circuit number and wire color identification, see **WIRING DIAGRAMS**.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

2

Checks for damaged or corroded SDM harness connector.

7

Checks if malfunction is in circuits AM900 or AM950 in SIR wiring harness.

9

Checks if malfunction is in circuit XM901 or XM950 in SIR wiring harness.

11

Checks if malfunction is in circuit AM900 in driver pretensioner wiring harness.

12

Checks if malfunction is in circuit XM901 in driver pretensioner wiring harness.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-driver seat connector seat connector C315 from the 8-way driver seat connector located under the LH front seat track cover. 5. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 6. Check for proper connection at terminals 8 and 9 on the SDM harness connector. Are the terminals damaged or corroded?	—	Go to Step 3	Go to Step 5
3	Replace the IP harness. Are the repairs complete?	—	Go to Step 4	—
4	Check for proper connection at terminal 8 and terminal 9 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 6	Go to Step 14
5	Check for proper connection at terminal 8 and terminal 9 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 6	Go to Step 7
6	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	Go to Step 14	—
7	1. Reconnect the negative battery cable. 2. Turn the ignition switch to the ON position. 3. Use the J 39200 Digital Multimeter to measure the voltage on the SDM harness connector from terminal 8 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Step 9	Go to Step 8
8	Repair the short to B+ condition in CKT AM900 or CKT AM950 between the 8-way body harness-to-driver seat connector C315 and the SDM harness connector. Is the repair complete?	—	Go to Step 14	—

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Fig. 32: DTC 16: Driver Pretensioner Deployment Loop Short To Voltage (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	Use the J 39200 Digital Multimeter to measure the voltage on the SDM harness connector from terminal 9 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Step 10	Go to Step 11
10	Repair the short to B+ condition in CKT XM901 or XM950 between the 8-way body harness-to-driver seat connector C315 and the SDM harness connector. Is the repair complete?	—	Go to Step 14	—
11	1. Remove the driver seat from the vehicle. 2. Disconnect the driver pretensioner orange 2-way integral harness connector 3. Place the driver seat in it's proper position. 4. Connect the driver seat harness connectors. 5. Reconnect the negative battery cable. 6. Turn the ignition switch to the ON position. 7. Use the J 39200 Digital Multimeter to measure the voltage on the driver pretensioner orange 2-way integral harness connector terminal 1 to ground. Is the measured voltage less than the specified value?	1 V	Go to Step 12	Go to Step 13
12	Use the J 39200 Digital Multimeter to measure the voltage on the driver pretensioner orange 2-way integral harness connector terminal 2 to ground. Is the measured voltage less than the specified value?	1 V	Go to Step 13	Go to Integrity Check
13	1. Inspect the driver seat belt side buckle pretensioner seat harness for damage, cutting or chafing. 2. Replace the Driver Seat Belt Side Buckle Pretensioner. Are the repairs complete?	—	Go to Step 13	—
14	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	Go to Step 15	—
15	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes clear?	—	Go to SIR Diagnostic System Check	—

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Fig. 33: DTC 16: Driver Pretensioner Deployment Loop Short To Voltage (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 23: PASSENGER AIR BAG DEPLOYMENT LOOP SHORT TO GROUND

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground are above specified value, caused by a short circuit from passenger frontal air bag deployment loop to ground.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist. History DTC will set. History DTC may

be cleared using scan tool.

Diagnostic Aids

A passenger-side air bag circuit short to ground between communication signal return line of left or right SIS can cause intermittent condition. Inspect circuits BA10, BP10, XB42 and XM430 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 34 and Fig. 35 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

7

Checks if malfunction is in passenger-side air bag.

9

Checks if malfunction is in circuit BA10.

11

Checks if malfunction is in circuit BP10.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	---	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Check for proper connection at terminals 3 and 4 on the SDM harness connector. Are the terminals damaged and/or corroded?	---	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	Replace the IP harness. Are the repairs complete?	---	<i>Go to Step 4</i>	---
4	Check for proper connection at terminals 3 and 4 on the SDM. Are the terminals damaged or corroded?	---	<i>Go to Step 6</i>	<i>Go to Step 13</i>
5	Check for proper connection at terminals 3 and 4 on the SDM. Are the terminals damaged or corroded?	---	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	---	<i>Go to Step 13</i>	---
7	1. Disconnect the inflatable restraint IP module. 2. Use the J 38715-55 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool PASSENGER INFLATOR connector to the inflatable restraint IP module harness connector. 3. Reconnect the SDM harness connector to the SDM. 4. Reconnect the negative battery cable. 5. Turn the ignition switch to the ON position. 6. Use the scan tool to request the SIR diagnostic trouble code display. Is DTC 23 still current?	---	<i>Go to Step 9</i>	<i>Go to Step 8</i>
8	1. Turn the ignition switch to the OFF position. 2. Inspect the inflatable restraint IP module pigtail for damage. 3. Ensure the pigtail and the nearby wiring are routed correctly. 4. Replace the inflatable restraint IP module. Is the replacement complete?	---	<i>Go to Step 13</i>	---

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Fig. 34: DTC 23: Passenger Air Bag Deployment Loop Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the SDM. 5. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 6. Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 3 and 4. This opens the short circuit bridge between terminals 3 and 4. 7. Use the J 39200 to measure the resistance on the SDM harness connector from terminal 3 to terminal 7 (ground). <p>Is the resistance reading less than the specified value?</p>	OL	Go to Step 10	Go to Step 11
10	<p>Repair the short to ground condition in CKT BA10.</p> <p>Is the repair complete?</p>	—	Go to Step 13	—
11	<p>Measure the resistance on the SDM harness connector from terminal 4 to terminal 7 (ground).</p> <p>Is the resistance reading less than the specified value?</p>	OL	Go to Step 12	Go to Integrity Check
12	<p>Repair the short to ground condition in CKT BP10.</p> <p>Is the repair complete?</p>	—	Go to Step 13	—
13	<p>Reconnect all the SIR system components. Ensure that all the SIR system components are properly mounted.</p> <p>Are all the SIR system components reconnected and are all the SIR system components properly mounted?</p>	—	Go to Step 14	—
14	<p>Clear the SIR diagnostic trouble codes.</p> <p>Are the SIR diagnostic trouble codes cleared?</p>	—	Go to SIR Diagnostic System Check	—

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Fig. 35: DTC 23: Passenger Air Bag Deployment Loop Short To Ground (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 24: PASSENGER PRETENSIONER DEPLOYMENT LOOP SHORT TO GROUND

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground are above specified value caused by a short circuit from passenger pretensioner deployment loop to ground.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A passenger-side pretensioner circuit short to ground between communication signal return line of left or right SIS can cause intermittent condition. Inspect circuits AB900, AB950, XB901, XB950, XB42 and XM430 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 36 and Fig. 37 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Checks for damaged or corroded SDM harness connector.

7

Checks if malfunction is in circuits AB900 or AB950 in SIR wiring harness.

9

Checks if malfunction is in circuits XB901 or XB950 in SIR wiring harness.

11

Checks if malfunction is in circuit AB900 in pretensioner seat wiring harness.

12

Checks if malfunction is in circuit XB901 in pretensioner seat wiring harness.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	---	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-passenger seat connector seat connector C316 from the 8-way passenger seat connector located under the RH front seat track cover. 5. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 6. Check for proper connection at terminals 15 and 45 on the SDM harness connector. Are the terminals damaged or corroded?	---	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	Replace the IP harness. Are the repairs complete?	---	<i>Go to Step 4</i>	---
4	Check for proper connection at terminal 15 and terminal 45 on the SDM. Are the terminals damaged or corroded?	---	<i>Go to Step 6</i>	<i>Go to Step 14</i>
5	Check for proper connection at terminal 15 and terminal 45 on the SDM. Are the terminals damaged or corroded?	---	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	---	<i>Go to Step 14</i>	---
7	Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 45 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	<i>Go to Step 8</i>	<i>Go to Step 9</i>
8	Repair the short to ground condition in CKT AB900 or CKT AB950 between the 8-way body harness-to-passenger seat connector C316 and the SDM harness connector. Is the repair complete?	---	<i>Go to Step 14</i>	---
9	Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 15 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	<i>Go to Step 10</i>	<i>Go to Step 11</i>

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Fig. 36: DTC 24: Passenger Pretensioner Deployment Loop Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
10	Repair the short to ground condition in CKT XB901 or XB950 between the 8-way body harness-to-passenger seat connector C316 and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 14</i>	—
11	1. Remove the front passenger seat from the vehicle. 2. Disconnect the passenger pretensioner orange 2-way integral harness connector 3. Place the front passenger seat in it's proper position. 4. Connect the front passenger seat harness connectors. 5. Use the J 39200 Digital Multimeter to measure the resistance from the passenger pretensioner orange 2-way integral harness connector terminal 1 to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 13</i>	<i>Go to Step 12</i>
12	Use the J 39200 Digital Multimeter to measure the resistance from the passenger pretensioner orange 2-way integral harness connector terminal 2 to ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 13</i>	<i>Go to Integrity Check</i>
13	1. Inspect the passenger seat belt side buckle pretensioner seat harness for damage, cutting or chafing. 2. Replace the Passenger Seat Belt Side Buckle Pretensioner. Are the repairs complete?	OL	<i>Go to Step 14</i>	—
14	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	<i>Go to Step 15</i>	—
15	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes clear?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 37: DTC 24: Passenger Pretensioner Deployment Loop Short To Ground (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 25: PASSENGER AIR BAG DEPLOYMENT LOOP SHORT TO VOLTAGE

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition within normal voltage range and measured leakage currents to ground are above specified value, caused by a short circuit from passenger frontal air bag deployment loop to system voltage.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Diagnostic Aids

Short to voltage in passenger-side air bag module circuit or short circuit between communication signal line of left or right SIS can set this DTC. Inspect circuits BA10 and BP10 for cutting or chafing. If DTCs 25 and 73 are set, also inspect circuit B41. If DTCs 25 and 83 are set, inspect circuit M44.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 38 and Fig. 39 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

7

Checks if malfunction is in passenger-side air bag.

9

Checks if malfunction is in circuit BA10.

11

Checks if malfunction is in circuit BP10.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Check for proper connection at terminals 3 and 4 on the SDM harness connector. <p>Are the terminals damaged and/or corroded?</p>	—	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	<p>Replace the IP harness.</p> <p>Are the repairs complete?</p>	—	<i>Go to Step 4</i>	—
4	<p>Check for proper connection at terminals 3 and 4 on the SDM.</p> <p>Are the terminals damaged or corroded?</p>	—	<i>Go to Step 6</i>	<i>Go to Step 13</i>
5	<p>Check for proper connection at terminals 3 and 4 on the SDM.</p> <p>Are the terminals damaged or corroded?</p>	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	<p>Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM).</p> <p>Are the repairs complete?</p>	—	<i>Go to Step 13</i>	—
7	<ol style="list-style-type: none"> 1. Disconnect the inflatable restraint IP module. 2. Use the J 38715-55 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool PASSENGER INFLATOR connector to the inflatable restraint IP module harness connector. 3. Reconnect the SDM harness connector to the SDM. 4. Reconnect the negative battery cable. 5. Turn the ignition switch to the ON position. 6. Use the scan tool to request the SIR diagnostic trouble code display. <p>Is DTC 25 still current?</p>	—	<i>Go to Step 9</i>	<i>Go to Step 8</i>
8	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Inspect the inflatable restraint IP module pigtail for damage. 3. Ensure the pigtail and the nearby wiring are routed correctly. 4. Replace the inflatable restraint IP module. <p>Is the replacement complete?</p>	—	<i>Go to Step 13</i>	—

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Fig. 38: DTC 25: Passenger Air Bag Deployment Loop Short To Voltage (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the SDM. 5. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 6. Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 3 and 4. This opens the short circuit bridge between terminals 3 and 4. 7. Reconnect the negative battery cable. 8. Turn the ignition switch to the ON position. 9. Use the J 39200 to measure the voltage on the SDM harness connector from terminal 3 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Step 11	Go to Step 10
10	1. Turn the ignition switch to the OFF position. 2. Repair the short to voltage condition in CKT BA10. Is the repair complete?	—	Go to Step 13	—
11	Measure the voltage on the SDM harness connector from terminal 4 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to AIR BAG Warning Lamp Does Not Come On	Go to Step 12
12	1. Turn the ignition switch to the OFF position. 2. Repair the short to voltage condition in CKT BP10. Is the repair complete?	—	Go to Step 13	—
13	Reconnect all the SIR system components. Ensure that all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	Go to Step 14	—
14	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 39: DTC 25: Passenger Air Bag Deployment Loop Short To Voltage (2 Of 2)
 Courtesy of GENERAL MOTORS CORP.

DTC 26: PASSENGER PRETENSIONER DEPLOYMENT LOOP SHORT TO VOLTAGE

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to system voltage are above specified value caused by a short circuit from passenger pretensioner deployment loop to system voltage.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A short to voltage in passenger-side pretensioner circuit or short circuit between communication signal line of left or right SIS can set this DTC. Inspect circuits AB900, AB950, XB901 and XB950 for cutting or chafing. If DTCs 26 and 73 are set, also inspect circuit B41. If DTCs 26 and 83 are set, also inspect circuit M44.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 40 and Fig. 41 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References**2**

Checks for damaged or corroded SDM harness connector.

7

Checks if malfunction is in circuits AB900 or AB950 in SIR wiring harness.

9

Checks if malfunction is in circuit XB901 or XB950 in SIR wiring harness.

11

Checks if malfunction is in circuit AB900 in passenger seat wiring harness.

12

Checks if malfunction is in circuit XB901 in passenger seat wiring harness.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-passenger seat connector seat connector C316 from the 8-way passenger seat connector located under the RH front seat track cover. 5. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 6. Check for proper connection at terminals 15 and 45 on the SDM harness connector. <p>Are the terminals damaged or corroded?</p>	—	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	<p>Replace the IP harness.</p> <p>Are the repairs complete?</p>	—	<i>Go to Step 4</i>	—
4	<p>Check for proper connection at terminal 15 and terminal 45 on the SDM.</p> <p>Are the terminals damaged or corroded?</p>	—	<i>Go to Step 6</i>	<i>Go to Step 14</i>
5	<p>Check for proper connection at terminal 15 and terminal 45 on the SDM.</p> <p>Are the terminals damaged or corroded?</p>	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	<p>Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM).</p> <p>Are the repairs complete?</p>	—	<i>Go to Step 14</i>	—
7	<ol style="list-style-type: none"> 1. Reconnect the negative battery cable. 2. Turn the ignition switch to the ON position. 3. Use the J 39200 Digital Multimeter to measure the voltage on the SDM harness connector from terminal 45 to terminal 7 (ground). <p>Is the measured voltage less than the specified value?</p>	1 V	<i>Go to Step 9</i>	<i>Go to Step 8</i>
8	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Repair the short to voltage condition in CKT AB900 or CKT AB950 between the 8-way body harness-to-passenger seat connector C316 and the SDM harness connector. <p>Is the repair complete?</p>	—	<i>Go to Step 14</i>	—

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Fig. 40: DTC 26: Passenger Pretensioner Deployment Loop Short To Voltage (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	Use the <i>J 39200</i> Digital Multimeter to measure the voltage on the SDM harness connector from terminal 15 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Step 11	Go to Step 10
10	1. Turn the ignition switch to the OFF position. 2. Repair the short to voltage condition in CKT XB901 or CKT XB950 between the 8-way body harness-to-passenger seat connector C316 and the SDM harness connector. Is the repair complete?	—	Go to Step 14	—
11	1. Turn the ignition switch to the OFF position. 2. Remove the front passenger seat from the vehicle. 3. Disconnect the passenger pretensioner orange 2-way integral harness connector. 4. Place the front passenger seat in it's proper position. 5. Connect the front passenger seat harness connectors. 6. Turn the ignition switch to the ON position. 7. Use the <i>J 39200</i> Digital Multimeter to measure the voltage from the passenger pretensioner orange 2-way integral harness connector terminal 1 to ground. Is the measured less than the specified value?	1 V	Go to Step 12	Go to Step 13
12	Use the <i>J 39200</i> Digital Multimeter to measure the voltage on the passenger pretensioner orange 2-way integral harness connector terminal 2 to ground. Is the measured voltage less than the specified value?	1 V	Go to Integrity Check	Go to Step 13
13	1. Turn the ignition switch OFF. 2. Inspect the passenger seat belt side buckle pretensioner seat harness for damage, cutting or chafing. 3. Replace the Passenger Seat Belt Side Buckle Pretensioner. Are the repairs complete?	—	Go to Step 14	—
14	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	Go to Step 15	—
15	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes clear?	—	Go to SIR Diagnostic System Check	—

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Fig. 41: DTC 26: Passenger Pretensioner Deployment Loop Short To Voltage (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 31: DRIVER AIR BAG DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. During RESISTANCE MEASUREMENT TEST, SDM measures voltage difference between DRIVER FRONTAL HIGH and DRIVER FRONTAL LOW. SDM uses measured voltage to calculate resistance of driver deployment loop. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when combined resistance of the driver-side air bag module, SIR coil assembly, harness wiring circuits BM30 and B30 and connector terminal contact is more than 6 ohms. RESISTANCE MEASUREMENT test checks for this malfunction. The test occurs once each ignition cycle when IGNITION 1 voltage is within normal range.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

DTC clears when resistance of driver deployment loop is less than 6 ohms and a scan tool CLEAR CODES command is issued.

Diagnostic Aids

An intermittent condition is likely to be caused by poor connection at terminals No. 1 or 2 of SIR coil integral 2-pin connector, terminals No. 7 or 8 of driver-side air bag module coil connector, SDM terminals No. 1 or 2, or a poor wire to terminal connection in circuits BM30 or B30.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 42 -Fig. 44 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

3

Checks if malfunction is in driver-side air bag.

5

Checks if malfunction is in SIR coil.

12

Checks if malfunction is in circuit BM30.

14

Checks if malfunction is in circuit B30.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?		Go to Step 2	Go to SIR Diagnostic System Check
2	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the driver frontal air bag deployment loop resistance DRIVER AIR BAG RES. Has DRIVER AIR BAG RES. been read and recorded on the repair order?	—	Go to Step 3	—
3	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharge. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint steering wheel module. 5. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool STEERING COLUMN connector to the inflatable restraint steering wheel module integral harness connector. 6. Reconnect the negative battery cable. 7. Turn the ignition switch to the ON position. 8. Use the scan tool to request the SIR data list display. 9. Read the driver frontal air bag deployment loop resistance DRIVER AIR BAG RES. Is the DRIVER AIR BAG RES. more than the specified value?	6.0 Ω	Go to Step 5	Go to Step 4
4	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Inspect the inflatable restraint steering wheel module integral harness connector for damage. 3. Ensure the nearby wiring is routed correctly. 4. Replace the inflatable restraint steering wheel module. Is the replacement complete?	—	Go to Step 14	—

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Fig. 42: DTC 31: Driver Air Bag Deployment Loop Resistance High (1 Of 3)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
5	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Remove the inflatable restraint steering wheel module coil from the top of the steering column. 5. Use the J 39715-40 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool BASE OF COLUMN connector to the inflatable restraint steering wheel module coil connector at the top of the steering column. 6. Turn the ignition switch to the ON position. 7. Use the scan tool to request the SIR data list display. 8. Read the driver frontal air bag deployment loop resistance DRIVER AIR BAG RES. <p>Is the DRIVER AIR BAG RES. more than the specified value?</p>	6.0 Ω	Go to Step 7	Go to Step 6
6	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 3. Inspect the inflatable restraint steering wheel module coil for damage. 4. Inspect the inflatable restraint steering wheel module coil connecting wires for damage. 5. Replace the inflatable restraint steering wheel module coil. <p>Is the replacement complete?</p>	—	Go to Step 14	—
7	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic Module (SDM). 5. Check for proper connection at terminals 1 and 2 on the SDM harness connector. <p>Are the terminals damaged and/or corroded?</p>	—	Go to Step 7	Go to Step 8
8	<p>Replace the IP harness.</p> <p>Is the replacement complete?</p>	—	Go to Step 9	—
9	<p>Check for proper connection at terminals 1 and 2 on the SDM.</p> <p>Are the terminals damaged and/or corroded?</p>	—	Go to Step 11	Go to Step 16
10	<p>Check for proper connection at terminals 1 and 2 on the SDM.</p> <p>Are the terminals damaged and/or corroded?</p>	—	Go to Step 11	Go to Step 12

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Fig. 43: DTC 31: Driver Air Bag Deployment Loop Resistance High (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
11	Replace the inflatable restraint Sensing and Diagnostic Module (SDM). Is the replacement complete?	---	Go to Step 16 --	--
12	1. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 2. Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 1 and 2. This opens the short circuit bridge between terminals 1 and 2. 3. Zero the J 39200 Digital Multimeter. 4. Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 1 to the inflatable restraint steering wheel module coil connector terminal 7. Is the resistance reading within the specified value?	0-0.5 Ω	Go to Step 14	Go to Step 13
13	Repair the open circuit or high resistance condition in CKT BM30. Is the repair complete?	--	Go to Step 16	--
14	1. Zero the J 39200 Digital Multimeter. 2. Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector from terminal 2 to the inflatable restraint steering wheel module coil connector terminal 8. Is the resistance reading within the specified values?	0-0.5 Ω	Go to Integrity Check	Go to Step 15
15	Repair the open circuit condition or high resistance in CKT B30. Is the repair complete?	--	Go to Step 16	--
16	Reconnect all the SIR system components. Ensure all the components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	--	Go to Step 17	--
17	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	--	Go to SIR Diagnostic System Check	--

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Fig. 44: DTC 31: Driver Air Bag Deployment Loop Resistance High (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC 32: DRIVER AIR BAG DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when combined resistance of the driver-side air bag module, SIR coil assembly, harness wiring circuits BM30 and B30 and connector terminal contacts is less than 1.7 ohms. RESISTANCE MEASUREMENT test checks for this malfunction.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

DTC clears when a scan tool CLEAR CODES command is issued, circuit has been repaired and conditions which caused current DTC 32 to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

An intermittent condition is likely to be caused by a short between circuit BM30 and B30, a malfunctioning shorting bar in driver-side air bag module, SIR coil, or SDM harness connector above SDM harness connector terminals No. 1 and 2. Inspect circuits BM30 and B30 for cutting or chafing.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 45 -Fig. 47 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References**3**

Checks if malfunction is in driver-side air bag.

5

Checks if malfunction is in SIR coil.

12

Checks for short between circuits BM30 and B30.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the driver frontal air bag deployment loop resistance DRIVER AIR BAG RES. Has DRIVER AIR BAG RES. been read and recorded on the repair order?	—	<i>Go to Step 3</i>	—
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharge. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint steering wheel module. 5. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool STEERING COLUMN connector to the inflatable restraint steering wheel module integral harness connector. 6. Reconnect the negative battery cable. 7. Turn the ignition switch to the ON position. 8. Use the scan tool to request the SIR data list display. 9. Read the driver frontal air bag deployment loop resistance DRIVER AIR BAG RES. Is the DRIVER AIR BAG RES. less than the specified value?	1.7 Ω	<i>Go to Step 5</i>	<i>Go to Step 4</i>
4	1. Turn the ignition switch to the OFF position. 2. Inspect the inflatable restraint steering wheel module integral harness connector for damage. 3. Ensure the nearby wiring is routed correctly. 4. Replace the inflatable restraint steering wheel module. Is the replacement complete?	—	<i>Go to Step 14</i>	

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**Fig. 45: DTC 32: Driver Air Bag Deployment Loop Resistance Low (1 Of 3)
 Courtesy of GENERAL MOTORS CORP.**

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
5	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Remove the inflatable restraint steering wheel module coil from the top of the steering column. 5. Use the J 39715-40 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool BASE OF COLUMN connector to the inflatable restraint steering wheel module coil connector at the top of the steering column. 6. Turn the ignition switch to the ON position. 7. Use the scan tool to request the SIR data list display. 8. Read the driver frontal air bag deployment loop resistance DRIVER AIR BAG RES. <p>Is the DRIVER AIR BAG RES. less than the specified value?</p>	1.7 Ω	Go to Step 7	Go to Step 6
6	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 3. Inspect the inflatable restraint steering wheel module coil for damage. 4. Inspect the inflatable restraint steering wheel module coil connecting wires for damage. 5. Replace the inflatable restraint steering wheel module coil. <p>Is the replacement complete?</p>	—	Go to Step 14	—
7	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic Module (SDM). 5. Check for proper connection at terminals 1 and 2 on the SDM harness connector. <p>Are the terminals damaged and/or corroded?</p>	—	Go to Step 7	Go to Step 8
8	<p>Replace the IP harness.</p> <p>Is the replacement complete?</p>	—	Go to Step 9	—

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Fig. 46: DTC 32: Driver Air Bag Deployment Loop Resistance Low (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	Check for proper connection at terminals 1 and 2 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 14</i>
10	Check for proper connection at terminals 1 and 2 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 12</i>
11	Replace the inflatable restraint Sensing and Diagnostic Module (SDM). Is the replacement complete?	—	<i>Go to Step 14</i>	—
12	1. Disconnect the <i>J 39715-A</i> SIR Driver/Passenger Load Tool. 2. Insert the <i>J 42113</i> Shorting Bar Tool into the SDM harness connector terminal above terminals 1 and 2. This opens the short circuit bridge between terminals 1 and 2. 3. Zero the <i>J 39200</i> Digital Multimeter. 4. Use the <i>J 39200</i> Digital Multimeter to measure the resistance on the SDM harness connector from terminal 1 to terminal 2. Is the resistance reading within the specified value?	0–0.5 Ω	<i>Go to Step 13</i>	<i>Go to Integrity Check</i>
13	Repair the short circuit between CKT BM30 and CKT B30. Is the repair complete?	—	<i>Go to Step 14</i>	—
14	Reconnect all the SIR system components. Ensure all the components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	<i>Go to Step 15.</i>	—
15	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 47: DTC 32: Driver Air Bag Deployment Loop Resistance Low (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC 33: PASSENGER AIR BAG DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when combined resistance of the passenger-side air bag module, harness wiring circuits BA10 and BP10 and connector terminal contact is more than 5 ohms. RESISTANCE MEASUREMENT test checks for this malfunction. The test occurs once each ignition cycle when IGNITION is within normal range.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, DTC will clear with scan tool. If resistance in passenger side air bag module circuit is less than 5 ohms, current DTC 33 will change to a history DTC and can be cleared with scan tool.

Diagnostic Aids

An intermittent condition is likely to be caused by poor connection at passenger-side air bag integral connector, SDM terminals No. 3 or 4, or a poor wire to terminal connection in circuits BA10 or BP10.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 48 -Fig. 50 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Checks deployment loop resistance measured by SDM.

7

Checks for proper contact or corrosion of SDM.

12

Isolates malfunction to one side of passenger-side air bag module connector.

14

Checks if malfunction is in circuit BA10.

16

Checks if malfunction is in circuit BP10.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the passenger frontal air bag deployment loop resistance PASSENGER AIR BAG RES. Has PASSENGER AIR BAG RES. been read and recorded on the repair order?	—	<i>Go to Step 3</i>	—
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint IP module. 5. Check for proper connection at terminals 1 and 2 on the harness side of the inflatable restraint IP module orange 2-way connector. Are the terminals damaged or corroded?	—	<i>Go to Step 4</i>	<i>Go to Step 5</i>
4	Repair the inflatable restraint IP module yellow 2-way harness connector. Refer to SIR Connector (Plastic Body and Terminal Metal Pin) Repair in this section. Are the repairs complete?	—	<i>Go to Step 5</i>	—
5	Check for proper connection at terminals 1 and 2 on the inflatable restraint IP module yellow 2-way connector. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the inflatable restraint IP module. Is the replacement complete?	—	<i>Go to Step 18</i>	—
7	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Check for proper connection at terminals 3 and 4 on the SDM harness connector. Are the terminals damaged and/or corroded?	—	<i>Go to Step 8</i>	<i>Go to Step 10</i>
8	Replace the IP harness. Is the replacement complete?	—	<i>Go to Step 9</i>	—

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Fig. 48: DTC 33: Passenger Air Bag Deployment Loop Resistance High (1 Of 3)
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Step	Action	Value(s)	Yes	No
9	Check for proper connection at terminals 3 and 4 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 18</i>
10	Check for proper connection at terminals 3 and 4 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 12</i>
11	Replace the SDM. Is the replacement complete?	—	<i>Go to Step 18</i>	—
12	1. Use the J 38715-55 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool PASSENGER INFLATOR connector to the inflatable restraint IP module harness connector. 2. Reconnect the SDM harness connector to the SDM. 3. Reconnect the negative battery cable. 4. Turn the ignition switch to the ON position. 5. Use the scan tool to request the SIR data list display. 6. Read the passenger air bag deployment loop resistance PASSENGER AIR BAG RES. Is PASSENGER AIR BAG RES. greater than the specified value?	5.0 Ω	<i>Go to Step 14</i>	<i>Go to Step 13</i>
13	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint IP module. Is the replacement complete?	—	<i>Go to Step 18</i>	—
14	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the SDM. 5. Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 3 and 4. This opens the short circuit bridge between terminals 3 and 4. 6. Zero the J 39200 Digital Multimeter. 7. Use the Zero the J 39200 Digital Multimeter to measure the resistance from the SDM harness connector terminal 3 to the inflatable restraint IP module yellow 2-way harness connector terminal 2. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 16</i>	<i>Go to Step 15</i>

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Fig. 49: DTC 33: Passenger Air Bag Deployment Loop Resistance High (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
15	Repair an open circuit or high resistance in CKT BA10. Is the repair complete?	—	<i>Go to Step 18</i>	—
16	1. Zero the J 39200 Digital Multimeter. 2. Use the J 39200 Digital Multimeter to measure the resistance from the SDM harness connector terminal 4 to the inflatable restraint IP module yellow 2-way harness connector terminal 1. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Integrity Check</i>	<i>Go to Step 17</i>
17	Repair an open circuit or high resistance in CKT BP10. Is the repair complete?	—	<i>Go to Step 18</i>	—
18	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	<i>Go to Step 19</i>	—
19	Clear the SIR diagnostic trouble codes. Are all the SIR diagnostic trouble codes cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 50: DTC 33: Passenger Air Bag Deployment Loop Resistance High (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC 34: PASSENGER AIR BAG DEPLOYMENT LOOP RESISTANCE LOW**Circuit Description**

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when combined resistance of the passenger-side air bag module, harness wiring circuits BA10 and BP10 and connector terminal contacts is less than 1.1 ohms. RESISTANCE MEASUREMENT test checks for this malfunction.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If circuit has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

An intermittent condition is likely to be caused by a short between circuits BM30 and B30, a malfunctioning shorting bar in passenger-side air bag module, SIR coil or SDM harness connector above SDM harness connector terminals No. 3 and 4. Inspect circuits BA10 and BP10 for cutting or chafing. Comparing value of PASSENGER AIR BAG RESISTANCE over multiple ignition cycles can help determine if intermittent condition exists.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 51 -Fig. 53** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks deployment loop resistance measured by SDM.

3

Checks for proper connection of Orange 2-pin connector.

8

Isolates malfunction to one side of passenger-side air bag module Yellow 2-pin connector.

10

Checks for proper contact or corrosion of SDM connector.

15

Checks for short from circuit BA10 to circuit BP10.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the data link connector. Follow the directions in the scan tool instruction manual. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the passenger air bag deployment loop resistance PASSENGER AIR BAG RES. Has the PASSENGER AIR BAG RES. been read and recorded on the repair order?	—	Go to Step 3	—
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the inflatable restraint IP module. 5. Check for proper connection at terminals 1 and 2 on the harness side of the inflatable restraint IP module orange 2-way connector. Are the terminals damaged or corroded?	—	Go to Step 4	Go to Step 6
4	Replace the IP harness. Is the replacement complete?	—	Go to Step 5	—
5	Check for proper connection at terminals 1 and 2 on the inflatable restraint IP module yellow 2-way connector. Are the terminals damaged and/or corroded?	—	Go to Step 7	Go to Step 17
6	Check for proper connection at terminals 1 and 2 on the inflatable restraint IP module yellow 2-way connector. Are the terminals damaged and/or corroded?	—	Go to Step 7	Go to Step 8
7	Replace the inflatable restraint IP module. Has the inflatable restraint IP module been replaced?	—	Go to Step 17	—

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Fig. 51: DTC 34: Passenger Air Bag Deployment Loop Resistance Low (1 Of 3)
 Courtesy of GENERAL MOTORS CORP.

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Step	Action	Value(s)	Yes	No
8	<ol style="list-style-type: none"> Use the J 38715-55 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool PASSENGER INFLATOR connector to the inflatable restraint IP module harness connector. Reconnect the negative battery cable. Turn the ignition switch to the ON position. Use the scan tool to request the SIR data list display. Read the passenger air bag deployment loop resistance PASSENGER AIR BAG RES. Is PASSENGER AIR BAG RES. more than the specified value?	1.1 Ω	Go to Step 10	Go to Step 9
9	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Replace the inflatable restraint IP module. Has the inflatable restraint IP module been replaced?	—	Go to Step 17	—
10	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Wait one minute until the SDM energy reserve capacitors have discharged. Disconnect the negative battery cable. Disconnect the SDM. Check for proper connection at terminals 3 and 4 on the SDM harness connector. Inspect the shorting bar above terminals 3 and 4 on the SDM harness connector. Are the terminals or the shorting bar damaged or corroded?	—	Go to Step 11	Go to Step 13
11	Replace the IP harness. Is the replacement complete?	—	Go to Step 12	—
12	<ol style="list-style-type: none"> Check for proper connection at terminals 3 and 4 on the SDM. Inspect the shorting bar lifting tab above terminals 3 and 4 on the SDM. Are the terminals or the shorting bar lifting tab damaged or corroded?	—	Go to Step 14	Go to Step 17
13	<ol style="list-style-type: none"> Check for proper connection at terminals 3 and 4 on the SDM. Inspect the shorting bar lifting tab above terminals 3 and 4 on the SDM. Are the terminals or the shorting bar lifting tab damaged or corroded?	—	Go to Step 14	Go to Step 15
14	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	Go to Step 17	—

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Fig. 52: DTC 34: Passenger Air Bag Deployment Loop Resistance Low (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
15	<ol style="list-style-type: none"> Insert the J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 3 and 4. This opens the short circuit bridge between terminals 3 and 4. Zero the J 39200 Digital Multimeter. Use the J 39200 Digital Multimeter to measure the resistance between the SDM terminals 3 and 4. Is the resistance reading less than the specified value?	OL	Go to Step 16	Go to Integrity Check
16	Repair a short from CKT BA10 to BP10. Is the repair complete?	—	Go to Step 17	—
17	Reconnect all the SIR system components. Ensure all the SIR system components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	Go to Step 18	—
18	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 53: DTC 34: Passenger Air Bag Deployment Loop Resistance Low (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC 35: DRIVER PRETENSIONER DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

SDM performs TURN-ON tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM uses measured voltage difference between DRIVER BELT HIGH and DRIVER BELT LOW to calculate resistance of driver pretensioner deployment loop. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when combined resistance of the driver side pretensioner, harness wiring circuits AM900, AM950, XM901 and XM950 and connector terminal contact is more than 4.4 ohms. RESISTANCE MEASUREMENT test checks for this malfunction. The test occurs once each ignition cycle when IGNITION is within normal range.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, DTC will clear with scan tool. If resistance in driver pretensioner circuit is less than 4.4 ohms, a current DTC will change to a history DTC and can be cleared with scan tool.

Diagnostic Aids

An intermittent condition is likely to be caused by poor connection at 8-pin driver seat connector terminals No. 1 and 2, SDM terminals No. 8 and 9, and wire to terminal connections in circuits AM900, AM950, XM901 or XM950, or drivers-side pretensioner integral 2-pin connector. Inspect circuits AM900, XM901, AM950 and XM950 for cutting or chafing. Comparing value of DRIVER PRETENSIONER RESISTANCE over multiple ignition cycles can help determine if intermittent condition exists.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 54 -Fig. 57** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

12

Checks if malfunction is in circuits AM900 or AM950 between SDM harness connector and 8-pin driver seat connector.

14

Checks if malfunction is in circuits XM901 or XM950 between SDM harness connector and 8-pin driver seat connector.

16

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Checks if malfunction is in driver pretensioner assembly.

18

Checks if malfunction is in circuit AM900 in driver pretensioner seat harness.

20

Checks if malfunction is in circuit XM901 in driver pretensioner seat harness.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the driver pretensioner deployment loop resistance LH PRETENS RESIST. Has LH PRETENS RESIST. been read and recorded on the repair order?	—	Go to Step 3	—
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-driver seat connector C315 from the 8-way driver seat connector located under the LH front seat track cover. 5. Check for proper connection at terminals 1 and 2 on the 8-way body harness-to-driver seat connector C315. Are the terminals damaged and/or corroded?	—	Go to Step 3	Go to Step 4
4	Repair the 8-way body harness-to-driver seat connector C315. Is the repair complete?	—	Go to Step 4	—
5	Check for proper connection at terminals 1 and 2 on C315A on the 8-way driver seat connector. Are the terminals damaged and/or corroded?	—	Go to Step 5	Go to Step 6

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Fig. 54: DTC 35: Driver Pretensioner Deployment Loop Resistance High (1 Of 4)
 Courtesy of GENERAL MOTORS CORP.

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Step	Action	Value(s)	Yes	No
6	Repair C315A on the 8-way driver seat connector. Is the repair complete?	—	<i>Go to Step 22</i>	—
7	1. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 2. Check for proper connection at terminals 8 and 9 on the SDM harness connector. Are the terminals damaged and/or corroded?	—	<i>Go to Step 7</i>	<i>Go to Step 10</i>
8	Replace the IP harness Is the replacement complete?	—	<i>Go to Step 8</i>	—
9	Check for proper connection at terminals 8 and 9 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 22</i>
10	Check for proper connection at terminals 8 and 9 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 12</i>
11	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 22</i>	—
12	Use the J 39200 Digital Multimeter to measure the resistance on the SDM harness connector terminal 8 and the body harness-to-driver seat connector C315 terminal 1. Is the resistance reading within the specified values?	0-0.5 Ω	<i>Go to Step 14</i>	<i>Go to Step 13</i>
13	Repair the high resistance in CKT AM900 or AM950 between the 8-way body harness-to-driver seat connector C315 and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 22</i>	—
14	Measure the resistance between the SDM harness connector terminal 9 to the body harness-to-driver seat connector C315 terminal 2. Is the resistance reading within the specified values?	0-0.5 Ω	<i>Go to Step 16</i>	<i>Go to Step 15</i>
15	Repair the high resistance in CKT XM901 or XM950 between the 8-way body harness-to-driver seat connector C315 and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 22</i>	—

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**Fig. 55: DTC 35: Driver Pretensioner Deployment Loop Resistance High (2 Of 4)
Courtesy of GENERAL MOTORS CORP.**

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Step	Action	Value(s)	Yes	No
16	<ol style="list-style-type: none"> 1. Disconnect the driver seat belt side buckle pretensioner yellow 2-way integral harness connector. Refer to Section 10-10. 2. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool to the driver seat belt side buckle pretensioner harness connector. 3. Reconnect the 8-way body harness-to-driver seat connector C315 to the 8-way driver seat connector. 4. Reconnect the SDM harness connector to the SDM. 5. Reconnect the negative battery cable. 6. Turn the ignition switch to the ON position. 7. Use the scan tool to request the SIR data list display. 8. Read the driver pretensioner loop resistance LH PRETENS RESIST. <p>Is LH PRETENS RESIST. greater than the specified value?</p>	4.4 Ω	Go to Step 18	Go to Step 17
17	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Replace the driver seat belt side buckle pretensioner assembly. <p>Is the replacement complete?</p>	—	Go to Step 22	—
18	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the SDM. Refer to On-Vehicle Service in this section. 5. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 6. Disconnect the 8-way body harness-to-driver seat connect C315. 7. Use the J 39200 Digital Multimeter to measure the resistance between the driver pretensioner yellow 2-way integral harness connector terminal 1 and the driver seat connector C315A terminal 1. <p>Is the resistance reading within than the specified values?</p>	0-0.5 Ω	Go to Step 20	Go to Step 19

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Fig. 56: DTC 35: Driver Pretensioner Deployment Loop Resistance High (3 Of 4)
 Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
19	<p>Replace the driver seat belt side buckle pretensioner assembly.</p> <p>Is the repair complete?</p>	—	Go to Step 22	—
20	<p>Use the J 39200 Digital Multimeter to measure the resistance between the driver pretensioner yellow 2-way integral harness connector terminal 2 and the driver seat connector C315A terminal 2.</p> <p>Is the resistance reading within the specified values?</p>	0-0.5 Ω	Go to Integrity Check	Go to Step 21
21	<p>Replace the driver seat belt side buckle pretensioner assembly.</p> <p>Is the repair complete?</p>	—	Go to Step 22	—
22	<p>Reconnect all the SIR system components. Ensure all the components are properly mounted.</p> <p>Are all the SIR system components reconnected and are all the SIR system components properly mounted?</p>	—	Go to Step 23	—
23	<p>Clear the SIR diagnostic trouble codes.</p> <p>Are the SIR diagnostic trouble codes cleared?</p>	—	Go to SIR Diagnostic System Check	—

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Fig. 57: DTC 35: Driver Pretensioner Deployment Loop Resistance High (4 Of 4)
 Courtesy of GENERAL MOTORS CORP.

DTC 36: DRIVER PRETENSIONER DEPLOYMENT LOOP RESISTANCE LOW**Circuit Description**

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM uses measured voltage difference between DRIVER BELT HIGH and DRIVER BELT LOW to calculate resistance of driver pretensioner deployment loop. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when combined resistance of the driver side pretensioner, harness wiring circuits AM900, AM950, XM901 and XM950 and connector terminal contacts is less than one ohm. RESISTANCE MEASUREMENT test checks for this malfunction.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, history DTC will set. DTC will clear with scan tool.

Diagnostic Aids

Inspect circuits AM900, XM901, AM950 and XM950 for cutting or chafing. Comparing value of DRIVER PRETENSIONER RESISTANCE over multiple ignition cycles can help determine if intermittent condition exists.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 58** and **Fig. 59** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Determines deployment loop resistance measured by SDM.

8

Checks for proper contact or corrosion of SDM harness connector.

10

Checks for short between circuits AM900 and XB901.

13

Checks for short from circuits AM900 or AM950 to circuits XM901 or XM950.

15

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Checks for short in driver pretensioner seat harness.

16

Checks if malfunction is in driver pretensioner assembly.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the data link connector. Follow the directions in the scan tool instruction manual. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the driver pretensioner deployment loop resistance LH PRETENS RESIST. Has the LH PRETENS RESIST. been read and recorded on the repair order?	—	Go to Step 3	—
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-driver seat connector C315 from the 8-way driver seat connector located under the LH front seat track cover. 5. Check for proper connection at terminals 1 and 2 on the 8-way body harness-to-driver seat connector C315. Are the terminals damaged or corroded?	—	Go to Step 4	Go to Step 6
4	Repair the 8-way body harness-to-passenger seat connector C316. Refer to <i>Wiring Repair</i> . Is the repair complete?	—	Go to Step 5	—
5	Check for proper connection at terminals 1 and 2 on C315A on the 8-way driver seat connector. Are the terminals damaged or corroded?	—	Go to Step 7	Go to Step 18
6	Check for proper connection at terminals 1 and 2 on C315A on the 8-way driver seat connector. Are the terminals damaged or corroded?	—	Go to Step 7	Go to Step 8
7	Replace the driver seat belt side buckle pretensioner. Has the driver seat belt side buckle pretensioner been replaced?	—	Go to Step 18	—
8	1. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 2. Check for proper connection at terminals 8 and 9 of the SDM harness connector. Are the terminals damaged or corroded?	—	Go to Step 9	Go to Step 11
9	Replace the IP harness. Is the replacement complete?	—	Go to Step 10	—
10	Check for proper connection at terminals 8 and 9 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 12	Go to Step 18
11	Check for proper connection at terminals 8 and 9 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 12	Go to Step 13

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Fig. 58: DTC 36: Driver Pretensioner Deployment Loop Resistance Low (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

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Step	Action	Value(s)	Yes	No
12	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 18</i>	—
13	1. Zero the J 39200 Digital Multimeter. 2. Use the J 39200 Digital Multimeter to measure the resistance between the SDM harness connector terminals 8 and 9. Is the resistance reading less than the specified value?	OL	<i>Go to Step 14</i>	<i>Go to Step 15</i>
14	Repair a short from CKT AM900 or AM950 to XM901 or XM950. Is the repair complete?	—	<i>Go to Step 18</i>	—
15	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Remove the driver seat. 5. Disconnect the driver seat belt side buckle pretensioner orange 2-way integral harness connector. 6. Use the J 39200 Digital Multimeter to measure the resistance between the driver pretensioner yellow 2-way integral harness connector terminal 1 and 2. Is the resistance reading less than the specified value?	OL	<i>Go to Step 17</i>	<i>Go to Step 16</i>
16	1. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool PASSENGER INFLATOR connector to the pretensioner orange 2-way integral harness connector. 2. Reconnect the 8-way body harness-to-driver seat connector C315 to the 8-way driver seat connector. 3. Reconnect the SDM harness connector to the SDM. 4. Reconnect the negative battery cable. 5. Turn the ignition switch to the ON position. 6. Use the scan tool to request the SIR data list display. 7. Read the driver pretensioner loop resistance LH PRETENS RESIST. Is LH PRETENS RESIST. less than the specified value?	1.0 Ω	<i>Go to Integrity Check</i>	<i>Go to Step 17</i>
17	Replace the driver seat belt side buckle pretensioner. Has the driver seat belt side buckle pretensioner been replaced?	—	<i>Go to Step 18</i>	—
18	Reconnect all the SIR system components. Ensure all the components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	<i>Go to Step 19</i>	—
19	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 59: DTC 36: Driver Pretensioner Deployment Loop Resistance Low (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 37: PASSENGER PRETENSIONER DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM uses measured voltage difference between PASSENGER BELT HIGH and PASSENGER BELT LOW to calculate resistance of passenger pretensioner deployment loop. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

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DTC sets when combined resistance of the passenger side pretensioner, harness wiring circuits AM900, AM950, XM901 and XM950 and connector terminal contacts is more than 4.4 ohms. RESISTANCE MEASUREMENT test checks for this malfunction. The test occurs once each ignition cycle when IGNITION is within normal range.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, DTC will clear with scan tool. If resistance in passenger pretensioner circuit is less than 4.4 ohms, a current DTC will change to a history DTC and can be cleared with scan tool.

Diagnostic Aids

An intermittent condition is likely to be caused by poor connection at 8-pin passenger seat connector terminals No. 1 and 2, SDM terminals No. 15 and 45, and wire to terminal connections of circuits AB900, AB950, XB901 or XB950, or passenger-side pretensioner integral 2-pin connector. Inspect circuits AB900, XB901, AM950 and XM950 for cutting or chafing. Comparing value of PASSENGER PRETENSIONER RESISTANCE over multiple ignition cycles can be helpful in determining if intermittent condition exists.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 60 -Fig. 63 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

12

Checks if malfunction is in circuit AB900 or AB950 between SDM harness connector and 8-pin passenger seat connector.

14

Checks if malfunction is in circuit XB901 or XB950 between SDM harness connector and 8-pin passenger seat connector.

16

Checks if malfunction is in passenger pretensioner assembly.

18

Checks if malfunction is in circuit AB900 in passenger pretensioner seat harness.

20

Checks if malfunction is in circuit XB901 in passenger pretensioner seat harness.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	---	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the passenger pretensioner deployment loop resistance RH PRETENS RESIST. Has RH PRETENS RESIST. been read and recorded on the repair order?	---	<i>Go to Step 3</i>	---
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the 8-way body harness-to-passenger seat connector C316 from the 8-way passenger seat connector located under the RH front seat track cover. 5. Check for proper connection at terminals 1 and 2 on the 8-way body harness-to-passenger seat connector C316. Are the terminals damaged and/or corroded?	---	<i>Go to Step 4</i>	<i>Go to Step 5</i>
4	Repair the 8-way body harness-to-passenger seat connector C316. Is the repair complete?	---	<i>Go to Step 5</i>	---

98D13956

Fig. 60: DTC 37: Passenger Pretensioner Deployment Loop Resistance High (1 Of 4)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
5	Check for proper connection at terminals 1 and 2 on C316A on the 8-way passenger seat connector. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Repair C316A on the 8-way passenger seat connector. Is the repair complete?	—	<i>Go to Step 22</i>	—
7	1. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 2. Check for proper connection at terminals 15 and 45 on the SDM harness connector. Are the terminals damaged and/or corroded?	—	<i>Go to Step 8</i>	<i>Go to Step 10</i>
8	Replace the IP harness. Is the replacement complete?	—	<i>Go to Step 9</i>	—
9	Check for proper connection at terminals 15 and 45 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 22</i>
10	Check for proper connection at terminals 15 and 45 on the SDM. Are the terminals damaged and/or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 12</i>
11	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 22</i>	—
12	Use the <i>J 39200</i> Digital Multimeter to measure the resistance on the SDM harness connector terminal 45 and the body harness-to-passenger seat connector C316 terminal 1. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 14</i>	<i>Go to Step 13</i>
13	Repair the high resistance in CKT AB900 or AB950 between the 8-way body harness-to-passenger seat connector C316 and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 22</i>	—
14	Measure the resistance between the SDM harness connector terminal 15 and the body harness-to-passenger seat connector C316 terminal 2. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 16</i>	<i>Go to Step 15</i>
15	Repair the high resistance in CKT XB901 or XB950 between the 8-way body harness-to-passenger seat connector C316 and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 22</i>	—

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**Fig. 61: DTC 37: Passenger Pretensioner Deployment Loop Resistance High (2 Of 4)
Courtesy of GENERAL MOTORS CORP.**

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
16	<ol style="list-style-type: none"> 1. Disconnect the passenger seat belt side buckle pretensioner yellow 2-way integral harness connector. 2. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool to the passenger seat belt side buckle pretensioner harness connector. 3. Reconnect the 8-way body harness-to-passenger seat connector C316 to the 8-way passenger seat connector. 4. Reconnect the SDM harness connector to the SDM. 5. Reconnect the negative battery cable. 6. Turn the ignition switch to the ON position. 7. Use the scan tool to request the SIR data list display. 8. Read the passenger pretensioner loop resistance RH PRETENS RESIST. <p>Is RH PRETENS RESIST. greater than the specified value?</p>	4.4 Ω	Go to Step 18	Go to Step 17
17	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Replace the passenger seat belt side buckle with the pretensioner belt assembly. <p>Is the replacement complete?</p>	—	Go to Step 22	—
18	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. 4. Disconnect the SDM. Refer to On-Vehicle Service in this section. 5. Disconnect the J 38715-A SIR Driver/Passenger Load Tool. 6. Disconnect the 8-way body harness-to-passenger seat connect C316. 7. Use the J 39200 Digital Multimeter to measure the resistance between the passenger pretensioner yellow 2-way integral harness connector terminal 1 and the passenger seat connector C316A terminal 1. <p>Is the resistance reading within than the specified values?</p>	0-0.5 Ω	Go to Step 18	Go to Step 17
19	<p>Repair the high resistance in CKT AB900 between the passenger pretensioner yellow 2-way integral harness connector terminal 1 and the 8-way passenger seat connector C316A terminal 1.</p> <p>Is the repair complete?</p>	—	Go to Step 22	—

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Fig. 62: DTC 37: Passenger Pretensioner Deployment Loop Resistance High (3 Of 4)
 Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
20	<p>Use the J 39200 Digital Multimeter to measure the resistance between the passenger pretensioner yellow 2-way integral harness connector terminal 2 and the passenger seat connector C316A terminal 2.</p> <p>Is the resistance reading within the specified values?</p>	0-0.5 Ω	Go to Integrity Check	Go to Step 21
21	<p>Repair the high resistance in CKT XB901 between the passenger pretensioner yellow 2-way integral harness connector terminal 2 and the 8-way passenger seat connector C316A terminal 2.</p> <p>Is the repair complete?</p>	—	Go to Step 22	—
22	<p>Reconnect all the SIR system components. Ensure all the components are properly mounted.</p> <p>Are all the SIR system components reconnected and are all the SIR system components properly mounted?</p>	—	Go to Step 23	—
23	<p>Clear the SIR diagnostic trouble codes.</p> <p>Are the SIR diagnostic trouble codes cleared?</p>	—	Go to SIR Diagnostic System Check	—

98H13950

Fig. 63: DTC 37: Passenger Pretensioner Deployment Loop Resistance High (4 Of 4)
Courtesy of GENERAL MOTORS CORP.

DTC 38: PASSENGER PRETENSIONER DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM uses measured voltage difference between PASSENGER BELT HIGH and PASSENGER BELT LOW to calculate resistance of passenger pretensioner deployment loop. Upon passing these tests, if energy reserve is charged, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when combined resistance of the passenger pretensioner, harness wiring circuits AB900, AB950, XB901 and XB950, and connector terminal contacts is less than one ohm. RESISTANCE MEASUREMENT test checks for this malfunction.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTC must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, history DTC will set. History DTC can be cleared with scan tool.

Diagnostic Aids

Inspect circuits AB900, XB901, AM950 and XM950 for cutting or chafing. Comparing value of DRIVER PRETENSIONER RESISTANCE over multiple ignition cycles can help determine if intermittent condition exists.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 64 -Fig. 66** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Determines deployment loop resistance measure by SDM.

8

Checks for proper contact or corrosion of SDM connector.

13

Checks for short from circuits AM900 or AM950 to circuits XM901 or XM950.

15

Checks for short in passenger pretensioner seat harness.

Checks if malfunction is in passenger pretensioner assembly.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the data link connector. Follow the directions in the scan tool instruction manual. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the passenger pretensioner deployment loop resistance RH PRETENS RESIST. Has the RH PRETENS RESIST. been read and recorded on the repair order?	—	Go to Step 3	—
3	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. Refer to <i>Battery Disconnect Caution</i> . 4. Disconnect the 8-way body harness-to-passenger seat connector C316 from the 8-way passenger seat connector located under the RH front seat track cover. 5. Check for proper connection at terminals 1 and 2 on the 8-way body harness-to-passenger seat connector C316. Are the terminals damaged or corroded?	—	Go to Step 4	Go to Step 6
4	Repair the 8-way body harness-to-passenger seat connector C316. Refer to <i>Wiring Repair</i> . Is the repair complete?	—	Go to Step 5	—
5	Check for proper connection at terminals 1 and 2 on C316A on the 8-way passenger seat connector. Are the terminals damaged or corroded?	—	Go to Step 7	Go to Step 18
6	Check for proper connection at terminals 1 and 2 on C316A on the 8-way passenger seat connector. Are the terminals damaged or corroded?	—	Go to Step 7	Go to Step 8
7	Replace the passenger seat belt side buckle pretensioner. Refer to <i>Pass. Seat Belt Side Buckle Pretensioner Replace</i> . Has the passenger seat belt side buckle pretensioner been replaced?	—	Go to Step 18	—
8	1. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Refer to <i>Infl Rst Sensing and Diag. and Seat Belt Pret. Mod.</i> 2. Check for proper connection at terminals 15 and 45 of the SDM harness connector. Are the terminals damaged or corroded?	—	Go to Step 9	Go to Step 11

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Fig. 64: DTC 38: Passenger Pretensioner Deployment Loop Resistance Low (1 Of 3)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	Replace the IP harness. Is the replacement complete?	—	Go to Step 10	—
10	Check for proper connection at terminals 15 and 45 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 12	Go to Step 18
11	Check for proper connection at terminals 15 and 45 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 12	Go to Step 13
12	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Refer to <i>Init Rst Sensing and Diag. and Seat Belt Pret. Mod.</i> Is the replacement complete?	—	Go to Step 18	—
13	1. Zero the J 39200 Digital Multimeter. 2. Use the J 39200 Digital Multimeter to measure the resistance between the SDM harness connector terminals 15 and 45. Is the resistance reading less than the specified value?	OL	Go to Step 14	Go to Step 15
14	Repair a short from CKT AB900 or AB950 to XB901 or XB950. Is the repair complete?	—	Go to Step 18	—
15	1. Turn the ignition switch to the OFF position. 2. Wait one minute until the SDM energy reserve capacitors have discharged. 3. Disconnect the negative battery cable. Refer to <i>Battery Disconnect Caution.</i> 4. Remove the front passenger seat. Refer to <i>Seat Replacement (Passenger Side Front).</i> 5. Disconnect the passenger seat belt side buckle pretensioner orange 2-way integral harness connector. 6. Use the J 39200 Digital Multimeter to measure the resistance between the passenger pretensioner yellow 2-way integral harness connector terminal 1 and 2. Is the resistance reading less than the specified value?	OL	Go to Step 17	Go to Step 16
16	1. Use the J 38715-30 adapter to connect the J 38715-A SIR Driver/Passenger Load Tool PASSENGER INFLATOR connector to the pretensioner orange 2-way integral harness connector. 2. Reconnect the 8-way body harness-to-passenger seat connector C316 to the 8-way passenger seat connector. 3. Reconnect the SDM harness connector to the SDM. 4. Reconnect the negative battery cable. 5. Turn the ignition switch to the ON position. 6. Use the scan tool to request the SIR data list display. 7. Read the passenger pretensioner loop resistance RH PRETENS RESIST. Is RH PRETENS RESIST. less than the specified value?	1.0 Ω	Go to Integrity Check	Go to Step 17

98G13942

Fig. 65: DTC 38: Passenger Pretensioner Deployment Loop Resistance Low (2 Of 3)
Courtesy of GENERAL MOTORS CORP.

Step	Action	Value(s)	Yes	No
17	Replace the passenger seat belt side buckle pretensioner. Refer to <i>Pass. Seat Belt Side Buckle Pretensioner Replace.</i> Has the passenger seat belt side buckle pretensioner been replaced?	---	Go to Step 18	—
18	Reconnect all the SIR system components. Ensure all the components are properly mounted. Are all the SIR system components reconnected and are all the SIR system components properly mounted?	—	Go to Step 19	---
19	Clear the SIR diagnostic trouble codes. Are the SIR diagnostic trouble codes cleared?	—	Go to SIR Diagnostic System Check	---

98E13940

Fig. 66: DTC 38: Passenger Pretensioner Deployment Loop Resistance Low (3 Of 3)

Courtesy of GENERAL MOTORS CORP.

DTC 43: WARNING LAMP CIRCUIT SHORT TO VOLTAGE

NOTE: Refer to diagnostic chart to repair DTC. See Fig. 67 .

Circuit Description

When ignition first turned ON, battery voltage is applied to AIR BAG warning light and to ignition input terminal No. 5. SDM responds by flashing AIR BAG warning light 7 times. SDM monitors lamp driver output by comparing output state at AIR BAG WARNING INDICATOR terminal No. 7 to microprocessor commanded state. DTC sets when ignition is above a specified value and output state does not match commanded ON state of lamp driver for 1.25 seconds.

Conditions For Setting DTC

DTC sets when ignition voltage is above a specified value and voltage measured at AIR BAG WARNING INDICATOR terminal No. 6 is above a specified value while lamp driver is commanded ON. This test runs during initialization and CONTINUOUS MONITORING when ignition voltage is above a specified value.

Action Taken

SDM attempts to turn on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, DTC will clear with scan tool. If output state at AIR BAG WARNING INDICATOR terminal No. 6 matches commanded ON state of lamp driver, current DTC will change to a history DTC and can be cleared with scan tool.

Diagnostic Aids

See SIR DIAGNOSTIC SYSTEM CHECK .

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. AIR BAG warning lamp circuitry malfunctions set this DTC. These malfunctions are addressed in the SIR Diagnostic System Check via <i>AIR BAG Warning Lamp Does Not Come On</i> . Failure to properly perform the SIR Diagnostic System Check may result in misdiagnosis. 2. Turn the ignition switch to the ON position. 3. Clear the SIR Diagnostic Trouble Codes. Is DTC 43 set?	—	Go to Integrity Check	Go to SIR Diagnostic System Check

98A13938

Fig. 67: DTC 43: Warning Lamp Circuit Short To Voltage
 Courtesy of GENERAL MOTORS CORP.

DTC 44: WARNING LAMP CIRCUIT OPEN OR SHORT TO GROUND

NOTE: Refer to diagnostic chart to repair DTC. See Fig. 68 .

Circuit Description

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

When ignition first turned ON, battery voltage is applied to AIR BAG warning light and to ignition input terminal No. 5. SDM responds by flashing AIR BAG warning light 7 times. SDM monitors lamp driver output by comparing output state at AIR BAG WARNING INDICATOR terminal No. 7 to microprocessor commanded state. DTC sets when ignition is above a specified value and output state does not match commanded ON state of lamp driver for 1.25 seconds.

Conditions For Setting DTC

DTC sets when ignition voltage is above a specified value and voltage measured at AIR BAG WARNING INDICATOR terminal No. 6 is above a specified value while lamp driver is commanded ON. This test runs during initialization and CONTINUOUS MONITORING when ignition voltage is above a specified value.

Action Taken

SDM attempts to turn on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using a scan tool CLEAR CODES command. If fault has been corrected, DTC will clear with scan tool. If output state at AIR BAG WARNING INDICATOR terminal No. 6 matches commanded ON state of lamp driver, current DTC will change to a history DTC and can be cleared with scan tool.

Diagnostic Aids

See **SIR DIAGNOSTIC SYSTEM CHECK** .

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. The AIR BAG warning lamp circuitry malfunctions set this DTC. These malfunctions are addressed in the SIR Diagnostic System Check via <i>AIR BAG Warning Lamp Comes On Steady and AIR BAG Warning Lamp Does Not Come On</i> Failure to properly perform the SIR Diagnostic System Check may result in misdiagnosis. 2. Turn the ignition switch to the ON position. 3. Clear the SIR Diagnostic Trouble Codes. Is DTC 44 set?	—	Go to Integrity Check	Go to SIR Diagnostic System Check

98113936

Fig. 68: DTC 44: Warning Lamp Circuit Open Or Short To Ground
 Courtesy of GENERAL MOTORS CORP.

DTC 52: SDM NOT CONFIGURED

NOTE: Refer to diagnostic chart to repair DTC. See **Fig. 69** .

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition is turned ON. SDM monitors firing loops to detect leakage currents to ground and system voltage in air bags and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

DTC sets when SDM is installed in vehicle in unconfigured state. Replacement SDM must be programmed by technician using scan tool. This malfunction is detected asynchronously when IGNITION voltage is above a specified value.

Action Taken

SDM attempts to turn on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

DTC clears when serial data configuration programming via scan tool is successful.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the data link connector. Follow the directions in the scan tool instruction manual. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. Does the SDM Configuration show the specified value?	SDM Not Config.	Go to Step 3	Go to Integrity Check
3	DTC 52 indicates that the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) is not programmed for use in this vehicle. Refer to the Programming option on the scan tool Supplemental Inflatable Restraint main menu. Is the SDM reprogrammed?	—	Go to SIR Diagnostic System Check	—

98G13934

Fig. 69: DTC 52: SDM Not Configured
Courtesy of GENERAL MOTORS CORP.

DTC 53: CONFIGURATION MISMATCH

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition is turned ON. Upon passing these tests, ignition, VLR and deployment loop voltages are measured to ensure they are within normal ranges. Next, SDM performs initialization tests. SDM then goes into CONTINUOUS MONITORING mode.

Conditions For Setting DTC

DTC sets when there is mismatch between serial data configuration programming request and SDM determined vehicle system configuration. This malfunction is detected asynchronously when IGNITION voltage is above a specified value.

Action Taken

SDM attempts to turn on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If fault has been corrected, DTC may be cleared using scan tool. If SDM determines that vehicle system configuration matches serial data configuration programming, a current DTC will change to a history DTC which may be cleared using scan tool.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 70 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Checks status of SIR system programming configuration.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the data link connector. Follow the directions in the scan tool instruction manual. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. Does the SDM Configuration show the specified value?	Driver and Passenger	Go to Step 3	Go to Integrity Check
3	DTC 53 indicates that a mismatch between the serial data configuration programming request and the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) determined vehicle system configuration. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Refer to the Programming option on the scan tool Supplemental Inflatable Restraint main menu. Is the SDM reprogrammed?	—	Go to SIR Diagnostic System Check	—

98E13932

Fig. 70: DTC 53: Configuration Mismatch
Courtesy of GENERAL MOTORS CORP.

DTC 55: INTERNAL SDM FAILURE

Circuit Description

DTC 55 is an indication of potential internal SDM malfunction and requires SDM replacement.

Conditions For Setting DTC

DTC sets when internal malfunction is detected by SDM.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If fault has been corrected, DTC may be cleared using scan tool. SDM must be replaced for a current DTC 55.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 71** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks for current DTC 55.

4

Checks for history DTC 55.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System- Check performed?	---	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the data link connector. 3. Turn the ignition switch to the ON position. 4. Request the SIR DTC information. Is Current DTC 55 set?	---	<i>Go to Step 3</i>	<i>Go to Step 4</i>
3	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic Module and Seat Belt Pretensioner (SDM). Is the replacement complete?	---	<i>Go to SIR Diagnostic System Check</i>	---
4	Is History DTC 55 set?	---	<i>Go to Step 5</i>	<i>Go to Integrity Check</i>
5	Clear DTC information Has the DTC information been cleared	---	<i>Go to SIR Diagnostic System Check</i>	<i>Go to Integrity Check</i>

98C13930

Fig. 71: DTC 55: Internal SDM Failure
Courtesy of GENERAL MOTORS CORP.

DTC 56: SDM NOT REUSABLE

NOTE: Refer to diagnostic chart to repair DTC. See Fig. 72 .

Circuit Description

DTC 56 is an indication of potential internal SDM malfunction and requires SDM replacement.

Conditions For Setting DTC

DTC sets when frontal air bag and pretensioner deployment has been commanded, or there have been 3 pretensioner only or 3 side impact deployments commanded by SDM.

Action Taken

SDM turns on AIR BAG warning light and sets a DTC.

Conditions For Clearing DTC

DTC clears when SDM is replaced.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	---	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic Module (SDM). Is the replacement complete?	---	<i>Go to SIR Diagnostic System Check</i>	---

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Fig. 72: DTC 56: SDM Not Reusable
Courtesy of GENERAL MOTORS CORP.

DTC 65: PASSENGER AIR BAG DEPLOYMENT COMMANDED

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Conditions For Setting DTC

DTC sets when SDM detects front crash of sufficient force to warrant deployment of air bags.

Action Taken

SDM turns on AIR BAG warning light, sets a DTC and records Crash Data.

Conditions For Clearing DTC

DTC clears when SDM is replaced.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 73 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Checks if passenger-side air bag has been deployed.

4

Checks for damage to front of vehicle and undercarriage. If passenger-side air bag has not deployed and there are no signs of damage to vehicle, SDM may be malfunctioning.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	Turn the ignition switch to the OFF position. Has the inflatable restraint IP module deployed?	—	Go to Step 3	Go to Step 4
3	1. Replace the inflatable restraint IP module. 2. Replace the driver seat belt side buckle pretensioner. 3. Replace the passenger seat belt side buckle pretensioner. 4. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Clear the SIR Diagnostic Trouble Codes. Are the SIR Diagnostic Trouble Codes cleared?	—	Go to SIR Diagnostic System Check	—
4	1. Inspect the front of the vehicle for signs of impact. 2. Inspect the undercarriage for signs of impact. Are any signs of impact evident?	—	Go to Step 3	Go to Step 5
5	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	Go to SIR Diagnostic System Check	—

98G13926

Fig. 73: DTC 65: Passenger Air Bag Deployment Commanded
Courtesy of GENERAL MOTORS CORP.

DTC 66: DRIVER AIR BAG DEPLOYMENT COMMANDED

Conditions For Setting DTC

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

DTC sets when SDM detects front crash of sufficient force to warrant deployment of air bags.

Action Taken

SDM turns on AIR BAG warning light, sets a DTC and records Crash Data.

Conditions For Clearing DTC

DTC clears when SDM is replaced.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 74 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Checks if driver-side air bag has been deployed.

4

Checks for damage to front of vehicle and undercarriage. If passenger-side air bag has not deployed and there are no signs of damage to vehicle, SDM may be malfunctioning.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	Turn the ignition switch to the OFF position. Is the inflatable restraint steering wheel module deployed?	—	Go to Step 3	Go to Step 4
3	1. Replace the inflatable restraint steering wheel module. 2. Replace the driver seat belt side buckle pretensioner. 3. Replace the passenger seat belt side buckle pretensioner. 4. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 5. Clear the SIR Diagnostic Trouble Codes. Are the SIR Diagnostic Trouble Codes cleared?	—	Go to SIR Diagnostic System Check	—
4	1. Inspect the front of the vehicle for signs of impact. 2. Inspect the undercarriage for signs of impact. Are any signs of impact evident?	—	Go to Step 3	Go to Step 5
5	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	Go to SIR Diagnostic System Check	—

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Fig. 74: DTC 66: Driver Air Bag Deployment Commanded
Courtesy of GENERAL MOTORS CORP.

DTC 67: PRETENSIONER ONLY DEPLOYMENT COMMANDED

Conditions For Setting DTC

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

DTC sets when SDM detects front or rear crash of sufficient force to warrant deployment of pretensioners only.

Action Taken

SDM turns on AIR BAG warning light, sets a DTC and records Crash Data

Conditions For Clearing DTC

DTC clears when seat belt pretensioners are replaced and scan tool CLEAR CODES command is issued.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 75 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Both pretensioners must be replaced in event of deployment.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	---	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to the OFF position. 2. Replace the driver seat belt side buckle pretensioner. 3. Replace the passenger seat belt side buckle pretensioner. 4. Clear the SIR Diagnostic Trouble Codes. Are the SIR Diagnostic Trouble Codes cleared?	---	Go to SIR Diagnostic System Check	---

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Fig. 75: DTC 67: Pretensioner Only Deployment Commanded
 Courtesy of GENERAL MOTORS CORP.

DTC 68: DRIVER SIDE IMPACT AIR BAG DEPLOYMENT COMMANDED

Conditions For Setting DTC

DTC sets when SDM detects a side impact of sufficient force to warrant deployment of side air bag.

Action Taken

SDM turns on AIR BAG warning light, sets a DTC and records Crash Data

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If fault has been corrected, history DTC will set. History DTC may be cleared using scan tool. SDM must be replaced after 3 pretensioner only deployments or if current DTC cannot be cleared.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 76 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

3

DTC 68 may have set falsely if driver side impact air bag module has not deployed.

4

DTC 68 has set falsely if there is no sign of driver side impact.

5

Checks for SDM malfunction setting in DTC.

7

DTC 68 may have set falsely while diagnosing vehicle.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	---	Go to Step 2	Go to SIR Diagnostic System Check
2	Turn the ignition switch to the OFF position. Did the inflatable restraint driver seat module deploy?	---	Go to Step 5	Go to Step 3
3	1. Inspect the LH side of the vehicle for signs of impact. 2. Inspect the undercarriage of the vehicle for signs of impact. Are signs of impact evident?	---	Go to Step 5	Go to Step 4
4	1. Turn the ignition switch to the ON position. 2. Clear the SIR DTCs. Is DTC 68 set?	---	Go to Step 7	Go to Step 6
5	Replace the removed components and perform the inspections required following an accident. Have the appropriate inspections and repairs been made?	---	Go to Step 9	---
6	Turn the ignition switch to the OFF position. Was DTC 68 set when the SIR Diagnostic System Check was first performed?	---	Go to Step 8	Go to Step 9
7	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	---	Go to Step 9	---
8	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	---	Go to Step 9	---
9	Reconnect all the removed SIR system components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	---	Go to SIR Diagnostic System Check	---

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Fig. 76: DTC 68: Driver Side Impact Air Bag Deployment Commanded
Courtesy of GENERAL MOTORS CORP.

DTC 69: PASSENGER SIDE IMPACT AIR BAG DEPLOYMENT COMMANDED

Conditions For Setting DTC

DTC sets when SDM detects a side impact of sufficient force to warrant deployment of side air bag.

Action Taken

SDM turns on AIR BAG warning light, sets a DTC and records Crash Data

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If fault has been corrected, history DTC will set. History DTC may be cleared using scan tool. SDM must be replaced after 3 pretensioner only deployments or if current DTC cannot be cleared.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 77 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

3

DTC 69 may have falsely set if passenger side impact air bag module has not deployed.

4

DTC 69 has set falsely if there is no sign of passenger side impact.

5

Checks for SDM malfunction setting in DTC.

7

DTC 69 may have set falsely while diagnosing vehicle.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	Turn the ignition switch to the OFF position. Did the inflatable restraint passenger seat module deploy?	—	Go to Step 5	Go to Step 3
3	1. Inspect the RH side of the vehicle for signs of impact. 2. Inspect the undercarriage of the vehicle for signs of impact. Are signs of impact evident?	—	Go to Step 5	Go to Step 4
4	1. Turn the ignition switch to the ON position. 2. Clear all the SIR DTCs. Have all the SIR DTCs been cleared?	—	Go to Step 6	Go to Step 7
5	Replace the removed components and perform the inspections required following an accident. Have the appropriate inspections and repairs been made?	—	Go to Step 9	—
6	Turn the ignition switch to the OFF position. Was DTC 69 set when the SIR Diagnostic System Check was first performed?	—	Go to Step 8	Go to Step 9
7	1. Turn the ignition switch to the OFF position. 2. Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	Go to Step 9	—
8	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	Go to Step 9	—
9	Reconnect all the removed SIR system components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to SIR Diagnostic System Check	—

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Fig. 77: DTC 69: Passenger Side Impact Air Bag Deployment Commanded

Courtesy of **GENERAL MOTORS CORP.**

DTC 71: DRIVER SIDE IMPACT SENSOR COMMUNICATIONS INVALID**Circuit Description**

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and an internal fault exists in driver SIS.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A SIS circuit short to ground can cause an intermittent condition. Inspect circuits B41, B42 and XB42 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 78** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks communication status of driver SIS.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record the repair order the communication status of the driver side impact sensor LH SIS MESSAGE STATUS. Does LH SIS MESSAGE STATUS display the specified value?	NOK	Go to Step 3	Go to Integrity Check
3	1. Turn the ignition switch OFF. 2. Disconnect the negative battery cable. 3. Replace the inflatable restraint side impact sensor (LH). Is the replacement complete?	—	Go to Step 4	—
4	Reconnect all the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to Step 5	—
5	Clear all the SIR DTCs. Have all the SIR DTCs been cleared?	—	Go to SIR Diagnostic System Check	—

98B13996

Fig. 78: DTC 71: Passenger Side Impact Sensor Communications Invalid
 Courtesy of GENERAL MOTORS CORP.

DTC 73: DRIVER SIDE IMPACT SENSOR SHORT TO VOLTAGE

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and systems voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range, and measured leakage currents to system voltage or loop resistance of driver SIS loop are above a specified value. This is caused by a short from driver SIS loop to system voltage or an open or high resistance condition in driver SIS loop.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A driver SIS circuit short to ground can cause an intermittent condition. Inspect circuits B41, B42 and XB42 for cutting or chafing. Inspect circuits and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 79 -Fig. 81 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

7

Checks if malfunction is a short to voltage in circuit B42 in left door electrical harness.

9

Checks if malfunction is a short to voltage in circuit XB42 in left door electrical harness.

11

Checks if malfunction is a high resistance in circuit B42 in left door electrical harness.

13

Checks if malfunction is high resistance in circuit XB42 in left door electrical harness.

20

Checks if malfunction is short to voltage in circuit B41.

22

Checks if malfunction is short to voltage in circuit XB42 between left door electrical connector and SDM harness connector.

24

Checks if malfunction is high resistance in circuit B41.

26

Checks if malfunction is high resistance in circuit XB42 between left door electrical connector and SDM harness connector.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the driver seat back cover. 4. Disconnect the inflatable restraint driver seat module yellow 2-way integral connector. 5. Disconnect the LH door electrical connector C500. 6. Check for proper connection at terminal 39 and terminal 40 on the door side of C500. Are the terminals damaged or corroded?	—	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	Replace the LH door electrical harness. Is the replacement complete?	—	<i>Go to Step 4</i>	—
4	Check for proper connection of terminal 39 and terminal 40 on the harness side of the LH door electrical connector C500. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 27</i>
5	Check for proper connection of terminal 39 and terminal 40 on the harness side of the LH door electrical connector C500. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the body harness Is the replacement complete?	—	<i>Go to Step 27</i>	—
7	1. Disconnect the inflatable restraint side impact sensor (LH). 2. Turn the ignition switch to the ON position. 3. Use the J 39200 to measure the voltage from the LH side impact sensor 2-way connector terminal 1 to a known good ground. Is the measured voltage less than the specified value?	1 V	<i>Go to Step 9</i>	<i>Go to Step 8</i>
8	Repair the short to voltage in CKT B42 between the LH door side impact sensor 2-way connector terminal 1 and terminal 40 of the LH door electrical connector C500. Is the repair complete?	—	<i>Go to Step 27</i>	—
9	Use the J 39200 to measure the voltage from the LH side impact sensor 2-way connector terminal 2 to a known good ground. Is the measured voltage less than the specified value?	1 V	<i>Go to Step 10</i>	<i>Go to Step 11</i>

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Fig. 79: DTC 73: Driver Side Impact Sensor Short To Voltage (1 Of 3)
Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
10	Repair the short to voltage in CKT XB42 between the LH door side impact sensor 2-way connector terminal 2 and terminal 39 of the LH door electrical connector C500. Is the repair complete?	—	<i>Go to Step 28</i>	—
11	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the SDM have discharged. 3. Zero the <i>J 39200</i> . 4. Use the <i>J 39200</i> to measure the resistance from the from the LH side impact sensor 2-way connector terminal 1 to terminal 40 of the LH door electrical connector C500. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 13</i>	<i>Go to Step 12</i>
12	Repair the high resistance condition in CKT B42. Is the repair complete?	—	<i>Go to Step 28</i>	—
13	1. Zero the <i>J 39200</i> . 2. Use the <i>J 39200</i> to measure the resistance from the from the LH side impact sensor 2-way connector terminal 2 to terminal 39 of the LH door electrical connector C500. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 15</i>	<i>Go to Step 14</i>
14	Repair the high resistance condition in CKT XB42 between the LH side impact sensor 2-way connector and the LH door electrical connector C500. Is the repair complete?	—	<i>Go to Step 28</i>	—
15	1. Disconnect the negative battery cable. 2. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 3. Check for proper connection at terminal 41 and terminal 42 of the SDM harness connector. Are the terminals damaged or corroded?	—	<i>Go to Step 16</i>	<i>Go to Step 18</i>
16	Replace the IP harness. Is the replacement complete?	—	<i>Go to Step 17</i>	—
17	Check for proper connection at terminal 41 and terminal 42 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 19</i>	<i>Go to Step 28</i>
18	Check for proper connection at terminal 41 and terminal 42 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 19</i>	<i>Go to Step 20</i>
19	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 28</i>	—
20	1. Reconnect the negative battery cable. 2. Turn the ignition switch to the ON position. 3. Use the <i>J 39200</i> to measure the voltage from the SDM harness connector terminal 41 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	<i>Go to Step 22</i>	<i>Go to Step 21</i>

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Fig. 80: DTC 73: Driver Side Impact Sensor Short To Voltage (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
21	Repair the short to voltage condition in CKT B41 between the body harness side of the LH door electrical connector C500 and SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
22	Use the <i>J 39200</i> to measure the voltage from the SDM harness connector terminal 42 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	<i>Go to Step 24</i>	<i>Go to Step 23</i>
23	Repair the short to voltage condition in CKT XB42 between the body harness side of the LH door electrical connector and SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
24	1. Turn the ignition switch to the OFF position. 2. Zero the <i>J 39200</i> . 3. Use the <i>J 39200</i> to measure the resistance between the LH door electrical connector terminal 40 and the SDM harness connector terminal 41. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 26</i>	<i>Go to Step 25</i>
25	Repair the high resistance condition in CKT B41 between the body harness side of the LH door electrical connector and SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
26	Measure the resistance between the LH door electrical connector terminal 39 and the SDM harness connector terminal 42. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Integrity Check</i>	<i>Go to Step 27</i>
27	Repair the high resistance condition in CKT XB42 between the LH door electrical connector and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
28	Reconnect all the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	<i>Go to Step 29</i>	—
29	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 81: DTC 73: Driver Side Impact Sensor Short To Voltage (3 Of 3)
Courtesy of GENERAL MOTORS CORP.

DTC 74: DRIVER SIDE IMPACT SENSOR SHORT TO GROUND

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground in driver SIS loop are above a specified value. This is caused by a short from SIS loop to ground.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A SIS circuit short to ground can cause an intermittent condition. Inspect circuits B41, B42 and XB42 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 82 and Fig. 83 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References**7**

Checks if malfunction is a short to ground in circuit B42 in left door electrical harness.

9

Checks if malfunction is a short to ground in circuit XB42 in left door electrical harness.

16

Checks if malfunction is a short to ground in circuit B41.

18

Checks if malfunction is short to ground in circuit XB42 between left door electrical connector and SDM harness connector.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the driver seat back cover. 4. Disconnect the inflatable restraint driver seat module yellow 2-way integral connector. 5. Disconnect the LH door electrical connector C500. 6. Check for proper connection at terminal 39 and terminal 40 on the door side of C500. Are the terminals damaged or corroded?	—	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	Replace the LH door electrical harness. Is the replacement complete?	---	<i>Go to Step 4</i>	—
4	Check for proper connection of terminal 39 and terminal 40 on the harness side of the LH door electrical connector C500. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 20</i>
5	Check for proper connection of terminal 39 and terminal 40 on the harness side of the LH door electrical connector C500. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the body harness Is the replacement complete?	---	<i>Go to Step 20</i>	—
7	1. Disconnect the inflatable restraint side impact sensor (LH). 2. Use the <i>J 39200</i> to measure the resistance from the LH side impact sensor 2-way connector terminal 1 to a known good ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 8</i>	<i>Go to Step 9</i>
8	Repair the short to ground in CKT B42 between the LH door side impact sensor 2-way connector terminal 1 and terminal 40 of the LH door electrical connector C500. Is the repair complete?	—	<i>Go to Step 20</i>	—
9	Use the <i>J 39200</i> to measure the resistance from the LH side impact sensor 2-way connector terminal 2 to a known good ground. Is the resistance reading less than the specified value?	OL	<i>Go to Step 10</i>	<i>Go to Step 11</i>
10	Repair the short to ground condition in CKT XB42 between the LH door side impact sensor 2-way connector terminal 2 and terminal 39 of the LH door electrical connector C500. Is the repair complete?	—	<i>Go to Step 20</i>	—
11	1. Disconnect the negative battery cable. 2. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 3. Check for proper connection at terminal 41 and terminal 42 of the SDM harness connector. Are the terminals damaged or corroded?	—	<i>Go to Step 12</i>	<i>Go to Step 14</i>

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Fig. 82: DTC 74: Driver Side Impact Sensor Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
12	Repair the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) harness connector. Is the repair complete?	—	Go to Step 13	—
13	Check for proper connection at terminal 41 and terminal 42. Are the terminals damaged or corroded?	—	Go to Step 15	Go to Step 20
14	Check for proper connection at terminal 41 and terminal 42. Are the terminals damaged or corroded?	—	Go to Step 15	Go to Step 16
15	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	Go to Step 20	—
16	Use the J 39200 to measure the resistance from the SDM harness connector terminal 41 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	Go to Step 17	Go to Step 18
17	Repair the short to ground condition in CKT B41 between the body harness side of the LH door electrical connector C500 and SDM harness connector. Is the repair complete?	—	Go to Step 20	—
18	Use the J 39200 to measure the resistance from the SDM harness connector terminal 42 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	Go to Step 19	Go to Integrity Check
19	Repair the short to ground condition in CKT XB42 between the body harness side of the LH door electrical connector C500 and SDM harness connector. Is the repair complete?	—	Go to Step 20	—
20	Reconnect all the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to Step 21	—
21	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 83: DTC 74: Driver Side Impact Sensor Short To Ground (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 75: DRIVER SIDE IMPACT AIR BAG SHORT TO GROUND

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when neither side impact air bag circuit is open, ignition is within normal voltage range, and measured leakage currents to ground in driver side impact deployment loop are above specified value.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool.

Diagnostic Aids

A frontal driver-side air bag short to ground or short circuit between communication signal return line of left or right SIS can cause intermittent condition. Inspect circuits XB100, AB11, XB42 and XM430 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 84 and Fig. 85 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Isolates malfunction to one side of driver side impact module integral connector.

4

Isolates malfunction to one side of driver side impact module harness connector.

11

Checks for malfunction in circuit AB11.

13

Checks for malfunction in circuit XB100.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the driver seat back cover. 4. Disconnect the inflatable restraint driver seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint driver seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). Is a current DTC 75 displayed?	—	<i>Go to Step 4</i>	<i>Go to Step 3</i>
3	Replace the inflatable restraint driver seat module. Is the replacement complete?	—	<i>Go to Step 15</i>	—
4	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint driver seat module yellow 2-way harness connector C208 located under the LH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint driver seat module 2-way integral connector. 5. Turn the ignition switch to the ON position. 6. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). Is a current DTC 75 displayed?	—	<i>Go to Step 6</i>	<i>Go to Step 5</i>
5	Replace the inflatable restraint driver seat harness. Is the replacement complete?	—	<i>Go to Step 15</i>	—
6	1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 10 and terminal 11 on the SDM harness connector. Is the harness connector damaged or corroded?	—	<i>Go to Step 7</i>	<i>Go to Step 9</i>
7	Replace the IP harness. Are the repairs complete?	—	<i>Go to Step 8</i>	—
8	Check for proper connection at terminals 10 and 11 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 10</i>	<i>Go to Step 15</i>
9	Check for proper connection at terminals 10 and 11 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 10</i>	<i>Go to Step 11</i>

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Fig. 84: DTC 75: Driver Side Air Bag Deployment Loop Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
10	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	<i>Go to Step 15</i>	—
11	1. Insert <i>J 42113</i> Shorting Bar Tool into the SDM harness connector terminal above terminals 10 and 11 on the SDM harness connect 2. Use the <i>J 39200</i> to measure the resistance on the SDM harness connector from terminal 11 to terminal 7 (ground). Is the measured resistance less than the specified value?	OL	<i>Go to Step 12</i>	<i>Go to Step 13</i>
12	Repair the short to ground condition in CKT AB11. Is the repair complete?	—	<i>Go to Step 15</i>	—
13	Use the <i>J 39200</i> to measure the resistance on the SDM harness connector from terminal 10 to terminal 7 (ground). Is the measured resistance less than the specified value?	OL	<i>Go to Step 14</i>	<i>Go to Integrity Check</i>
14	Repair the short to ground condition in CKT XB100. Is the repair complete?	—	<i>Go to Step 15</i>	—
15	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	<i>Go to Step 16</i>	—
16	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 85: DTC 75: Driver Side Air Bag Deployment Loop Short To Ground (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 76: DRIVER SIDE AIR BAG SHORT TO VOLTAGE

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when neither side impact air bag circuit is open, ignition is within normal voltage range, and measured leakage currents to system voltage in driver-side deployment loop are above specified value.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool.

Diagnostic Aids

A short circuit to a voltage source in driver side impact module circuit or short circuit between communication signal line of left or right SIS can set DTC. Inspect circuits XB100 and AB11 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged. If DTCs 73 and 76 are set, also inspect circuit B41. If DTCs 76 and 83 are set, also inspect circuit M44.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig.

86 and Fig. 87 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Isolates malfunction to one side of driver side impact module integral connector.

4

Isolates malfunction to one side of driver side impact module harness connector.

11

Checks for malfunction in circuit AB11.

13

Checks for malfunction in circuit XB100.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	<ol style="list-style-type: none"> Turn the ignition switch OFF. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. Remove the driver seat back cover. Disconnect the inflatable restraint driver seat module 2-way integral connector. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint driver seat module 2-way integral connector. Turn the ignition switch to the ON position. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). 	—		
	Is a current DTC 76 displayed?		Go to Step 4	Go to Step 3
3	Replace the inflatable restraint driver seat module.	—		—
	Is the replacement complete?		Go to Step 15	
4	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. Disconnect the inflatable restraint driver seat module yellow 2-way harness connector C208 located under the LH seat track cover. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint driver seat module 2-way integral connector. Turn the ignition switch to the ON position. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). 	—		
	Is a current DTC 76 displayed?		Go to Step 6	Go to Step 5
5	Replace the inflatable restraint driver seat harness.	—		—
	Is the replacement complete?		Go to Step 15	
6	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Disconnect the J 38715-A. Disconnect the SDM. Check for proper connection at terminal 10 and terminal 11 on the SDM harness connector. 	—		
	Is the harness connector damaged or corroded?		Go to Step 7	Go to Step 9
7	Replace the IP harness.	—		—
	Are the repairs complete?		Go to Step 8	
8	Check for proper connection at terminals 10 and 11 on the SDM.	—		
	Are the terminals damaged or corroded?		Go to Step 10	Go to Step 15
9	Check for proper connection at terminals 10 and 11 on the SDM.	—		
	Are the terminals damaged or corroded?		Go to Step 10	Go to Step 11

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Fig. 86: DTC 76: Driver Side Air Bag Deployment Loop Short To Voltage (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
10	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	---	Go to Step 15	---
11	1. Insert <i>J 42113</i> Shorting Bar Tool into the SDM harness connector terminal above terminals 10 and 11 on the SDM harness connect 2. Turn the ignition switch to the ON position. 3. Use the <i>J 39200</i> to measure the voltage on the SDM harness connector from terminal 11 to terminal 7 (ground). Is the voltage reading less than the specified value?	1 V	Go to Step 13	Go to Step 12
12	1. Turn the ignition switch OFF. 2. Repair the short to voltage condition in CKT AB11. Is the repair complete?	---	Go to Step 15	---
13	Use the <i>J 39200</i> to measure the voltage on the SDM harness connector from terminal 10 to terminal 7 (ground). Is the voltage reading less than the specified value?	1 V	Go to Integrity Check	Go to Step 14
14	1. Turn the ignition switch OFF. 2. Repair the short to voltage condition in CKT XB100. Is the repair complete?	---	Go to Step 15	---
15	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	---	Go to Step 16	---
16	Clear all the SIR DTCs. Have all the DTCs been cleared?	---	Go to SIR Diagnostic System Check	---

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Fig. 87: DTC 76: Driver Side Air Bag Deployment Loop Short To Voltage (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 77: DRIVER SIDE IMPACT AIR BAG DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when driver side impact deployment loop resistance is greater than 4.4 ohms

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool. If resistance in driver side impact air bag module circuit is less than 4.4 ohms, a current DTC 77 will change to a history DTC 77 which may be cleared using scan tool.

Diagnostic Aids

A poor connection at driver side impact air bag module integral 2-pin connector, driver side impact air bag module Yellow 2-pin connector, SDM terminals No. 10 or 11, or wire to terminal connections in circuits XB100 or AB11 can cause an intermittent condition. Inspect circuits XB100 and AB11 for cutting or chafing. Comparing value of LEFT SIDE AIR BAG RESISTANCE over multiple ignition cycles can be helpful in determining intermittent

condition.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 88 and Fig. 89 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Determines deployment loop resistance measured by SDM.

3

Isolates malfunction to one side of driver side impact air bag module integral connector.

5

Isolates malfunction to one side of driver side impact air bag module harness connector.

12

Checks if malfunction is in circuit AB11.

14

Checks if malfunction is in circuit XB100.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the driver side air bag deployment loop resistance LH SIDE AIR BAG RESIST. Has LH SIDE AIR BAG RESIST. been read and recorded on the repair order?	—	<i>Go to Step 3</i>	—
3	1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the driver seat back cover. 4. Disconnect the inflatable restraint driver seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint driver seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Using the scan tool, request the data list display. 8. Read the driver side air bag deployment loop resistance LH SIDE AIR BAG RESIST. Is LH SIDE AIR BAG RESIST. more than the specified value?	3.0 Ω	<i>Go to Step 5</i>	<i>Go to Step 4</i>
4	Replace the inflatable restraint driver seat module. Is the replacement complete?	—	<i>Go to Step 16</i>	
5	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint driver seat module yellow 2-way harness connector C208 located under the LH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint driver seat module 2-way connector C208. 5. Turn the ignition switch to the ON position. 6. Using the scan tool, request the data list display. 7. Read the driver side air bag deployment loop resistance LH SIDE AIR BAG RESIST. Is the driver side air bag deployment loop resistance more than the specified value?	3.0 Ω	<i>Go to Step 7</i>	<i>Go to Step 6</i>
6	Replace the inflatable restraint driver seat harness. Is the replacement complete?	—	<i>Go to Step 16</i>	—

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Fig. 88: DTC 77: Driver Side Impact Air Bag Deployment Loop Resistance High (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
7	1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 10 and terminal 11 on the SDM harness connector. Is the harness connector damaged or corroded?	---	Go to Step 8	Go to Step 10
8	Replace the IP harness. Are the repairs complete?	---	Go to Step 9	---
9	Check for proper connection at terminals 10 and 11 on the SDM. Are the terminals damaged or corroded?	---	Go to Step 11	Go to Step 16
10	Check for proper connection at terminals 10 and 11 on the SDM. Are the terminals damaged or corroded?	---	Go to Step 11	Go to Step 12
11	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	---	Go to Step 16	---
12	1. Insert J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 10 and 11 on the SDM harness connect 2. Use the J 39200 to measure the resistance from the SDM harness connector terminal 11 to the inflatable restraint driver seat module 2-way connector C208 terminal 1. Is the resistance reading within the specified values?	0-0.5 Ω	Go to Step 14	Go to Step 13
13	Repair the open circuit or high resistance condition in CKT AB11. Is the repair complete?	---	Go to Step 16	---
14	Use the J 39200 to measure the resistance from the SDM harness connector terminal 10 to the inflatable restraint driver seat module 2-way connector C208 terminal 2 Is the resistance reading within the specified values?	0-0.5 Ω	Go to Integrity Check	Go to Step 15
15	Repair the open circuit or high resistance condition in CKT XB100. Is the repair complete?	---	Go to Step 16	---
16	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	---	Go to Step 17	---
17	Clear all the SIR DTCs. Have all the DTCs been cleared?	---	Go to SIR Diagnostic System Check	---

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Fig. 89: DTC 77: Driver Side Impact Air Bag Deployment Loop Resistance High (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 78: DRIVER SIDE IMPACT AIR BAG DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side impact air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when driver side impact deployment loop resistance is less than 1.1 ohms.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool. If resistance of driver side impact air bag module circuit is greater than 1.1 ohms, a current DTC 78 will change to a history DTC 78 which may be cleared using scan tool.

Diagnostic Aids

A short circuit between circuits XB100 and AB11 can cause an intermittent condition. Check shorting bar in driver side impact side impact air bag module. Check shorting bar on SDM harness connector above SDM harness terminals No. 10 and 11. Check shorting bar in driver side impact air bag module Yellow 2-pin connector. Check shorting bar in Yellow 2-pin in line connector. Inspect circuits XB100 and AB11 for cutting or chafing. Comparing value of LEFT SIDE AIR BAG RESISTANCE over multiple ignition cycles can be helpful in determining intermittent condition.

NOTE: **Following step references refer to test step numbers on diagnostic chart. See Fig. 90 and Fig. 91 . For circuit number and wire color identification, see WIRING DIAGRAMS .**

Diagnostic Chart Step References**2**

Determines deployment loop resistance measured by SDM.

3

Isolates malfunction to one side of driver side impact air bag module integral connector.

5

Isolates malfunction to one side of driver side impact air bag module harness connector.

12

Checks for short between circuits AB11 and XB100.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the driver side air bag deployment loop resistance LH SIDE AIR BAG RESIST. Has LH SIDE AIR BAG RESIST. been read and recorded on the repair order?	—	<i>Go to Step 3</i>	—
3	1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the driver seat back cover. 4. Disconnect the inflatable restraint driver seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint driver seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Using the scan tool, request the data list display. 8. Read the driver side air bag deployment loop resistance LH SIDE AIR BAG RESIST. Is LH SIDE AIR BAG RESIST. less than the specified value?	1.1 Ω	<i>Go to Step 5</i>	<i>Go to Step 4</i>
4	Replace the inflatable restraint driver seat module. Is the replacement complete?	—	<i>Go to Step 14</i>	—
5	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint driver seat module yellow 2-way harness connector C208 located under the LH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint driver seat module 2-way connector C208. 5. Turn the ignition switch to the ON position. 6. Using the scan tool, request the data list display. 7. Read the driver side air bag deployment loop resistance LH SIDE AIR BAG RESIST. Is the driver side air bag deployment loop resistance less than the specified value?	1.1 Ω	<i>Go to Step 7</i>	<i>Go to Step 6</i>
6	Replace the inflatable restraint driver seat harness. Is the replacement complete?	—	<i>Go to Step 14</i>	—

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Fig. 90: DTC 78: Driver Side Impact Air Bag Deployment Loop Resistance Low (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
7	1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 10 and terminal 11 on the SDM harness connector. Is the harness connector damaged or corroded?	—	Go to Step 8	Go to Step 10
8	Replace the IP harness. Are the repairs complete?	—	Go to Step 9	—
9	Check for proper connection at terminals 10 and 11 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 11	Go to Step 14
10	Check for proper connection at terminals 10 and 11 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 11	Go to Step 12
11	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	Go to Step 14	—
12	1. Insert J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 10 and 11 on the SDM harness connect 2. Use the J 39200 to measure the resistance from the SDM harness connector terminal 10 to terminal 11. Is the resistance reading within the specified values?	0–0.5 Ω	Go to Step 13	Go to Integrity Check
13	Repair the short circuit between CKT AB11 and CKT XB100. Is the repair complete?	—	Go to Step 14	—
14	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to Step 15	—
15	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 91: DTC 78: Driver Side Impact Air Bag Deployment Loop Resistance Low (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 81: PASSENGER SIDE IMPACT SENSOR COMMUNICATIONS INVALID

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and an internal fault exists in passenger SIS.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Diagnostic Aids

A SIS circuit short to ground can cause an intermittent condition. Inspect circuits M41, M42, XM430 and XM42 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See **Fig. 92** . For circuit number and wire color identification, see **WIRING DIAGRAMS** .

Diagnostic Chart Step References

2

Checks communication status of passenger SIS.

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	1. Turn the ignition switch to OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record the repair order the communication status of the passenger side impact sensor PASS SIS MESSAGE STATUS. Does PASS SIS MESSAGE STATUS display the specified value?	NOK	Go to Step 3	Go to Integrity Check
3	Replace the inflatable restraint side impact sensor (RH). Is the replacement complete?	—	Go to Step 4	—
4	Reconnect all the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to Step 5	—
5	Clear all the SIR DTCs. Have all the SIR DTCs been cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 92: DTC 81: Passenger Side Impact Sensor Communications Invalid
Courtesy of GENERAL MOTORS CORP.

DTC 83: PASSENGER SIDE IMPACT SENSOR SHORT TO VOLTAGE

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and systems voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range, and measured leakage currents to system voltage or loop resistance of passenger SIS loop are above a specified value. This is caused by a short from passenger SIS loop to system voltage or an open or high resistance condition in passenger SIS loop.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A passenger SIS circuit short to ground can cause an intermittent condition. Inspect circuits M44, M42, XM430 and XM42 for cutting or chafing. Inspect circuits and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 93 -Fig. 95 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

7

Checks if malfunction is a short to voltage in circuit M42 in right door electrical harness.

9

Checks if malfunction is a short to voltage in circuit XM42 in right door electrical harness.

11

Checks if malfunction is a high resistance in circuit M42 in right door electrical harness.

13

Checks if malfunction is high resistance in circuit XM42 in right door electrical harness.

20

Checks if malfunction is short to voltage in circuit M44.

22

Checks if malfunction is short to voltage in circuit XM430 between right door electrical connector and SDM harness connector.

24

Checks if malfunction is high resistance in circuit M44.

26

Checks if malfunction is high resistance in circuit XM430 between right door electrical connector and SDM harness connector.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the front passenger seat back cover. 4. Disconnect the inflatable restraint passenger seat module yellow 2-way integral connector. 5. Disconnect the RH door electrical connector C600. 6. Check for proper connection at terminal 39 and terminal 40 on the door side of C600. Are the terminals damaged or corroded?	—	<i>Go to Step 3</i>	<i>Go to Step 5</i>
3	Replace the RH door electrical harness. Is the replacement complete?	—	<i>Go to Step 4</i>	—
4	Check for proper connection of terminal 39 and terminal 40 on the harness side of the RH door electrical connector C600. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 28</i>
5	Check for proper connection of terminal 39 and terminal 40 on the harness side of the RH door electrical connector C600. Are the terminals damaged and/or corroded?	—	<i>Go to Step 6</i>	<i>Go to Step 7</i>
6	Replace the body harness Is the replacement complete?	—	<i>Go to Step 28</i>	—
7	1. Disconnect the inflatable restraint side impact sensor (RH). 2. Turn the ignition switch to the ON position. 3. Use the J 39200 to measure the voltage from the RH side impact sensor 2-way connector terminal 1 to a known good ground. Is the measured voltage less than the specified value?	1 V	<i>Go to Step 9</i>	<i>Go to Step 8</i>

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Fig. 93: DTC 83: Passenger Side Impact Sensor Short To Voltage (1 Of 3)
 Courtesy of GENERAL MOTORS CORP.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
8	Repair the short to voltage in CKT M42 between the RH door side impact sensor 2-way connector terminal 1 and terminal 40 of the RH door electrical connector C600. Is the repair complete?	—	<i>Go to Step 28</i>	—
9	Use the <i>J 39200</i> to measure the voltage from the RH side impact sensor 2-way connector terminal 2 to a known good ground. Is the measured voltage less than the specified value?	1 V	<i>Go to Step 10</i>	<i>Go to Step 11</i>
10	Repair the short to voltage in CKT XM42 between the RH door side impact sensor 2-way connector terminal 2 and terminal 39 of the RH door electrical connector C600. Is the repair complete?	—	<i>Go to Step 28</i>	—
11	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the SDM have discharged. 3. Zero the <i>J 39200</i> . 4. Use the <i>J 39200</i> to measure the resistance from the RH side impact sensor 2-way connector terminal 1 to terminal 40 of the RH door electrical connector C600. Is the resistance reading within the specified values?	0-0.5 Ω	<i>Go to Step 13</i>	<i>Go to Step 12</i>
12	Repair the high resistance condition in CKT M42. Is the repair complete?	—	<i>Go to Step 28</i>	—
13	1. Zero the <i>J 39200</i> . 2. Use the <i>J 39200</i> to measure the resistance from the RH side impact sensor 2-way connector terminal 2 to terminal 39 of the RH door electrical connector C600. Is the resistance reading within the specified values?	0-0.5 Ω	<i>Go to Step 15</i>	<i>Go to Step 14</i>
14	Repair the high resistance condition in CKT XM42 between the RH side impact sensor 2-way connector and the RH door electrical connector C600. Is the repair complete?	—	<i>Go to Step 28</i>	—
15	1. Disconnect the negative battery cable. 2. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 3. Check for proper connection at terminal 43 and terminal 44 of the SDM harness connector. Are the terminals damaged or corroded?	—	<i>Go to Step 16</i>	<i>Go to Step 18</i>
16	Replace the IP harness. Is the replacement complete?	—	<i>Go to Step 17</i>	—
17	Check for proper connection at terminal 43 and terminal 44 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 19</i>	<i>Go to Step 28</i>
18	Check for proper connection at terminal 43 and terminal 43 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 19</i>	<i>Go to Step 20</i>

98D13964

Fig. 94: DTC 83: Passenger Side Impact Sensor Short To Voltage (2 Of 3)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
19	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 28</i>	—
20	1. Reconnect the negative battery cable. 2. Turn the ignition switch to the ON position. 3. Use the <i>J 39200</i> to measure the voltage from the SDM harness connector terminal 44 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	<i>Go to Step 22</i>	<i>Go to Step 21</i>
21	Repair the short to voltage condition in CKT M44 between the body harness side of the RH door electrical connector C600 and SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
22	Use the <i>J 39200</i> to measure the voltage from the SDM harness connector terminal 43 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	<i>Go to Step 24</i>	<i>Go to Step 23</i>
23	Repair the short to voltage condition in CKT XM430 between the body harness side of the RH door electrical connector and SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
24	1. Turn the ignition switch to the OFF position. 2. Zero the <i>J 39200</i> . 3. Use the <i>J 39200</i> to measure the resistance between the RH door electrical connector terminal 40 and the SDM harness connector terminal 44. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Step 26</i>	<i>Go to Step 25</i>
25	Repair the high resistance condition in CKT M44 between the body harness side of the RH door electrical connector and SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
26	Measure the resistance between the RH door electrical connector terminal 39 and the SDM harness connector terminal 43. Is the resistance reading within the specified values?	0–0.5 Ω	<i>Go to Integrity Check</i>	<i>Go to Step 27</i>
27	Repair the high resistance condition in CKT XM430 between the RH door electrical connector and the SDM harness connector. Is the repair complete?	—	<i>Go to Step 28</i>	—
28	Reconnect all the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	<i>Go to Step 29</i>	—
29	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

98B13962

Fig. 95: DTC 83: Passenger Side Impact Sensor Short To Voltage (3 Of 3)

Courtesy of GENERAL MOTORS CORP.

DTC 84: PASSENGER SIDE IMPACT SENSOR SHORT TO GROUND

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground and system voltage in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM then goes into CONTINUOUS MONITORING mode. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when ignition is within normal voltage range and measured leakage currents to ground in passenger SIS loop are above a specified value. This is caused by a short from SIS loop to ground.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, history DTC will set. History DTC may be cleared using scan tool.

Diagnostic Aids

A SIS circuit short to ground can cause an intermittent condition. Inspect circuits M44, M42, XM430 and XM42 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 96 and Fig. 97 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

7

Checks if malfunction is a short to ground in circuit M42 in right door electrical harness.

9

Checks if malfunction is a short to ground in circuit XM42 in right door electrical harness.

16

Checks if malfunction is a short to ground in circuit M44.

18

Checks if malfunction is short to ground in circuit XM430 between right door electrical connector and SDM harness connector.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic System Check performed?	—	Go to Step 2	Go to SIR Diagnostic System Check
2	<ol style="list-style-type: none"> Turn the ignition switch to the OFF position. Wait 1 minute until the capacitors in the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. Remove the front passenger seat back cover. Disconnect the inflatable restraint passenger seat module yellow 2-way integral connector. Disconnect the RH door electrical connector C600. Check for proper connection at terminal 39 and terminal 40 on the door side of C600. <p>Are the terminals damaged or corroded?</p>	—	Go to Step 3	Go to Step 5
3	Replace the RH door electrical harness. Is the replacement complete?	—	Go to Step 4	—
4	Check for proper connection of terminal 39 and terminal 40 on the harness side of the RH door electrical connector C600. Are the terminals damaged and/or corroded?	—	Go to Step 6	Go to Step 20
5	Check for proper connection of terminal 39 and terminal 40 on the harness side of the RH door electrical connector C600. Are the terminals damaged and/or corroded?	—	Go to Step 6	Go to Step 7
6	Replace the body harness Is the replacement complete?	—	Go to Step 20	—
7	<ol style="list-style-type: none"> Disconnect the inflatable restraint side impact sensor (RH). Use the J 39200 to measure the resistance from the RH side impact sensor 2-way connector terminal 1 to a known good ground. <p>Is the resistance reading less than the specified value?</p>	OL	Go to Step 8	Go to Step 9
8	Repair the short to ground in CKT M42 between the RH door side impact sensor 2-way connector terminal 1 and terminal 40 of the RH door electrical connector C600. Is the repair complete?	—	Go to Step 20	—
9	Use the J 39200 to measure the resistance from the RH side impact sensor 2-way connector terminal 2 to a known good ground. Is the resistance reading less than the specified value?	OL	Go to Step 10	Go to Step 11
10	Repair the short to ground condition in CKT XM42 between the RH door side impact sensor 2-way connector terminal 2 and terminal 39 of the RH door electrical connector C600. Is the repair complete?	—	Go to Step 20	—

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Fig. 96: DTC 84: Passenger Side Impact Sensor Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
11	1. Disconnect the negative battery cable. 2. Disconnect the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). 3. Check for proper connection at terminal 43 and terminal 44 of the SDM harness connector. Are the terminals damaged or corroded?	—	<i>Go to Step 12</i>	<i>Go to Step 14</i>
12	Repair the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) harness connector. Is the repair complete?	—	<i>Go to Step 13</i>	—
13	Check for proper connection at terminal 43 and terminal 44. Are the terminals damaged or corroded?	—	<i>Go to Step 15</i>	<i>Go to Step 20</i>
14	Check for proper connection at terminal 43 and terminal 44. Are the terminals damaged or corroded?	—	<i>Go to Step 15</i>	<i>Go to Step 16</i>
15	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Is the replacement complete?	—	<i>Go to Step 20</i>	—
16	Use the <i>J 39200</i> to measure the resistance from the SDM harness connector terminal 44 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	<i>Go to Step 17</i>	<i>Go to Step 18</i>
17	Repair the short to ground condition in CKT M44 between the body harness side of the RH door electrical connector C600 and SDM harness connector. Is the repair complete?	—	<i>Go to Step 20</i>	—
18	Use the <i>J 39200</i> to measure the resistance from the SDM harness connector terminal 43 to terminal 7 (ground). Is the resistance reading less than the specified value?	OL	<i>Go to Step 19</i>	<i>Go to Integrity Check</i>
19	Repair the short to ground condition in CKT XM430 between the body harness side of the RH door electrical connector C800 and SDM harness connector. Is the repair complete?	—	<i>Go to Step 20</i>	—
20	Reconnect all the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	<i>Go to Step 21</i>	
21	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 97: DTC 84: Passenger Side Impact Sensor Short To Ground (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 85: PASSENGER SIDE IMPACT AIR BAG SHORT TO GROUND

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when neither side impact air bag circuit is open, ignition is within normal voltage range, and measured leakage currents to ground in passenger side impact deployment loop are above specified value.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool.

Diagnostic Aids

A passenger side impact air bag module short to ground or short circuit between communication signal return line of left or right SIS can cause intermittent condition. Inspect circuits AM13, XM14, XB42 and XM430 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 98 and Fig. 99 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References**2**

Isolates malfunction to one side of passenger side impact module integral connector.

4

Isolates malfunction to one side of passenger side impact module harness connector.

11

Checks for malfunction in circuit AM13.

13

Checks for malfunction in circuit XM14.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> 1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the passenger seat back cover. 4. Disconnect the inflatable restraint passenger seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint passenger seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). 	—		
	Is a current DTC 85 displayed?		<i>Go to Step 4</i>	<i>Go to Step 3</i>
3	Replace the inflatable restraint passenger seat module.	—		—
	Is the replacement complete?		<i>Go to Step 15</i>	
4	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint passenger seat module yellow 2-way harness connector C209 located under the RH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint passenger seat module 2-way integral connector. 5. Turn the ignition switch to the ON position. 6. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). 	—		
	Is a current DTC 85 displayed?		<i>Go to Step 6</i>	<i>Go to Step 5</i>
5	Replace the inflatable restraint passenger seat harness.	—		—
	Is the replacement complete?		<i>Go to Step 15</i>	
6	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 13 and terminal 14 on the SDM harness connector. 	—		
	Is the harness connector damaged or corroded?		<i>Go to Step 7</i>	<i>Go to Step 9</i>

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Fig. 98: DTC 85: Passenger Side Impact Air Bag Deployment Loop Short To Ground (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
7	Replace the IP harness. Are the repairs complete?	—	<i>Go to Step 8</i>	---
8	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 10</i>	<i>Go to Step 15</i>
9	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 10</i>	<i>Go to Step 11</i>
10	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	<i>Go to Step 15</i>	—
11	1. Insert <i>J 42113</i> Shorting Bar Tool into the SDM harness connector terminal above terminals 13 and 14 on the SDM harness connect 2. Use the <i>J 39200</i> to measure the resistance on the SDM harness connector from terminal 13 to terminal 7 (ground). Is the measured resistance less than the specified value?	OL	<i>Go to Step 12</i>	<i>Go to Step 13</i>
12	Repair the short to ground condition in CKT AM13. Is the repair complete?	—	<i>Go to Step 15</i>	—
13	Use the <i>J 39200</i> to measure the resistance on the SDM harness connector from terminal 14 to terminal 7 (ground). Is the measured resistance less than the specified value?	OL	<i>Go to Step 14</i>	<i>Go to Integrity Check</i>
14	Repair the short to ground condition in CKT XM14. Is the repair complete?	—	<i>Go to Step 15</i>	—
15	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	<i>Go to Step 16</i>	—
16	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 99: DTC 85: Passenger Side Impact Air Bag Deployment Loop Short To Ground (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 86: PASSENGER SIDE AIR BAG SHORT TO VOLTAGE

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. Upon passing these tests, if energy reserve is charged up, firing transistors are tested. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when neither side impact air bag circuit is open, ignition is within normal voltage range, and measured leakage currents to system voltage in passenger-side deployment loop are above specified value.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool.

Diagnostic Aids

A short circuit to a voltage source in passenger side impact module circuit or short circuit between communication

signal line of left or right SIS can set DTC. Inspect circuits AM13 and XM14 for cutting or chafing. Inspect circuit and components to ensure that replacement SDM will not be damaged.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 100 and Fig. 101 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Isolates malfunction to one side of passenger side impact module integral connector.

4

Isolates malfunction to one side of passenger side impact module harness connector.

11

Checks for malfunction in circuit AM13.

13

Checks for malfunction in circuit XM14.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	<ol style="list-style-type: none"> 1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the passenger seat back cover. 4. Disconnect the inflatable restraint passenger seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint passenger seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). 	—		
	Is a current DTC 86 displayed?		<i>Go to Step 4</i>	<i>Go to Step 3</i>
3	Replace the inflatable restraint passenger seat module.	—		—
	Is the replacement complete?		<i>Go to Step 15</i>	
4	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint passenger seat module yellow 2-way harness connector C209 located under the RH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint passenger seat module 2-way integral connector. 5. Turn the ignition switch to the ON position. 6. Use the scan to request the SIR Diagnostic Trouble Codes (DTCs). 	—		
	Is a current DTC 86 displayed?		<i>Go to Step 6</i>	<i>Go to Step 5</i>
5	Replace the inflatable restraint passenger seat harness.	—		—
	Is the replacement complete?		<i>Go to Step 15</i>	
6	<ol style="list-style-type: none"> 1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 13 and terminal 14 on the SDM harness connector. 	—		
	Is the harness connector damaged or corroded?		<i>Go to Step 7</i>	<i>Go to Step 9</i>
7	Replace the IP harness.	—		—
	Are the repairs complete?		<i>Go to Step 8</i>	
8	Check for proper connection at terminals 13 and 14 on the SDM.	—		
	Are the terminals damaged or corroded?		<i>Go to Step 10</i>	<i>Go to Step 15</i>

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Fig. 100: DTC 86: Passenger Side Air Bag Deployment Loop Short To Voltage (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
9	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 10	Go to Step 11
10	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	Go to Step 15	—
11	1. Insert <i>J 42113</i> Shorting Bar Tool into the SDM harness connector terminal above terminals 13 and 14 on the SDM harness connect 2. Turn the ignition switch to the ON position. 3. Use the <i>J 39200</i> to measure the voltage on the SDM harness connector from terminal 13 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Step 13	Go to Step 12
12	1. Turn the ignition switch OFF. 2. Repair the short to voltage condition in CKT AM13. Is the repair complete?	—	Go to Step 15	—
13	Use the <i>J 39200</i> to measure the voltage on the SDM harness connector from terminal 14 to terminal 7 (ground). Is the measured voltage less than the specified value?	1 V	Go to Integrity Check	Go to Step 14
14	1. Turn the ignition switch OFF. 2. Repair the short to voltage condition in CKT XM14. Is the repair complete?	—	Go to Step 15	—
15	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to Step 16	—
16	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 101: DTC 86: Passenger Side Air Bag Deployment Loop Short To Voltage (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 87: PASSENGER SIDE IMPACT AIR BAG DEPLOYMENT LOOP RESISTANCE HIGH

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side air bag module and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

Conditions For Setting DTC

DTC sets when passenger side impact deployment loop resistance is greater than 4.4 ohms

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool. If resistance in passenger side impact air bag module circuit is less than 4.4 ohms, a current DTC 87 will change to a history DTC 87 which may be cleared using scan tool.

Diagnostic Aids

A poor connection at passenger side impact air bag module integral 2-pin connector, passenger side impact air bag module Yellow 2-pin connector, SDM terminals No. 13 or 14, or wire to terminal connections in circuits AM13 or

XM14 can cause an intermittent condition. Inspect circuits AM13 and XM14 for cutting or chafing. Comparing value of RIGHT SIDE AIR BAG RESISTANCE over multiple ignition cycles can be helpful in determining intermittent condition.

NOTE: Following step references refer to test step numbers on diagnostic chart. See Fig. 102 and Fig. 103 . For circuit number and wire color identification, see WIRING DIAGRAMS .

Diagnostic Chart Step References

2

Determines deployment loop resistance measured by SDM.

3

Isolates malfunction to one side of passenger side impact air bag module integral connector.

5

Isolates malfunction to one side of passenger side impact air bag module harness connector.

12

Checks if malfunction is in circuit AM13.

14

Checks if malfunction is in circuit XM14.

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AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the passenger side air bag deployment loop resistance RH SIDE AIR BAG RESIST. Has RH SIDE AIR BAG RESIST. been read and recorded on the repair order?	—	<i>Go to Step 3</i>	—
3	1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the passenger seat back cover. 4. Disconnect the inflatable restraint passenger seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint passenger seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Using the scan tool, request the data list display. 8. Read the passenger side air bag deployment loop resistance RH SIDE AIR BAG RESIST. Is RH SIDE AIR BAG RESIST. more than the specified value?	4.4 Ω	<i>Go to Step 5</i>	<i>Go to Step 4</i>
4	Replace the inflatable restraint passenger seat module. Is the replacement complete?	—	<i>Go to Step 16</i>	—
5	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint passenger seat module yellow 2-way harness connector C209 located under the RH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint passenger seat module 2-way connector C209. 5. Turn the ignition switch to the ON position. 6. Using the scan tool, request the data list display. 7. Read the passenger side air bag deployment loop resistance RH SIDE AIR BAG RESIST. Is the passenger side air bag deployment loop resistance more than the specified value?	4.4 Ω	<i>Go to Step 7</i>	<i>Go to Step 6</i>
6	Replace the inflatable restraint passenger seat harness. Is the replacement complete?	—	<i>Go to Step 16</i>	—

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Fig. 102: DTC 87: Passenger Side Impact Air Bag Deployment Loop Resistance High (1 Of 2)
 Courtesy of GENERAL MOTORS CORP.

1998 Cadillac Catera

AIR BAG RESTRAINT SYSTEM 1998 AIR BAG RESTRAINT SYSTEMS General Motors

Step	Action	Value(s)	Yes	No
7	1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 13 and terminal 14 on the SDM harness connector. Is the harness connector damaged or corroded?	—	<i>Go to Step 8</i>	<i>Go to Step 10</i>
8	Replace the IP harness. Are the repairs complete?	—	<i>Go to Step 9</i>	—
9	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 16</i>
10	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	<i>Go to Step 11</i>	<i>Go to Step 12</i>
11	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	<i>Go to Step 16</i>	—
12	1. Insert J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 13 and 14 on the SDM harness connect 2. Use the J 39200 to measure the resistance from the SDM harness connector terminal 13 to the inflatable restraint passenger seat module 2-way connector C209 terminal 1. Is the resistance reading within the specified values?	0-0.5 Ω	<i>Go to Step 14</i>	<i>Go to Step 13</i>
13	Repair the open circuit or high resistance condition in CKT AM13. Is the repair complete?	—	<i>Go to Step 16</i>	—
14	Use the J 39200 to measure the resistance from the SDM harness connector terminal 14 to the inflatable restraint passenger seat module 2-way connector C209 terminal 2 Is the resistance reading within the specified values?	0-0.5 Ω	<i>Go to Integrity Check</i>	<i>Go to Step 15</i>
15	Repair the open circuit or high resistance condition in CKT XM14. Is the repair complete?	—	<i>Go to Step 16</i>	—
16	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	<i>Go to Step 17</i>	—
17	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	<i>Go to SIR Diagnostic System Check</i>	—

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Fig. 103: DTC 87: Passenger Side Impact Air Bag Deployment Loop Resistance High (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

DTC 88: PASSENGER SIDE IMPACT AIR BAG DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

SDM performs tests to diagnose critical internal malfunctions when ignition switch is turned ON. SDM monitors 6 firing loops to detect leakage currents to ground in frontal and side impact air bag modules and seat belt pretensioner circuits. Deployment loop resistances are measured to ensure they are within normal ranges. SDM service wait time is one minute. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

Conditions For Setting DTC

DTC sets when passenger side impact deployment loop resistance is less than 1.1 ohms.

Action Taken

SDM sets DTC and turns on AIR BAG warning light.

Conditions For Clearing DTC

Current and history DTCs must be cleared using scan tool CLEAR CODES command. If circuit fault has been repaired and conditions which caused current DTC to set no longer exist, DTC may be cleared using scan tool. If resistance of passenger side impact air bag module circuit is greater than 1.1 ohms, a current DTC 88 will change to a history DTC 88 which may be cleared using scan tool.

Diagnostic Aids

A short circuit between circuits AM13 and XM14 can cause an intermittent condition. Check shorting bar in passenger side impact side impact air bag module. Check shorting bar on SDM harness connector above SDM harness terminals No. 13 and 14. Check shorting bar in passenger side impact air bag module Yellow 2-pin connector. Check shorting bar in Yellow 2-pin in line connector. Inspect circuits AM13 and XM14 for cutting or chafing. Comparing value of RIGHT SIDE AIR BAG RESISTANCE over multiple ignition cycles can be helpful in determining intermittent condition.

NOTE: **Following step references refer to test step numbers on diagnostic chart. See Fig. 104 and Fig. 105 . For circuit number and wire color identification, see WIRING DIAGRAMS .**

Diagnostic Chart Step References**2**

Determines deployment loop resistance measured by SDM.

3

Isolates malfunction to one side of passenger side impact air bag module integral connector.

5

Isolates malfunction to one side of passenger side impact harness connector.

12

Checks for short between circuits XM14 and AM13.

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Step	Action	Value(s)	Yes	No
1	Was the SIR Diagnostic Check performed?	—	<i>Go to Step 2</i>	<i>Go to SIR Diagnostic System Check</i>
2	1. Turn the ignition switch to the OFF position. 2. Connect a scan tool to the DLC. 3. Turn the ignition switch to the ON position. 4. Request the SIR data list display. 5. Read and record on the repair order the passenger side air bag deployment loop resistance RH SIDE AIR BAG RESIST. Has RH SIDE AIR BAG RESIST. been read and recorded on the repair order?	—	<i>Go to Step 3</i>	—
3	1. Turn the ignition switch OFF. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Remove the passenger seat back cover. 4. Disconnect the inflatable restraint passenger seat module 2-way integral connector. 5. Using the J 38715-30 adapter, connect the J 38715-A to the inflatable restraint passenger seat module 2-way integral connector. 6. Turn the ignition switch to the ON position. 7. Using the scan tool, request the data list display. 8. Read the passenger side air bag deployment loop resistance RH SIDE AIR BAG RESIST. Is RH SIDE AIR BAG RESIST. less than the specified value?	1.1 Ω	<i>Go to Step 5</i>	<i>Go to Step 4</i>
4	Replace the inflatable restraint passenger seat module. Is the replacement complete?	—	<i>Go to Step 14</i>	—

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Fig. 104: DTC 88: Passenger Side Impact Air Bag Deployment Loop Resistance Low (1 Of 2)
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Step	Action	Value(s)	Yes	No
5	1. Turn the ignition switch to the OFF position. 2. Wait 1 minute until the capacitors in the Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM) have discharged. 3. Disconnect the inflatable restraint passenger seat module yellow 2-way harness connector C208 located under the RH seat track cover. 4. Using the J 38715-55 adapter, connect 38715-A to the inflatable restraint passenger seat module 2-way connector C208. 5. Turn the ignition switch to the ON position. 6. Using the scan tool, request the data list display. 7. Read the passenger side air bag deployment loop resistance RH SIDE AIR BAG RESIST. Is the passenger side air bag deployment loop resistance less than the specified value?	1.1 Ω	Go to Step 7	Go to Step 6
6	Replace the inflatable restraint passenger seat harness. Is the replacement complete?	—	Go to Step 14	—
7	1. Turn the ignition switch to the OFF position. 2. Disconnect the J 38715-A. 3. Disconnect the SDM. 4. Check for proper connection at terminal 13 and terminal 14 on the SDM harness connector. Is the harness connector damaged or corroded?	—	Go to Step 8	Go to Step 10
8	Replace the IP harness. Are the repairs complete?	—	Go to Step 9	—
9	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 11	Go to Step 14
10	Check for proper connection at terminals 13 and 14 on the SDM. Are the terminals damaged or corroded?	—	Go to Step 11	Go to Step 12
11	Replace the inflatable restraint Sensing and Diagnostic and Seat Belt Pretensioner Module (SDM). Are the repairs complete?	—	Go to Step 14	—
12	1. Insert J 42113 Shorting Bar Tool into the SDM harness connector terminal above terminals 13 and 14 on the SDM harness connect 2. Use the J 39200 to measure the resistance from the SDM harness connector terminal 13 to terminal 14. Is the resistance reading within the specified values?	0–0.5 Ω	Go to Step 13	Go to Integrity Check
13	Repair the short circuit between CKT AM13 and CKT XM14. Is the repair complete?	—	Go to Step 14	—
14	Reconnect all of the SIR components, make sure all the components are properly mounted. Have all the SIR components been reconnected and properly mounted?	—	Go to Step 15	—
15	Clear all the SIR DTCs. Have all the DTCs been cleared?	—	Go to SIR Diagnostic System Check	—

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Fig. 105: DTC 88: Passenger Side Impact Air Bag Deployment Loop Resistance Low (2 Of 2)
 Courtesy of GENERAL MOTORS CORP.

WIRE REPAIR

SIR system requires special wiring repair procedures due to sensitive nature of circuitry. Wire Repair Kit (J-38125-A) contains special sealed splices for use in repairing SIR wiring. Splices use a heat shrink sleeve with sealing adhesive to produce a sealed splice and a cross-hatched core crimp to produce a positive contact for low energy circuits.

Repair damaged SIR wire harness connectors and terminals (except pigtailed) using connector repair assembly packs and splice crimping tool provided. Terminals in SIR system are manufactured from a special metal to provide necessary contact integrity for sensitive, low-energy circuits. These terminals are only available in connector repair assembly packs, and no other terminal should be substituted.

If individual terminals on SDM harness connector are damaged, SDM harness connector must be replaced using

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SDM harness connector pigtail assembly or SDM harness connector replacement kit. If individual terminals on any other SIR connector are damaged, entire connector must be replaced. Use appropriate connector repair assembly pack. Replace entire SIR wire harness, if necessary to maintain SIR circuit integrity.

DO NOT make wiring, connector or terminal repairs on components with wiring pigtails. If a wiring pigtail is damaged, entire component (including pigtail) should be replaced.

Any wiring other than a pigtail can be repaired by splicing in a new section of wire of same gauge. Sealed splices and crimping tool must be used for these splices. Open wire harness by removing tape as necessary, using a sewing seam ripper. Refer to instructions in kit for wiring repair procedure.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Seat Belt Pretensioner Bolts	26 (35)
Steering Wheel Nut	21 (28)
	INCH Lbs. (N.m)
Driver-Side Air Bag Module Screws	72 (8)
Side Impact Sensor (SIS) Fasteners	45 (5)
Side Air Bag Module Nuts	44 (5)
Passenger-Side Air Bag Module Fasteners	72 (8)
Sensing & Diagnostic Module (SDM) Fasteners	89 (10)

WIRING DIAGRAMS

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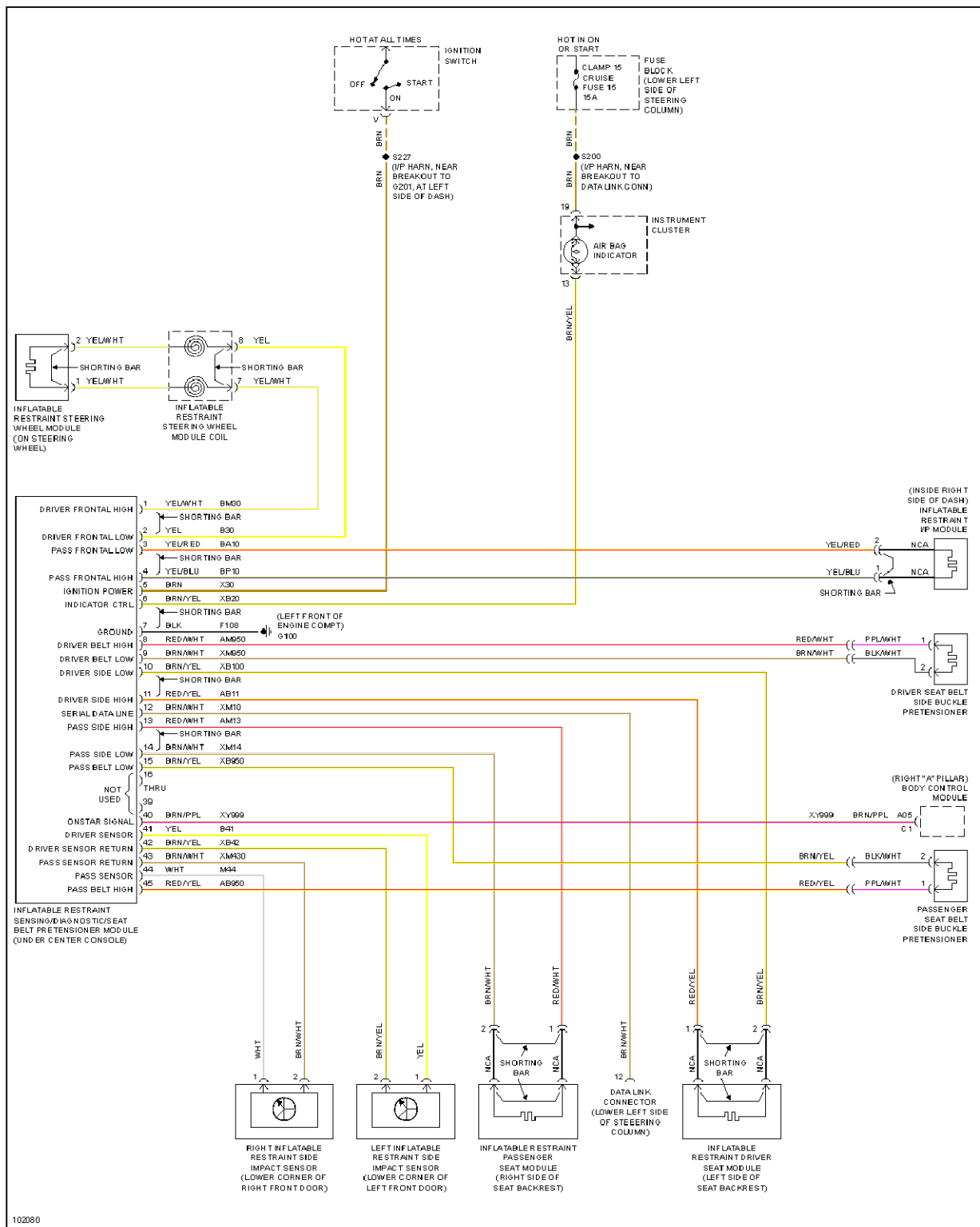


Fig. 106: SIR System Wiring Diagram

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