2000 ACCESSORIES/SAFETY EQUIPMENT

General Motors Corp. - Air Bag Restraint Systems

DESCRIPTION & OPERATION

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

SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM

Supplemental Inflatable Restraint (SIR) system is designed to supplement protection provided by driver and passenger-side seat belts. A frontal crash of sufficient force up to 30 degrees off center line of vehicle will deploy driver and passenger-side air bags. Steering column and knee bolsters below instrument panel also absorb crash energy.

SIR system consists of Sensing and Diagnostic Module (SDM), driver and passenger-side air bag modules, SIR coil assembly, Passenger SIR (PSIR) suppression switch, and AIR BAG warning light in instrument cluster.

SENSING & DIAGNOSTIC MODULE (SDM)

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 causes enough current flow through air bag modules to deploy air bags. SDM also maintains a 23 Volt Loop Reserve (23 VLR) energy supply to provide deployment energy for up to 10 minutes after loss of voltage.

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

AIR BAG WARNING LIGHT

Ignition switch applies battery voltage to AIR BAG warning light. SDM controls light by providing ground with a light driver. 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.

AIR BAG MODULES

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

PASSENGER SIR (PSIR) SUPPRESSION SWITCH

PSIR suppression switch allows passenger-side air bag module to be deactivated with key. When passenger-side air bag module is deactivated, an LED will be activated as a visual reminder that air bag is deactivated.

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 LOCATIONS

COMPONENT LOCATIONS

Component	Location
Air bag warning light	Instrument cluster
Driver air bag module	On steering wheel
Knee bolster	Driver & passenger-side lower instrument panel
Passenger air bag module	Passenger-side dash
Passenger Supplemental Restraint (PSIR) suppression switch	Inside glove box
Sensing & Diagnostic Module (SDM)	Under center of instrument panel
SIR coil	Within steering column

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.

AIR BAG SAFETY PRECAUTIONS

Observe the following precautions when working with SIR system:

- SDM maintains sufficient voltage to cause air bag deployment for up to 10 minutes after ignition switch is turned OFF, battery is disconnected, or fuse powering SDM is removed. In order to begin servicing immediately, inflator modules must be removed from deployment loop. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
- After repairs, ensure AIR BAG warning light is working properly and no system faults are indicated. See **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 SDM, SIR coil assembly, or air bag modules. If defective, these parts 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

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

RECOMMENDED TOOLS

Tool Name	Tool Number
Connector test adapter kit	J-35616-A
Digital multimeter	J-39200
Scan tool	Tech 2
Serial data link tester	J-42236
SIR deployment fixture	J39401-B
SIR deployment harness	J-38826
SIR driver-passenger load tool	J-38715-A
Steering wheel puller	J-1859-03
Terminal repair kit	J-38125-B

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. Hold coil assembly with face up. Depress spring lock and slowly rotate hub clockwise until hub stops. Coil ribbon should now be wound up snugly against center hub. Rotate coil hub slowly in opposite direction until centering window turns Yellow and both arrows line up. Release spring lock between locking tabs. See **Fig. 1** .

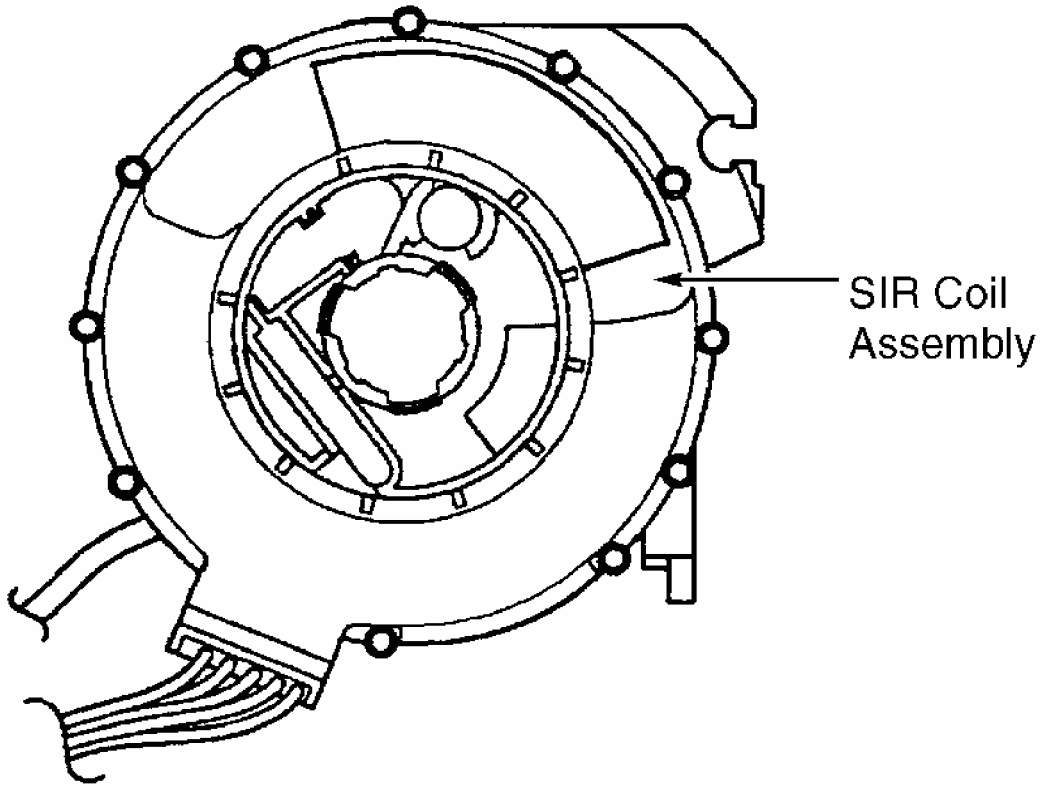

Fig. 1: Centering SIR Coil Assembly
Courtesy of GENERAL MOTORS CORP.

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 the Reference Information section. 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 10 minutes after ignition switch is turned OFF, battery is disconnected, or fuse powering SDM is removed. In order to begin servicing immediately,

inflator modules must be removed from deployment loop.

NOTE: When SDM fuse is removed and ignition switch is in RUN position, AIR BAG warning light will be on. This does not indicate a system malfunction.

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition switch to LOCK position and remove key.
2. Remove front floor kick-up panel. Remove SDM fuse (15-amp) located in instrument panel fuse block. Remove left sound insulator. Remove Connector Position Assurance (CPA) clip and disconnect driver-side Yellow 2-pin connector at base of steering column. See **Fig. 2** . Remove CPA clip and disconnect passenger-side Yellow 2-pin connector at base of steering column. See **Fig. 3** .System is now disabled.

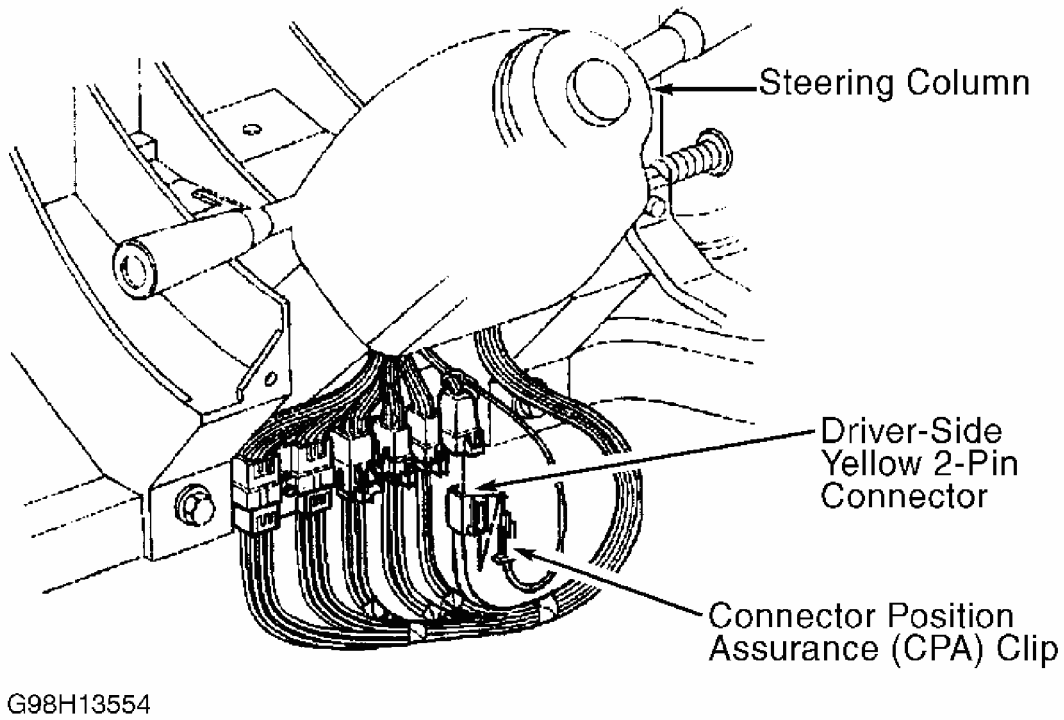

Fig. 2: Locating Driver-side Yellow 2-pin Connector
Courtesy of GENERAL MOTORS CORP.

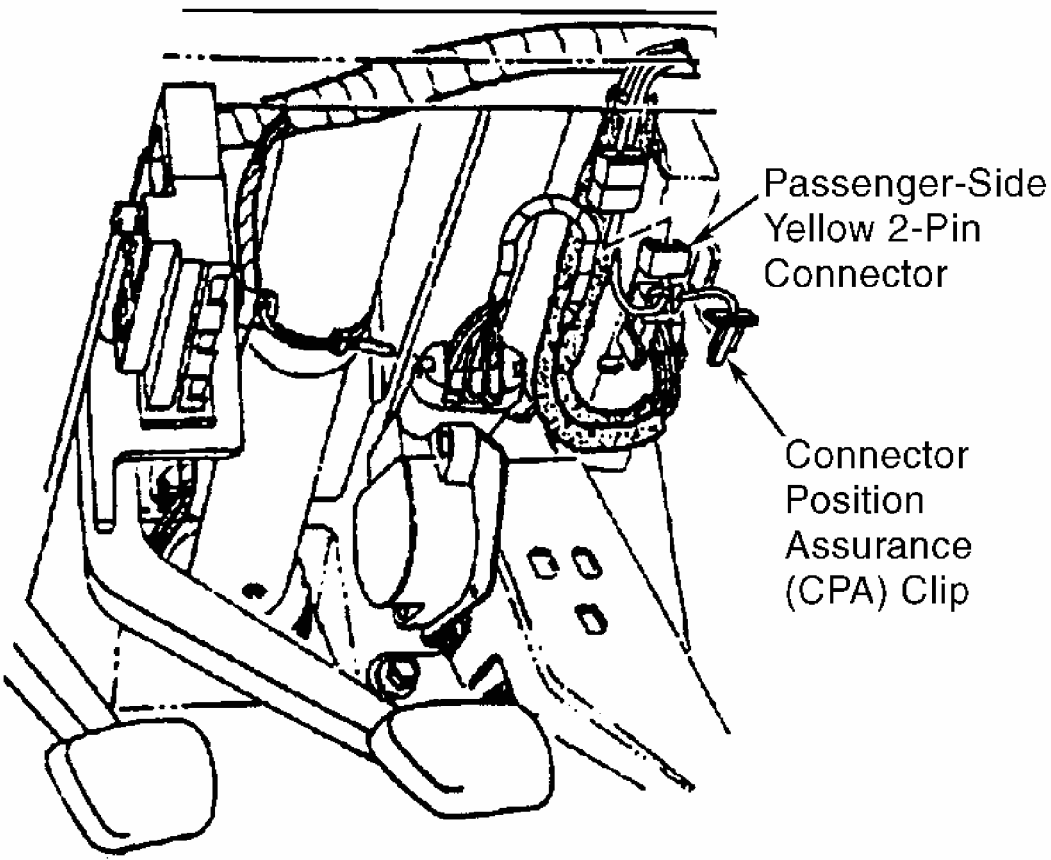

Fig. 3: Locating Passenger-side Yellow 2-pin Connector
Courtesy of GENERAL MOTORS CORP.

ACTIVATING SYSTEM

With key removed from ignition switch, connect Yellow 2-pin connectors at base of steering column and install CPA clips. Install left sound insulator. Install SDM fuse. Install front floor kick-up panel. Check system for proper operation. See **SYSTEM OPERATION CHECK** .

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 **AIR BAG SAFETY PRECAUTIONS** . Turn ignition switch OFF, remove key and put on safety glasses. Disconnect driver and passenger-side air bag module connectors. See **Fig. 2** & **Fig. 3** . Cut air bag module harness connector from vehicle leaving at least 6" of wire at connector.
2. 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. 4** . 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 1 through 4 for passenger-side air bag module. Cover windshield and front door openings with a drop cloth.
6. Separate wire ends. Connect each pair of wires to a 12-volt battery. Air bags should deploy. Disconnect wires from battery. DO NOT touch air bag module area for at least 10 minutes due to heat generated during deployment. Wear gloves and safety glasses before handling deployed air bag module. Wash hands with mild soap and water afterward. Deployed air bag modules can be disposed of like any other part. Repeat deployment procedure for passenger-side air bag.
7. If air bag modules do not deploy, carefully remove from vehicle. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Temporarily store module with trim facing up. Contact manufacturer for proper disposal instructions.

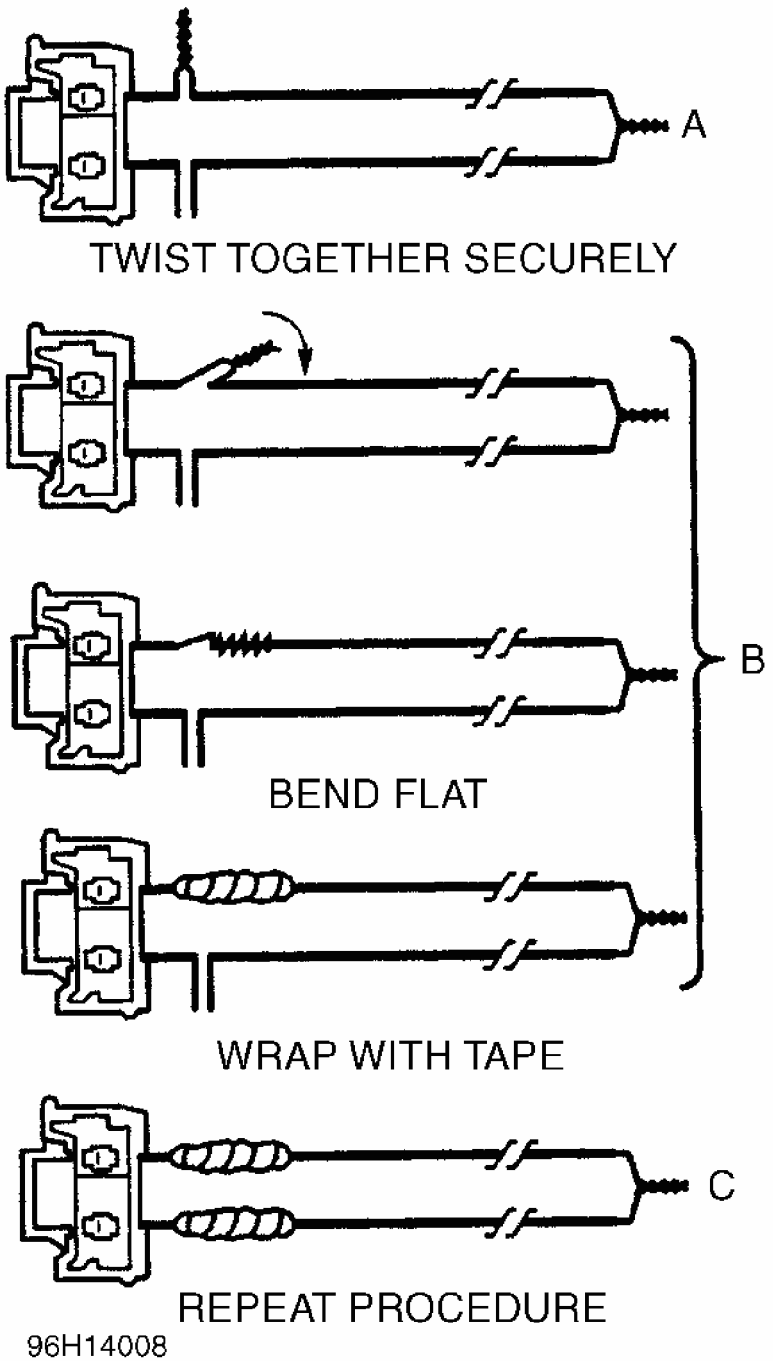

Fig. 4: Preparing Deployment Harness For On-vehicle Deployment
Courtesy of GENERAL MOTORS CORP.

OFF-VEHICLE DEPLOYMENT

1. Before proceeding, See **AIR BAG SAFETY 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. 5** .

2. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Remove horn lead, redundant steering wheel control leads, horn buttons and steering wheel control buttons from air bag module, if applicable.
3. Place air bag module with vinyl trim cover facing up, on a work bench or other surface (preferably paved surface outdoors) away from any loose or flammable objects. Clear space at least 6 feet in diameter around air bag. Extend SIR deployment harness and pigtail adapter to full length from air bag module. 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. 5** . Ensure area around air bag module is clear of people or loose 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. 5** . 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 as you would any other part. Inspect pigtail adapter and SIR deployment harness for damage after each use. Repeat deployment procedure for passenger-side air bag module.
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 module with trim cover facing up. Contact manufacturer for proper disposal instructions.

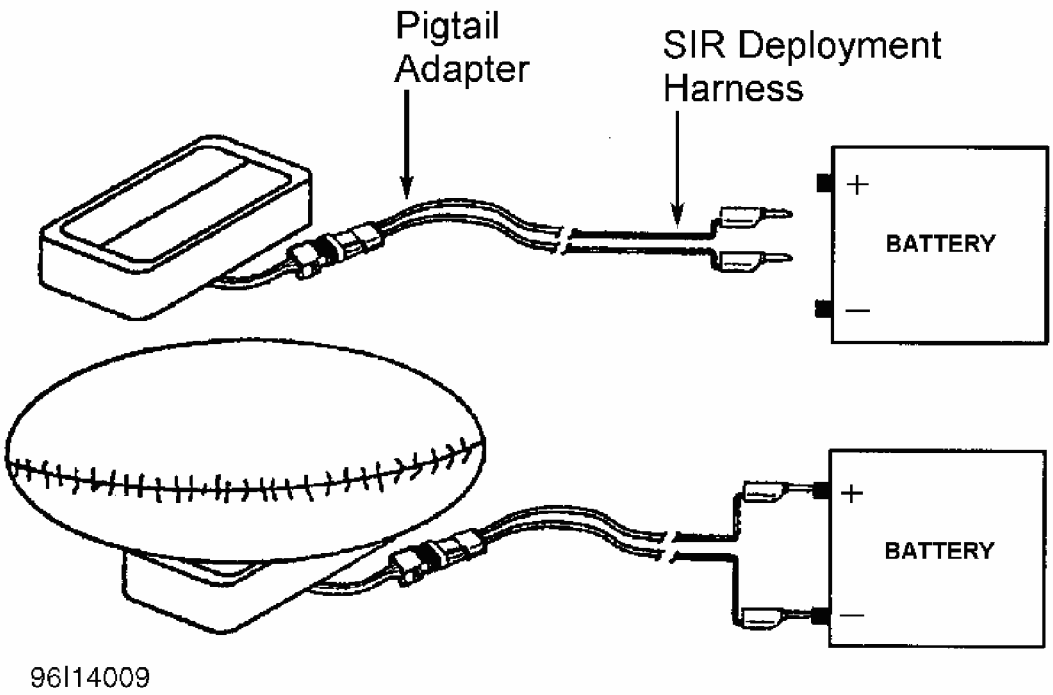

Fig. 5: Preparing Deployment Harness For Off-vehicle Deployment
Courtesy of GENERAL MOTORS CORP.

POST-COLLISION INSPECTION

See Air Bag-SRS Component Inspection & Replacement Tables in Reference Information section.

REMOVAL & INSTALLATION

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

SENSING & DIAGNOSTIC MODULE (SDM)

Removal

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. SDM is located behind lower center instrument panel. Remove accessory trim plate. Remove heater and A-C control panel. Remove Connector Position Assurance (CPA) clip from Sensing and Diagnostic Module (SDM) connector and disconnect SDM

harness connector from SDM.

3. Remove mounting bolts and remove SDM from instrument panel center support. See **Fig. 6** .

Installation

1. To install, reverse removal procedure. Connect SDM harness connector and install CPA clip. See **Fig. 6** . Tighten bolts to 89 INCH lbs. (10 N.m).
2. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **SYSTEM OPERATION CHECK** .

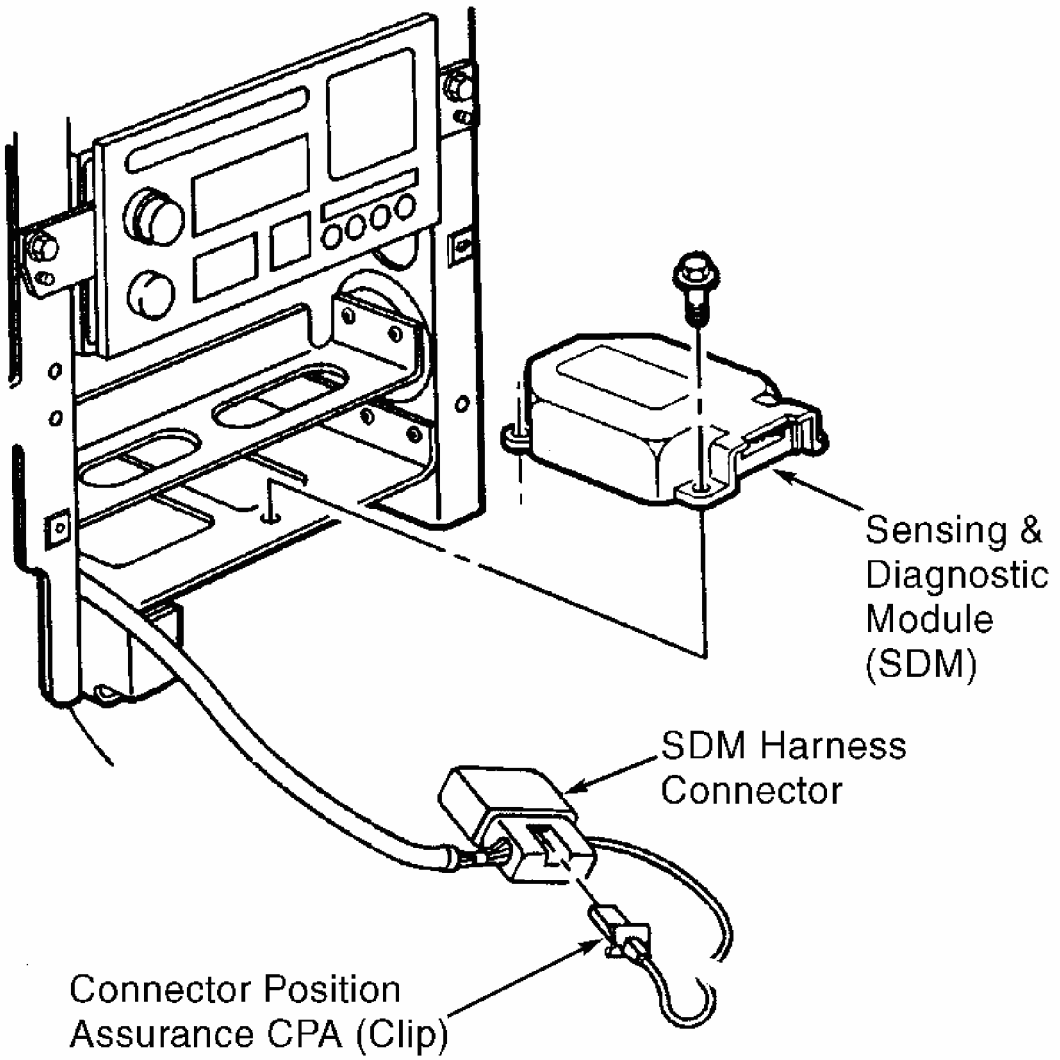

Fig. 6: Removing Sensing & Diagnostic Module (SDM)

Courtesy of GENERAL MOTORS CORP.

STEERING WHEEL

Removal

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove driver-side air bag module. See **AIR BAG MODULES** . Remove steering wheel set nut. Using Steering Wheel Puller (J-1859-A) and Puller Legs (J-42120), remove steering wheel.

Installation

1. To install, reverse removal procedure. Use new steering wheel nut and tighten to 30 ft. lbs. (41 N.m). 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 **SYSTEM OPERATION CHECK** .

SIR COIL ASSEMBLY

Removal

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove driver-side air bag. See **AIR BAG MODULES** . Remove steering wheel. See **STEERING WHEEL** . Remove upper and lower steering column shrouds.
3. Remove wire harness straps from steering wheel column wire harness. Remove retaining ring. Remove SIR coil and wave washer. See **Fig. 7** .

Installation

1. Center race and upper shaft assembly. Center SIR coil. Center wheels straight ahead. Center block tooth and centering mark on shaft assembly at 12 o"clock position. Install wave washer.
2. With shaft centered, coil centered and coil aligned with horn tower, slide coil onto shaft. Install retaining ring. Check that ring seats securely in groove on shaft.
3. Route lower coil wire along steering column jacket and install wire harness straps to steering column wire harness. Install upper and lower steering column shrouds. Install steering wheel and driver-side air bag. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **SYSTEM OPERATION CHECK** .

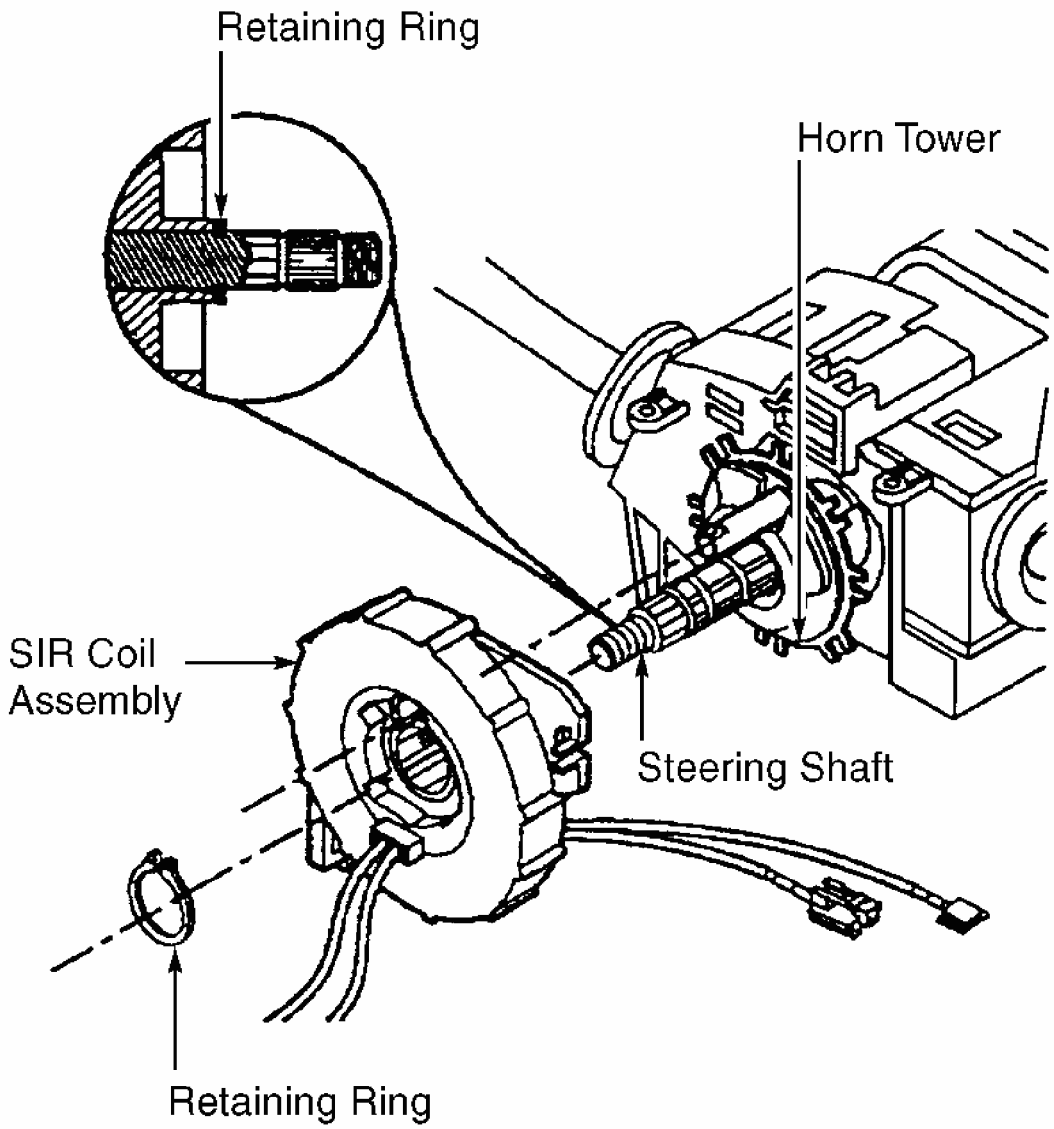

Fig. 7: Removing SIR Coil Assembly
Courtesy of GENERAL MOTORS CORP.

AIR BAG MODULES

Removal Driver-side

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove 4 screws retaining driver-side air bag to steering wheel. Partially remove driver-side air bag module and disconnect SIR connector from back of air bag. Disconnect horn wiring harness from steering column. Disconnect ground wire from

steering column. Remove driver-side air bag from vehicle. See **Fig. 8** .

Installation

To install, reverse removal procedure. See **Fig. 8** . Tighten air bag module screws to 54 INCH lbs. (6 N.m). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **SYSTEM OPERATION CHECK** .

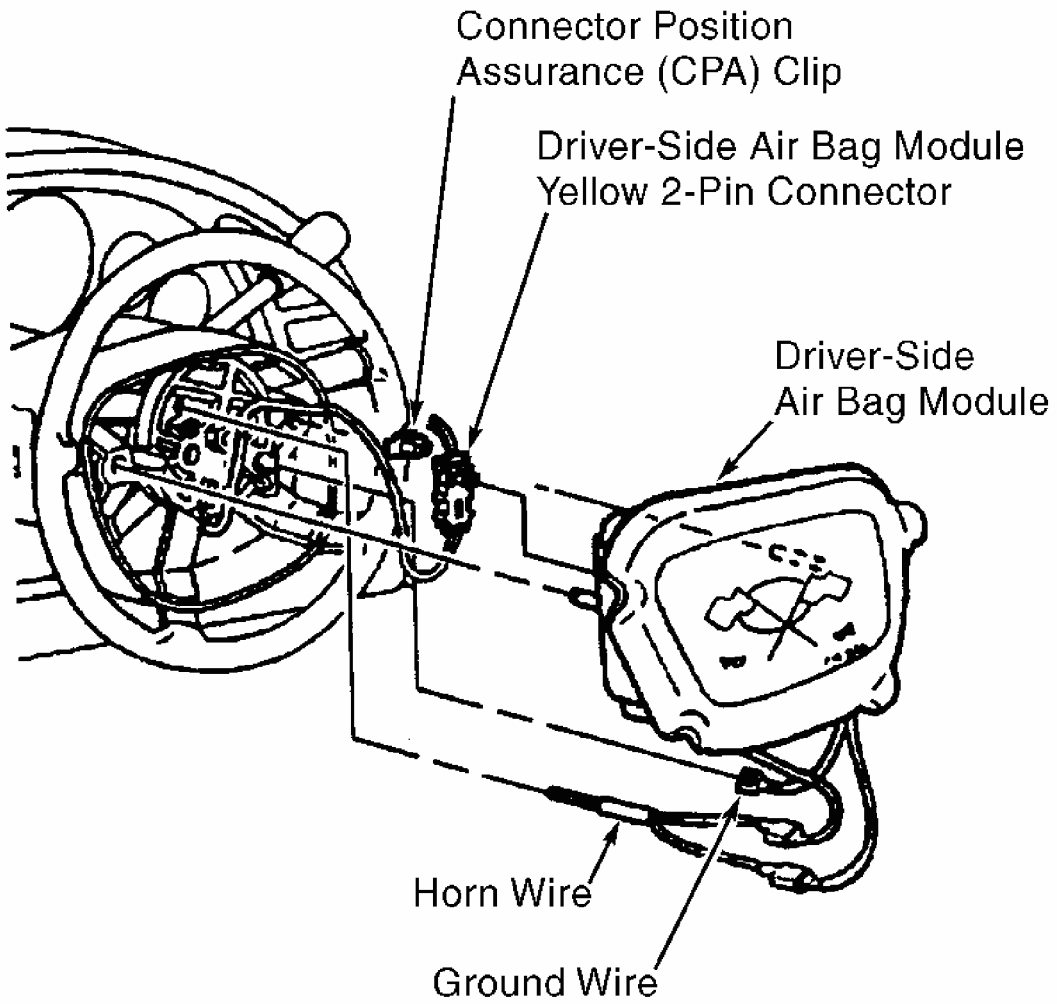

Fig. 8: Removing Driver-side Air Bag
Courtesy of GENERAL MOTORS CORP.

Removal Passenger-side

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag

system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .

2. Remove instrument panel upper trim panel. See **INSTRUMENT PANEL TRIM PAD** . Remove CPA clip and disconnect passenger-side air bag Yellow 2-pin connector. Remove fasteners. Remove passenger-side air bag module. See **Fig. 9** .

Installation

To install, reverse removal procedure. See **Fig. 9** . Tighten fasteners to 89 INCH lbs. (10 N.m). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **SYSTEM OPERATION CHECK** .

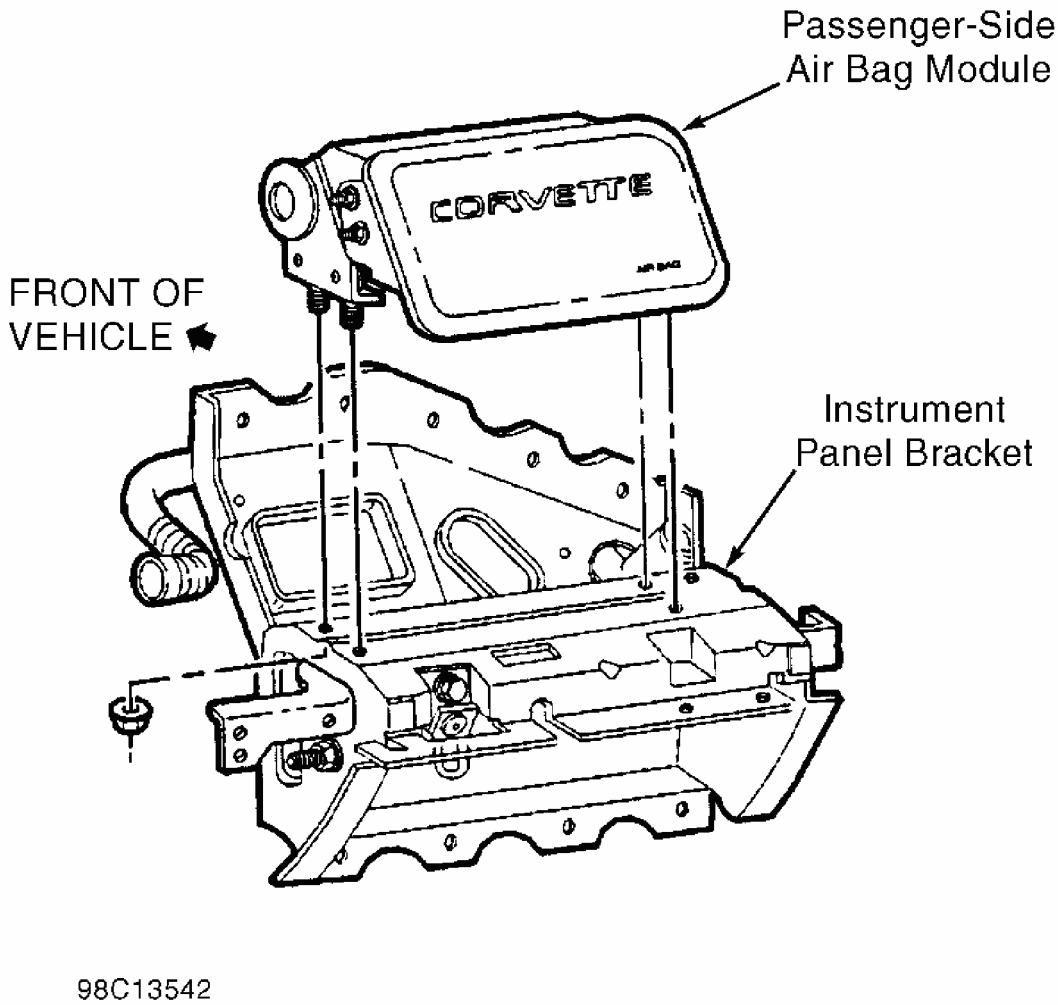

Fig. 9: Removing Passenger-side Air Bag Module
Courtesy of GENERAL MOTORS CORP.

SIR LED MODULE

Removal & Replacement

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Open center console compartment door. Lift up on accessory trim plate to gain access to LED module electrical connector. Disconnect LED module from wiring harness connector. To install, reverse removal procedure.

PASSENGER SIR (PSIR) SUPPRESSION SWITCH

Removal & Installation

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Open glove compartment. Using a small, flat bladed screwdriver, carefully pry PSIR suppression switch from switch mounting plate. Disconnect electrical connector and remove switch. To install, reverse removal procedure.

INSTRUMENT PANEL TRIM PAD

Removal

1. Before proceeding, See **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove center console door from center console. Using flat-blade screwdriver, carefully pry traction control and ride control switch from center console. Disconnect electrical connector and remove switch.
3. Pry console retaining nut covers from center console and remove. Remove 4 nuts retaining rear console. Remove nuts retaining front console and instrument panel trim plate. Lift front console panel and pull rear console panel rearward to release instrument panel trim plate. See **Fig. 10** .
4. Disconnect electrical accessory plug connector. Unscrew plug retainer from plug and remove plug from console. Disconnect fuel door release and rear lift window release (if equipped) switch connector. Turn console over and release switch tabs. Remove switch and center console from vehicle.
5. Apply parking brake. Shift transmission lever to 2 position (automatic transmission) or 4 position (manual transmission). Push shift control boot in toward shift control lever and release retaining tabs to instrument panel trim plate. Turn shift lever boot and push inside instrument panel trim plate.
6. Remove ashtray and accessory trim plate from instrument panel trim plate. Remove screws in ashtray well securing instrument panel trim plate. Pull both sides of trim plate out and pull rearward. Disconnect cigar lighter connector and remove trim plate from vehicle.
7. Using flat-blade screwdriver, pry out fog light and trunk release switch from lower left instrument panel. Remove knee bolster retaining bolt from switch well. Remove 2

lower knee bolster bolts. Pull knee bolster rearward to release locking tabs. Disconnect air temperature sensor connector (if equipped). Remove knee bolster from vehicle.

8. Remove glove box door retaining screw covers. Disconnect glove box light switch connector. Remove 4 screws securing glove box to instrument panel. Remove glove box.
9. Using flat-blade screwdriver, pry defrost grille along grille front. Lift grille out from instrument panel. Rotate sunload and DRL sensors and remove from defrost grille. Lay sensors in defrost duct.
10. Remove "A" pillar mouldings. Remove 4 bolts securing upper instrument panel trim pad to defroster duct. Remove 7 bolts securing instrument panel trim pad to hinge pillars, cluster bezel, knee bolster bracket, and passenger-side air bag module bracket. See **Fig. 11** .
11. Tilt steering wheel down fully. Lift front of instrument panel trim pad about 2" (50 mm) to clear air distribution duct. Carefully pull trim pad from windshield, guiding panel past left and right-side hinge pillars. Disconnect hazard warning switch connector and remove instrument panel trim pad from vehicle.

Installation

1. To install, reverse removal procedure. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** .
2. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check system for proper operation. See **SYSTEM OPERATION CHECK** .

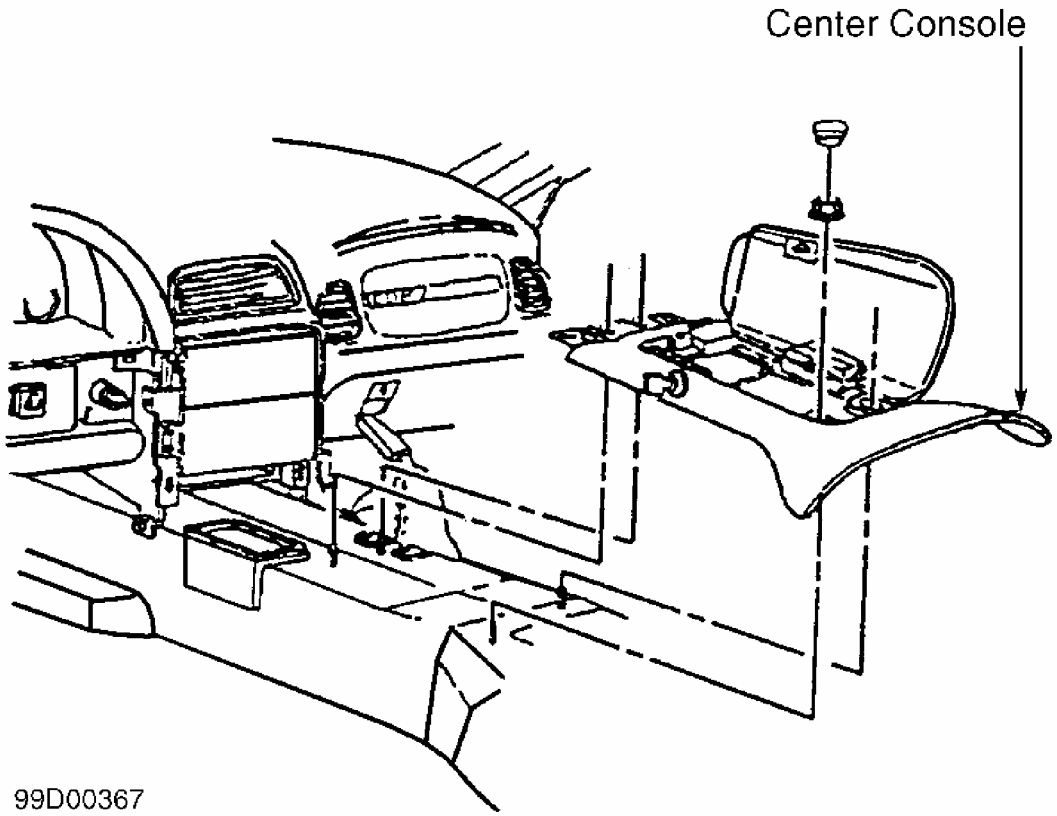

Fig. 10: Removing Center Console
Courtesy of GENERAL MOTORS CORP.

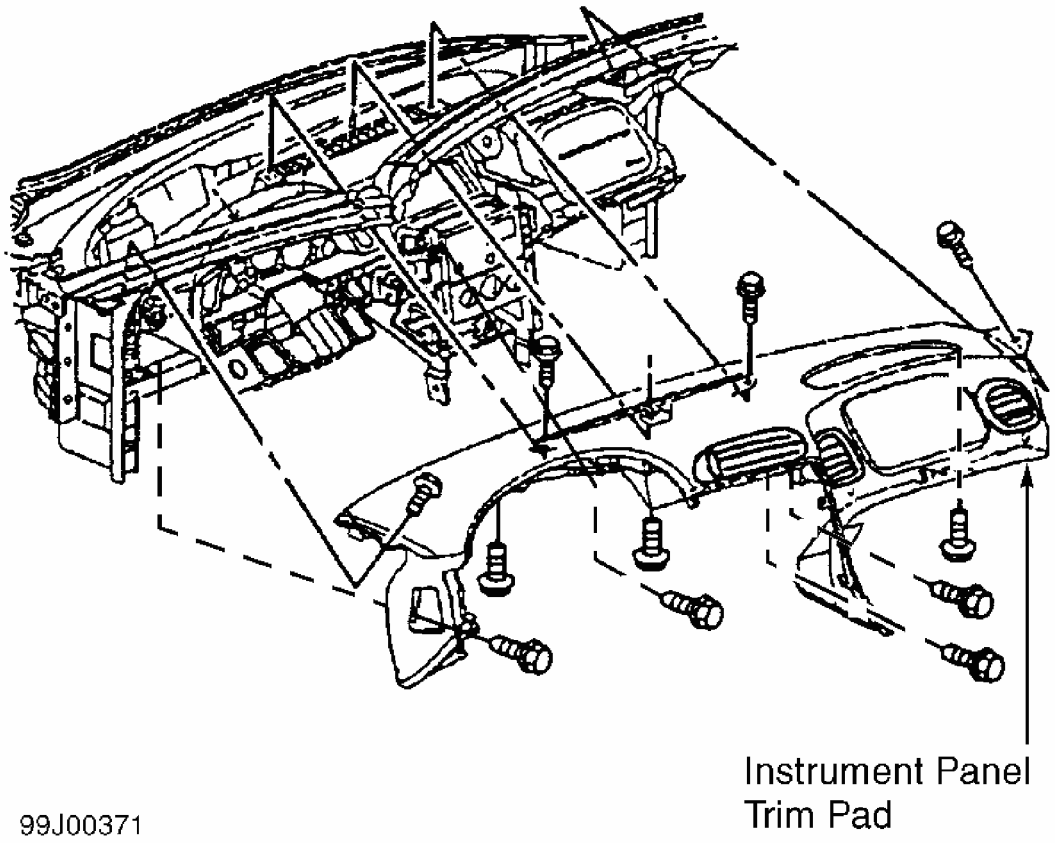

Fig. 11: Removing Instrument Panel Trim Pad
Courtesy of GENERAL MOTORS CORP.

DIAGNOSTICS

WARNING: Failure to follow service precautions may result in air bag deployment and personal injury. See AIR BAG SAFETY PRECAUTIONS . After component replacement, check system operation. See 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 RUN position. Follow scan tool manufacturer instructions for communication with SIR system. Scan tool reads the serial data from SDM data link output terminal No. 5 to DLC connector terminal No. 9.

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.

DIAGNOSTIC TESTS

NOTE: AIR BAG warning light will also set if serial data communication is shorted to ground or voltage. AIR BAG warning light will set if communication is lost between SDM and instrument cluster.

DIAGNOSTIC TROUBLE CODE (DTC) CHART

Trouble Code	Possible Cause
B0016	Passenger deployment loop resistance low
B0017	Passenger deployment loop open
B0018	Passenger deployment loop voltage out of range
B0022	Driver deployment loop resistance low
B0024	Driver deployment loop voltage out of range
B0026	Driver deployment loop open
B0051	Deployment commanded
B0053	Deployment commanded with loop malfunction

B0090	Active switch voltage out of range
B0091	Active switch: Wrong state
B1001	Option configuration error

CONNECTOR IDENTIFICATION

NOTE: Refer to illustrations to identify SIR connector terminals. See Fig. 12 , Fig. 13 , Fig. 14 , Fig. 15 , Fig. 16 & Fig. 17 .

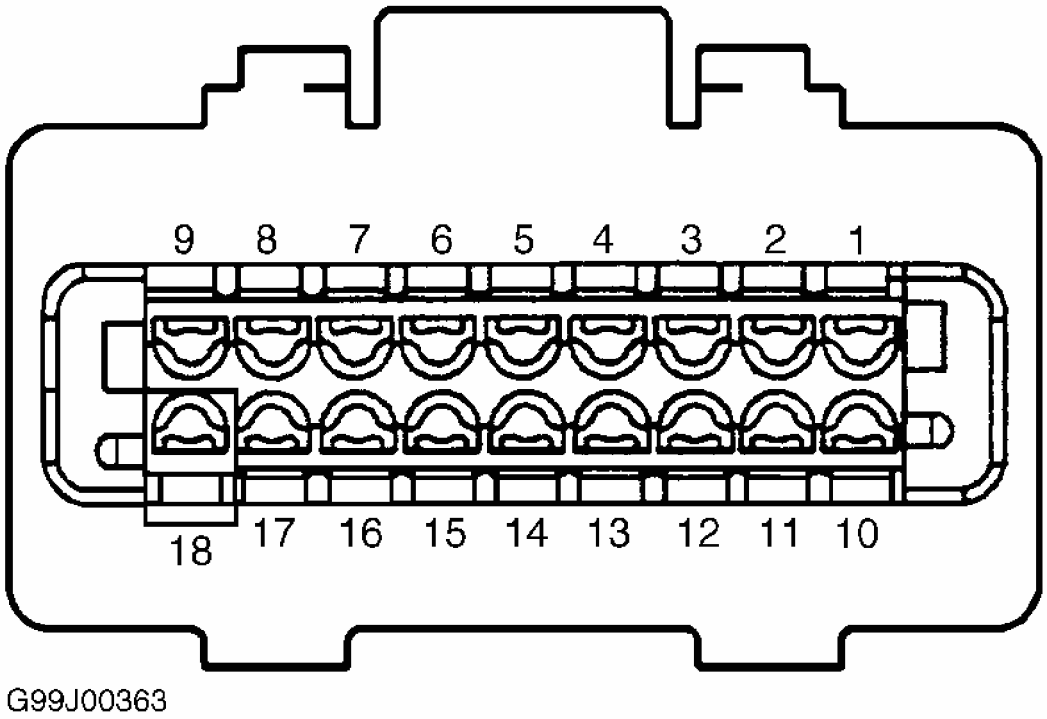

Fig. 12: Identifying SDM Connector Terminals
Courtesy of GENERAL MOTORS CORP.

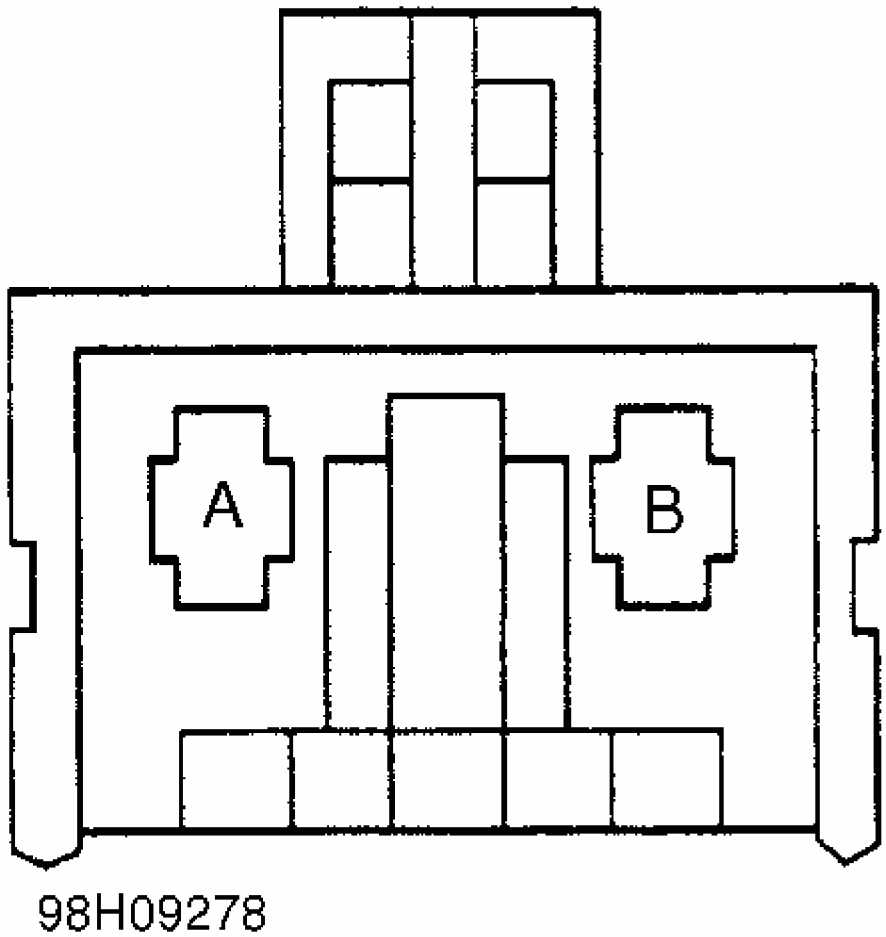

Fig. 13: Identifying SIR Coil Connector Terminals
Courtesy of GENERAL MOTORS CORP.

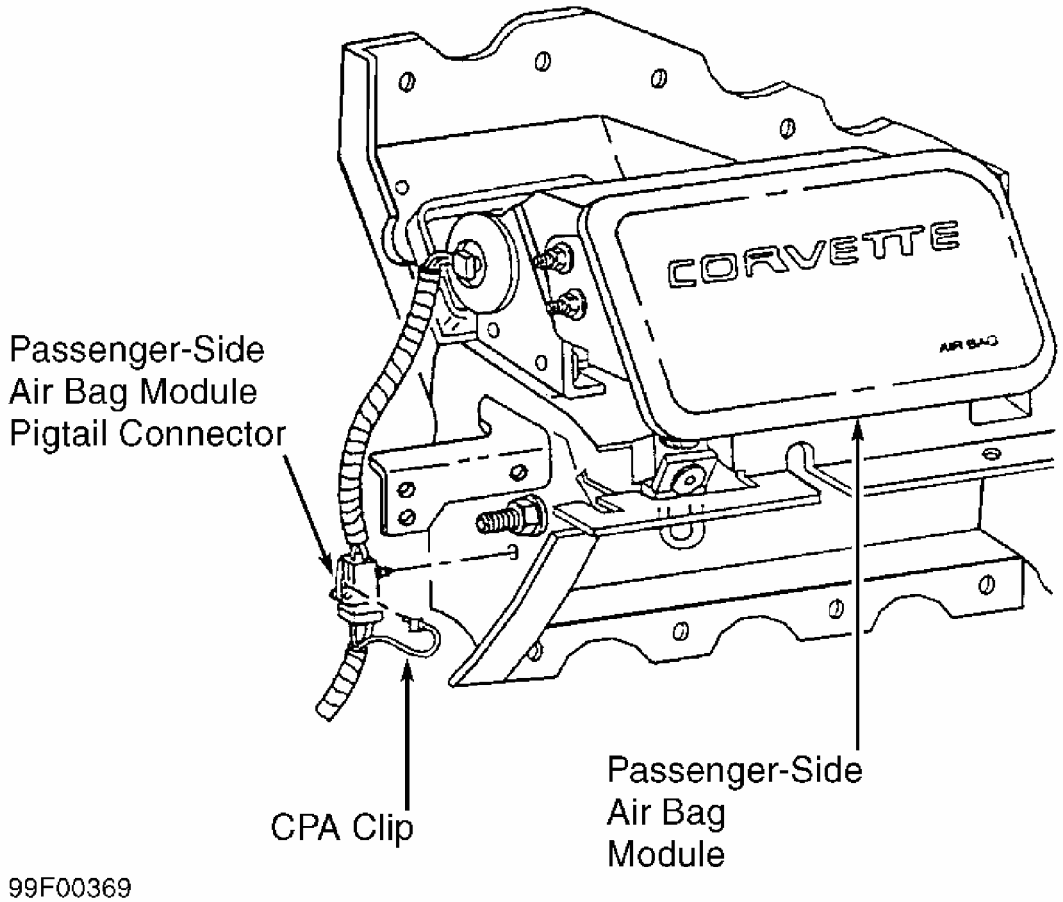

Fig. 14: Locating Passenger-side Air Bag Module Pigtail Connector
Courtesy of GENERAL MOTORS CORP.

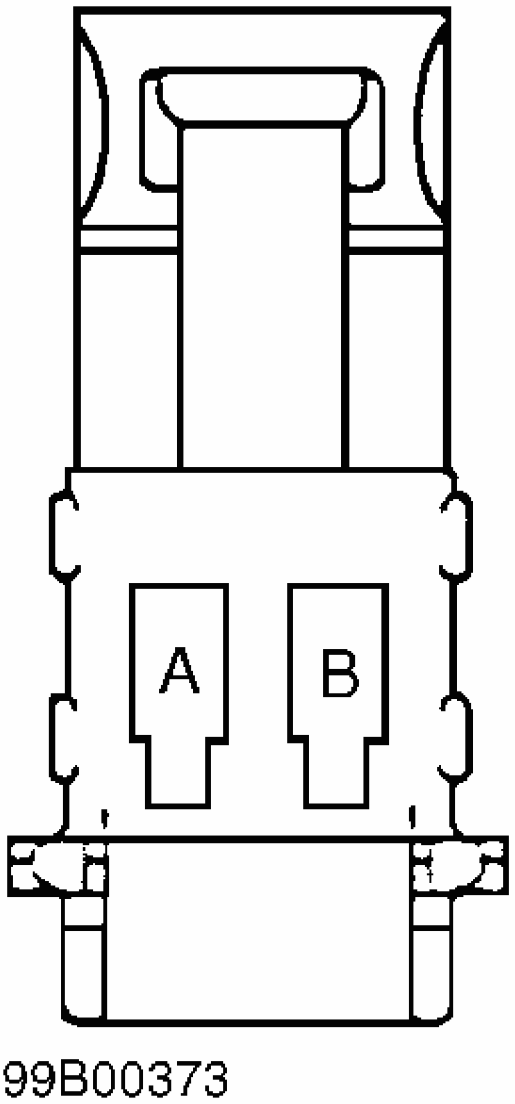

Fig. 15: Identifying Passenger-side Air Bag Connector Terminals
Courtesy of GENERAL MOTORS CORP.

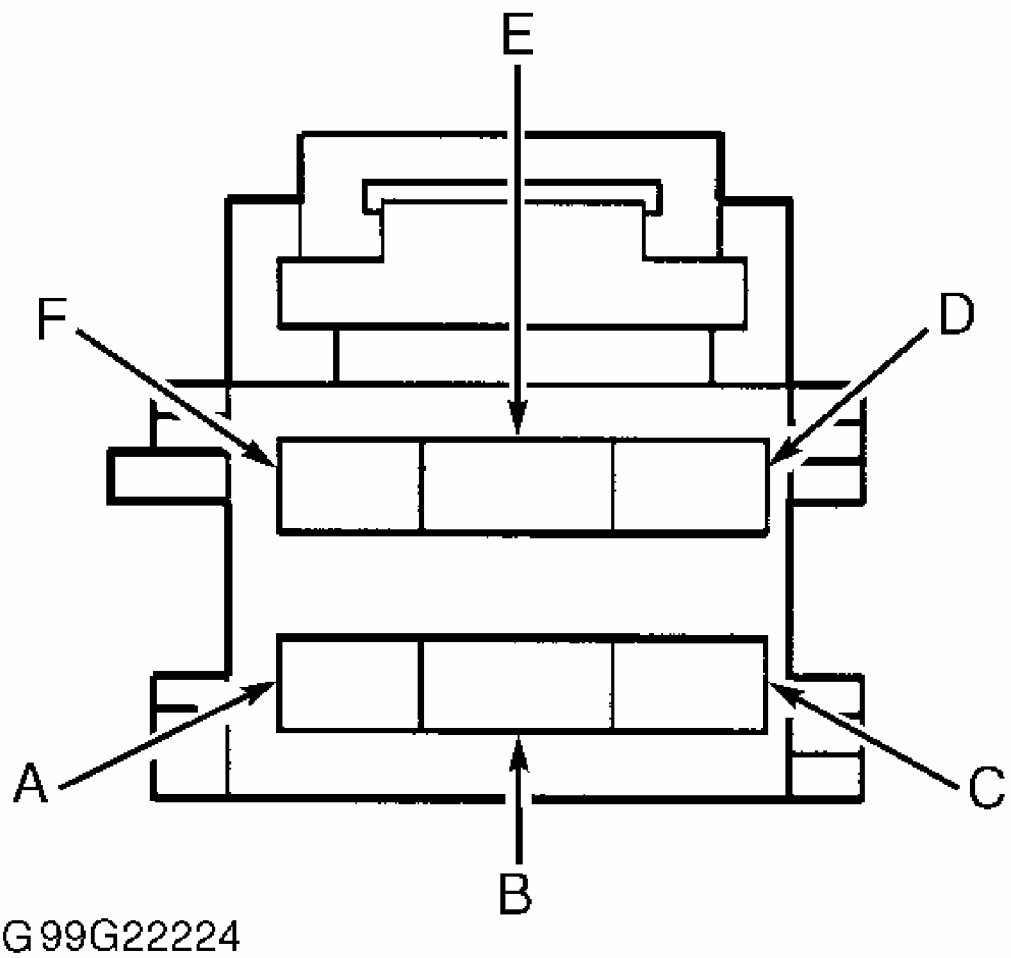

Fig. 16: Identifying Passenger SIR (PSIR) Suppression Switch Terminals
Courtesy of GENERAL MOTORS CORP.

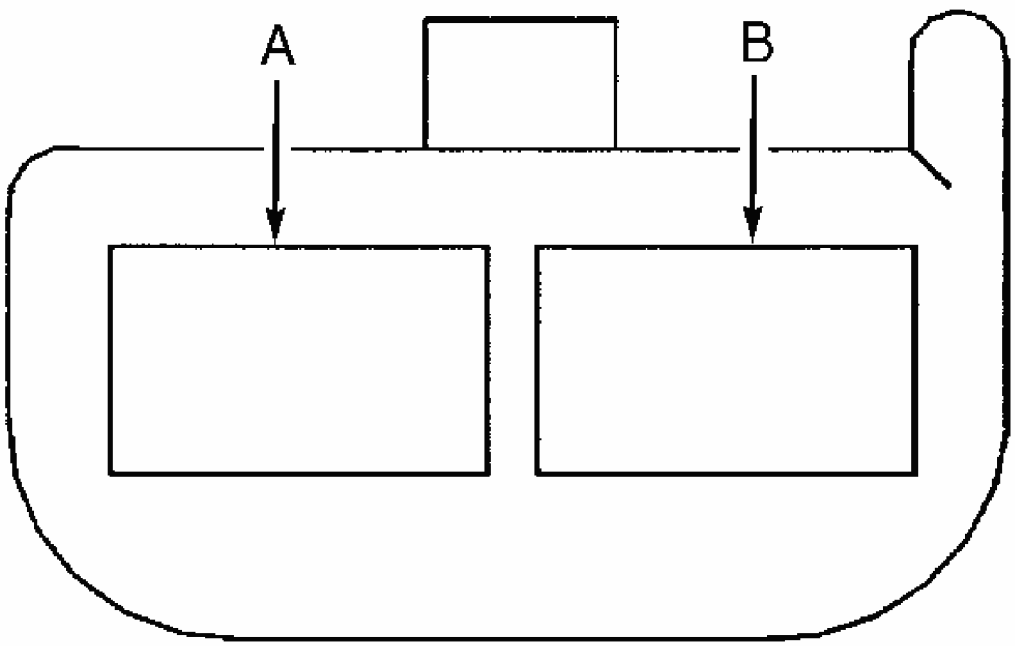

Fig. 17: Identifying SIR LED Module Terminals
Courtesy of GENERAL MOTORS CORP.

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

Ignition switch supplies IGNITION POSITIVE VOLTAGE to SDM at terminal No. A1 using SDM fuse. When ignition switch is turned to RUN position, SDM responds by performing tests on SIR system and then flashing AIR BAG warning light 7 times. If no DTCs exist, AIR BAG warning light should then turn off.

Diagnostic Aids

When an intermittent condition is suspected due to a customer complaint that cannot be duplicated or by a DTC that is retrieved as a history DTC, an intermittent condition may exist. Intermittent conditions are usually caused by faulty terminal connections or wiring circuit problems.

Diagnostic Procedure

1. Observe AIR BAG warning light while turning ignition switch to RUN position. If AIR BAG warning light flashes 7 times, go to next step. If AIR BAG warning light does not flash 7 times, go to AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION.
2. Observe AIR BAG warning light after it flashes 7 times. If AIR BAG warning light turns off, go to step 6 . If AIR BAG warning light does not turn off, go to next step.
3. Turn ignition off. Connect scan tool to Data Link Connector (DLC). Turn ignition on. Follow scan tool instructions to read Diagnostic Trouble Code (DTC). If scan tool is reading SDM data, go to next step. If scan tool does not communicate with SDM, go to **SCAN TOOL DOES NOT COMMUNICATE WITH SDM** .
4. If scan tool displays DTC go to next step. If scan tool does not display DTC, go to **AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION** .
5. Turn ignition off. Read DTCs. If DTCs B0051 or B0053 are displayed, refer to Diagnostic Procedure for specific DTC. Diagnose remaining current DTCs from lowest to highest. If only history DTCs exist, refer to Diagnostic Aids for specific DTC. A history DTC indicates malfunction has been repaired or is intermittent.
6. Turn ignition off. Connect scan tool to Data Link Connector (DLC). Turn ignition on. Follow scan tool instructions to read Diagnostic Trouble Code (DTC). If scan tool is reading SDM data, go to next step. If scan tool does not communicate with SDM, go to **SCAN TOOL DOES NOT COMMUNICATE WITH SDM** .
7. Using scan tool, retrieve SIR history DTCs. If scan tool retrieves any history DTCs, go to next step. If scan tool does not retrieve any history DTCs, system is okay at this time.
8. Turn ignition off. Read DTCs. Refer to Diagnostic Aids for specific DTC. A history DTC indicates malfunction has been repaired or is intermittent.

AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION

Circuit Description

When ignition switch is turned to RUN position, SDM fuse applies battery voltage to IGNITION POSITIVE VOLTAGE input, terminal No. A1. IPC fuse applies battery voltage to AIR BAG warning light through serial data line at terminal No. A13. SDM responds by flashing AIR BAG warning light 7 times. If IGNITION POSITIVE VOLTAGE is outside normal operating range (9-16 volts), AIR BAG warning light will come ON steady with no DTCs set.

Diagnostic Aids

A loss of serial data communication between SDM and instrument cluster will cause AIR BAG warning light to turn on.

NOTE: For circuit number and wire color identification, See WIRING

DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Check instrument cluster for correct operation. Repair or replace instrument cluster as necessary. Go to next step.
3. Turn ignition off. Check AIR BAG warning light for correct operation. See **SYSTEM OPERATION CHECK** . If AIR BAG warning light flashes 7 times, go to step 5 . If AIR BAG warning light does not flash 7 times, go to next step.
4. Replace instrument cluster and then go to step 18 .
5. Install scan tool to DLC. Ensure communication between scan tool and instrument cluster exists. Using scan tool, retrieve instrument cluster DTC display list. If DTC U1083 does not exist, go to next step. If DTC U1083 exists, a malfunction exists in data link communications circuit. Inspect and repair or replace appropriate components in data communications system.
6. Using scan tool, retrieve instrument cluster DTC display list. If AIR BAG warning light is being commanded on, go to next step. If AIR BAG warning light is not being commanded on, go to step 4 .
7. Using scan tool, retrieve SIR DTC display list. If ignition voltage displayed on scan tool is less than 9 volts, go to next step. If ignition voltage displayed on scan tool is 9-16 volts, go to step 9 .
8. If ignition voltage is more than 16 volts, repair charging system. If ignition voltage is 16 volts or less, go to step 17 .
9. Turn ignition off. Disconnect SDM connector. See **Fig. 6** . Check SDM connector terminals for damage or corrosion. If terminals are okay, go to step 11 . If terminals are damaged or corroded, go to next step.
10. Replace SDM connector. Go to step 18 .
11. Remove SDM fuse. Disconnect driver and passenger-side air bag Yellow 2-pin connectors located at base and right-side of steering column. See **Fig. 2** & **Fig. 3** . Using Digital Multimeter (J-39200), measure resistance between SDM fuse holder terminal and SDM harness connector terminal No. A1. See **Fig. 12** . If resistance is 0-2 ohms, go to step 13 . If resistance is not 0-2 ohms, go to next step.
12. Repair open or high resistance in circuit 1139. Go to step 18 .
13. Turn ignition on. Using Digital Multimeter (J-39200), measure voltage between input side of SDM fuse ground. If voltage is near 12 volts, go to step 15 . If voltage is not near 12 volts, go to next step.
14. Repair open or high resistance in power feed circuit to SDM fuse. Go to step 18 .
15. Using Digital Multimeter (J-39200), measure resistance between terminal No. A18 of

SDM harness connector. If resistance is less than 2 ohms, go to step 17 . If resistance is 2 ohms or greater, go to next step.

16. Repair open or high resistance condition in circuit 851.
17. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
18. Reconnect all SIR system components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

SCAN TOOL DOES NOT COMMUNICATE WITH SDM

Circuit Description

DLC is provided to allow scan tool to communicate with SDM. DLC provides power and ground circuits for scan tool. SDM communicates serial data through circuit 1128 to scan tool. DLC allows scan tool to access data list information, read and clear diagnostic trouble codes.

Diagnostic Aids

A loss of serial data communication between SDM and instrument cluster will cause AIR BAG warning light to turn on.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Install scan tool and check communication with each module in serial data circuit. If scan tool communicates with any module, go to next step. If scan tool does not communicate with any module, go to step 5 .
3. Select Display DTC function for each module. If any DTCs beginning with "U" are displayed, go to step 4 . If no DTCs beginning with "U" are displayed, see DIAGNOSTIC AIDS.
4. Diagnose and repair systems indicated.
5. Turn ignition off. Disconnect scan tool from DLC connector. Inspect DLC terminals No. 2 and 5 for bad terminal connections. If bad terminal connectors are found, repair terminals and go to step 3 . If no connector problems are found, go to next step.
6. Measure resistance between DLC terminal No. 5 and ground. If resistance is infinite, repair circuit and go to step 3 . If resistance is not infinite, go to next step.
7. Disconnect bus bars from star connectors No. 1 and 2 and inspect for faulty

connections. If faulty connections are found, repair connections. Go to step 3 . If connections are okay, go to next step.

8. Test circuit S206 for an open or short condition between DLC terminal No. 2 and STAR CONNECTOR terminal "A". If short or open condition is found, repair condition. Go to step 3 . If no short or open is found, go to next step.
9. Turn ignition off. Install scan tool. Disconnect bus bars from star connectors No. 1 and 2. Connect Serial Data Link Tester (J-42236) to star connectors. Place switch on Serial Data Link Tester to STAR CONNECTOR No. 1 position and place rotary switch to position "M". Turn ignition on. Using scan tool, attempt to communicate with Body Control Module (BCM). If scan tool communicates with BCM, go to next step. If scan tool does not communicate with BCM, go to step 12 .
10. Place switch on Serial Data Link Tester to STAR CONNECTOR No. 1 position. Using scan tool, attempt to communicate with all control modules while rotating switch on Serial Data Link Tester. See **STAR CONNECTOR NO. 1 POSITION SWITCH SETTINGS** table. If scan tool communicates with all control modules, go to next step. If scan tool does not communicate with all control modules, go to step 12 .
11. Place switch on Serial Data Link Tester to STAR CONNECTOR No. 2 position. Using scan tool, attempt to communicate with control modules while rotating switch. See **STAR CONNECTOR NO. 2 POSITION SWITCH SETTINGS** table. If scan tool communicates with all control modules, go to step 15 . If scan tool does not communicate with all control modules, go to next step.
12. Turn ignition off. Disconnect harness connectors modules that are not communicating with scan tool. For each non communicating module, test serial data circuit for short to ground. Turn ignition on and test circuit for short to voltage. If short to either ground or voltage is found, repair circuit. Go to step 15 . If no short is found, go to step 13 .
13. Inspect for poor connections at control module connectors. If faulty connector is found, repair connector. Go to step 15 . If no faulty connector is found, go to next step.
14. Replace control module which is not communicating with scan tool. Go to next step.
15. Reconnect all components. Install scan tool. Turn ignition on. Wait 10 seconds. Select Display DTCs function for each module. Record all displayed DTCs. If any current status DTCs were displayed which began with "U", go to step 17 . If no current status DTCs beginning with "U" were displayed, go to next step.
16. If any DTCs were recorded which did not begin with "U", go to next step. If no DTCs beginning with "U" were recorded, go to step 18 .
17. Diagnose DTCs for each module or malfunction. When diagnosis and repairs are complete, go to next step.
18. Using scan tool, clear all DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

STAR CONNECTOR NO. 1 POSITION SWITCH SETTINGS

Rotary Switch Position	Control Module

"L"	A-C-Heater Control (HVAC)
"J"	Remove Function Actuation (RFA)
"H"	Remote Time Damping (RTD)
"G"	Instrument Panel Cluster (IPC)
"F"	Sensing & Diagnostic Module (SDM)
"E"	Traction Control System (TCS)
"D"	RADIO
"B"	Powertrain Control Module (PCM)

STAR CONNECTOR NO. 2 POSITION SWITCH SETTINGS

Rotary Switch Position	Control Module
"C"	Left Door Control Module (LDCM)
"D"	Right Door Control Module (RDCM)
"K"	Seat Control Module (SCM)

DTC B0016: PASSENGER DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. DEPLOYMENT LOOP VOLTAGE test is performed to ensure voltage is within normal range. If voltage test does not detect out of range condition (due to short to voltage), SDM then performs DEPLOYMENT LOOP RESISTANCE test. Resistance test will not be performed if voltage test detects out of range condition, due to short to voltage.

Conditions For Setting DTC

DTC sets when passenger deployment loop voltage and resistance tests are not within specified ranges.

DTC will set if DEPLOYMENT LOOP VOLTAGE and DEPLOYMENT LOOP RESISTANCE tests are within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- Deployment loop is not open.
- Deployment loop is not shorted to ground.
- Deployment loop resistance is at less 1.3 ohms for 300 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC will clear when CLEAR CODES command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

An intermittent condition is likely to be caused by a short between circuit 1403 and circuit 1404, or by malfunctioning shorting bar on passenger-side air bag 2-pin connector or 4-pin connector.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect passenger air bag module 4-pin inline connector. Check male and female sides of connector for corrosion, damaged terminals or poor connections. If corrosion, damaged terminals or poor connections are found, go to next step. If no corrosion, damaged terminals or poor connections are found, go to step 4 .
3. If male side of connector is damaged, replace connector. If female side of connector is damaged, replace wiring harness. See **WIRE REPAIR** . Go to step 14 .
4. Reconnect 4-pin connector. Ensure CPA clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0016 is retrieved, go to next step. If DTC B0016 is not retrieved, go to DIAGNOSTIC AIDS.
5. Turn ignition off. Disconnect passenger air bag module 4-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0016 is retrieved, go to step 11 . If DTC B0016 is not retrieved, go to next step.
6. Turn ignition off. Disconnect passenger-side air bag module inline 2-pin connector. Inspect both sides of connector for corrosion, damaged terminals or poor connections. If damage is found, go to next step. If no damage is found, go to step 8 .
7. If female side of connector is damaged, replace connector. If male side of connector is damaged, passenger-side air bag module must be replaced. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 14 .
8. Remove SIR Driver-Passenger Load Tool (J-38715-A) from 4-pin connector. Reconnect 4-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) to female side of passenger-side air bag module 2-pin inline connector. Turn ignition on. Using scan tool, request DTC display. If DTC B0016 is retrieved, go to next step. If DTC B0016 is not retrieved, go to step 10 .

9. Turn ignition off. Repair short between circuits 1403 and 1404 between 2-pin and 4-pin connectors. Go to step 14 .
10. Turn ignition off. Replace passenger-side air bag. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 14 .
11. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from harness connector. Disconnect SDM harness connector. Using Digital Multimeter (J-39200), measure resistance between SDM harness connector terminals No. A3 and A8. See **Fig. 12** . If resistance is infinite, go to next step. If resistance is not infinite, go to step 13 .
12. Repair short between circuits 1403 and circuit 1404. Go to step 14 .
13. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
14. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0017: PASSENGER DEPLOYMENT LOOP OPEN

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. DEPLOYMENT LOOP VOLTAGE test is performed to ensure voltage is within normal range. If voltage test does not detect out of range condition (due to short to voltage), SDM then performs DEPLOYMENT LOOP RESISTANCE test. Resistance test will not be performed if voltage test detects out of range condition, due to short to voltage.

Conditions For Setting DTC

DTC sets when passenger deployment loop voltage and resistance tests are not within specified ranges.

DTC will set if DEPLOYMENT LOOP VOLTAGE test is within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- PASSENGER HIGH voltage is less than 2 volts.
- Deployment loop resistance is at least 6 ohms for 300 milliseconds. DTC will set if DEPLOYMENT LOOP RESISTANCE test is within the following ranges:
- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- Deployment loop is not shorted to ground.
- Deployment loop resistance is greater than 3.7 ohms for 300 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC will clear when CLEAR CODES command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection at passenger-side air bag connector terminals "A" or "B", SDM terminals No. A3 or A8, or an open in circuits 1403 or 1404.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Disconnect passenger air bag 4-pin connector. Check for corrosion, terminal damage or poor connections. If damage is found, go to next step. If no damage is found, go to step 4 .
3. If female side of connector is damaged, wire harness must be replaced. If male side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 18 .
4. Reconnect 4-pin connector. Ensure CPA clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0017 is retrieved, go to next step. If DTC B0017 is not retrieved, go to DIAGNOSTIC AIDS.
5. Turn ignition off. Disconnect air bag 4-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) to female side of harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0017 is retrieved, go to step 11 . If DTC B0017 is not retrieved, go to next step.
6. Turn ignition off. Disconnect passenger-side air bag module in line connector. If connector has corrosion, damaged terminals or poor connections, go to next step. If connector is okay, go to step 8 .
7. If male side of connector is damaged, replace passenger-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. If female side of connector is damaged, replace connector. Go to step 18 .
8. Remove SIR Driver-Passenger Load Tool (J-38715-A) from 4-pin connector. Reconnect 4-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) on female end of passenger-side air bag module harness. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0017 is not retrieved, go to step 10 . If DTC B0017 is

retrieved, go to next step.

9. Turn ignition off. Repair open or high resistance condition between circuit 1403 and 1404 between 4-pin connector and passenger-side air bag module. Go to step 18 .
10. Turn ignition off. Replace passenger-side air bag. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 18 .
11. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from harness connector. Disconnect SDM harness connector. Inspect SDM harness connection for corrosion, damage or poor contact. If damage is found, go to next step. If terminals are okay, go to step 13 .
12. Replace SDM harness connector. Go to step 18 .
13. Using Digital Multimeter (J-39200), measure resistance between passenger-side air bag harness connector terminal "A" and SDM connector terminal No. A3. See **Fig. 12** & **Fig. 15** . If resistance is less than 0.5 ohms, go to step 15 . If resistance is 0.5 ohms or greater, go to next step.
14. Repair open or high resistance in circuit 1403. Go to step 18 .
15. Measure resistance between passenger-side harness connector terminal "B" and SDM connector terminal No. A8. See **Fig. 13** & **Fig. 16** . If resistance is less than 0.5 ohms, go to step 17 . If resistance is 0.5 ohms or greater, go to next step.
16. Repair open or high resistance in circuit 1404. Go to step 18 .
17. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
18. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0018: PASSENGER DEPLOYMENT LOOP VOLTAGE OUT OF RANGE

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. DEPLOYMENT LOOP VOLTAGE test is performed to ensure voltage is within normal range. If voltage test does not detect out of range condition (due to short to voltage), SDM then performs DEPLOYMENT LOOP RESISTANCE test. Resistance test will not be performed if voltage test detects out of range condition, due to short to voltage.

Conditions For Setting DTC

DTC sets when passenger deployment loop voltage and resistance tests are not within specified ranges.

DTC will set if DEPLOYMENT LOOP VOLTAGE test is within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.

- PASSENGER HIGH voltage is greater than 6 volts for 300 milliseconds.

DTC will set if DEPLOYMENT LOOP RESISTANCE test is within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- PASSENGER HIGH voltage is less than 2 volts and deployment loop resistance is less than 6 ohms for 300 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC clears when CLEAR CODES is issued via scan tool. History DTC will be clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

A short to battery voltage or ground in air bag module deployment loop can cause an intermittent condition. Inspect circuits 1403 and 1404 carefully for cutting or chafing. If wiring pigtail of passenger-side air bag module is damaged, component must be replaced.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect passenger-side air bag 4-pin connector. If harness connector is damaged or corroded, go to next step. If harness connector is okay, go to step 4 .
3. If female side of connector is damaged, wiring harness must be replaced. If male side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 20 .
4. Reconnect passenger-side air bag 4-pin connector. Ensure CPA clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0018 is retrieved, go to next step. If DTC B0018 is not retrieved, go to DIAGNOSTIC AIDS.
5. Turn ignition off. Disconnect passenger-side air bag 4-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) to male side of harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0018 is retrieved, go to step 11 . If DTC B0018 is not retrieved, go to next step.

6. Turn ignition off. Disconnect passenger-side air bag module connector. See **Fig. 15** . If connector is damaged or corroded, go to next step. If connector is okay, go to step 8 .
7. If male side of connector is damaged, passenger-side air bag module must be replaced. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 20 .
8. Disconnect SIR Driver-Passenger Load Tool (J-38715-A) from 4 pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) to female side of passenger-side air bag module inline connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0018 is not retrieved, go to step 10 . If DTC B0018 is retrieved, go to next step.
9. Turn ignition off. Repair short to ground or voltage between circuits 1403 and 1404. Go to step 20 .
10. Turn ignition off. Replace passenger-side air bag. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 20 .
11. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from harness connector. Disconnect SDM harness connector. Using Digital Multimeter (J-39200), measure resistance between ground and SDM harness connector terminal No. A3. See **Fig. 12** . If resistance is not infinite, go to next step. If resistance is infinite, go to step 13 .
12. Repair short to ground in circuit 1403. Go to step 20 .
13. Using Digital Multimeter (J-39200), measure resistance between ground and SDM harness connector terminal No. A8. See **Fig. 12** . If resistance is not infinite, go to next step. If resistance is infinite, go to step 15 .
14. Repair short to ground in circuit 1404. Go to step 20 .
15. Turn ignition on. Using Digital Multimeter (J-39200), measure voltage between ground and SDM connector terminal No. A3. See **Fig. 12** . If voltage is one volt or greater, go to next step. If voltage is less than one volt, go to step 17 .
16. Repair short to voltage in circuit 1403. Go to step 20 .
17. Using Digital Multimeter (J-39200), measure voltage between ground and SDM connector terminal No. A8. See **Fig. 12** . If voltage is one volt or greater, go to next step. If voltage is less than one volt, go to step 19 .
18. Repair short to voltage in circuit 1404. Go to step 20 .
19. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
20. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0022: DRIVER DEPLOYMENT LOOP RESISTANCE LOW

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. DEPLOYMENT LOOP VOLTAGE test is performed to ensure

voltage is within normal range. If voltage test does not detect out of range condition (due to short to voltage), SDM then performs DEPLOYMENT LOOP RESISTANCE test. Resistance test will not be performed if voltage test detects out of range condition, due to short to voltage.

Conditions For Setting DTC

DTC sets when driver deployment loop voltage and resistance tests are not within specified ranges.

DTC will set if DEPLOYMENT LOOP VOLTAGE and DEPLOYMENT LOOP RESISTANCE tests are within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- Deployment loop is not open.
- Deployment loop is not shorted to ground.
- Deployment loop resistance is at less 1.3 ohms for 300 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC clears when CLEAR CODES command is issued via scan tool. History DTC clears when 255 malfunction-free ignition cycles have occurred.

Diagnostic Aids

An intermittent condition is likely to be caused by a short between circuits 347 and 348, or a malfunctioning shorting bar on driver-side air bag connector or SIR coil connector.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect driver-side air bag 2-pin connector. If harness connector shows signs of corrosion, damaged terminals or poor connections, go to next step. If harness connector is okay, go to step 4 .
3. If female side of harness connector is damaged, wiring harness must be replaced. If

male side of harness connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 12 .

4. Reconnect driver-side air bag 2-pin connector. Ensure CPA clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0022 is retrieved, go to next step. If DTC B0022 is not retrieved, see DIAGNOSTIC AIDS.
5. Turn ignition off. Disconnect driver-side air bag 2-pin connector and 4-pin inline connector. Install SIR Driver-Passenger Load Tool (J-38715-A) to male side of harness connectors. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0022 is retrieved, go to step 9 . If DTC B0022 is not retrieved, go to next step.
6. Turn ignition off. Disconnect driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Remove SIR Driver-Passenger Load Tool (J-38715-A) from driver-side air bag 2-pin connector. Reconnect 2-pin connector. Connect SIR Driver-Passenger Load Tool (J-38715-A) to upper SIR coil-to-air bag module connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0022 is retrieved, go to step 8 . If DTC B0022 is not retrieved, go to next step.
7. Turn ignition off. Replace driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 12 .
8. Turn ignition off. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 12 .
9. Turn ignition off. Disconnect SIR Driver-Passenger Load Tool (J-38715-A). Disconnect SDM connector. Using Digital Multimeter (J-39200), measure resistance between SDM harness connector terminals No. A6 and A7. See **Fig. 12** . If resistance is not infinite, go to next step. If resistance is infinite, go to step 11 .
10. Repair short between circuits 347 and 348 between 2-pin inline connector and SDM. Go to step 12 .
11. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
12. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0024: DRIVER DEPLOYMENT LOOP VOLTAGE OUT OF RANGE

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. DEPLOYMENT LOOP VOLTAGE test is performed to ensure voltage is within normal range. If voltage test does not detect out of range condition (due to short to voltage), SDM then performs DEPLOYMENT LOOP RESISTANCE test. Resistance test will not be performed if voltage test detects out of range condition, due to short to voltage.

Conditions For Setting DTC

DTC sets when driver deployment loop voltage and resistance tests are not within specified ranges.

DTC will set if DEPLOYMENT LOOP VOLTAGE test is within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- DRIVER HIGH voltage is greater than 6 volts for 300 milliseconds. DTC will set if DEPLOYMENT LOOP RESISTANCE test is within the following ranges:
- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- DRIVER HIGH voltage is less than 2 volts and deployment loop resistance is less than 6 ohms for 300 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC clears when CLEAR CODES command is issued via scan tool. History DTC will clear or once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

An intermittent condition is likely to be caused by a short to ground or voltage in driver-side frontal high or low circuits.

Inspect circuits 347 and 348 carefully for cutting or chafing. Damage to pigtail will require replacement of SIR coil.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect driver-side air bag 2-pin connector. If harness connector is corroded, damaged or has poor connections, go to next step. If harness connector is okay, go to step 4 .
3. If female side of connector is damaged, wiring harness must be replaced. If male side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 18 .
4. Reconnect driver-side air bag 2-pin connector. Ensure CPA clip is installed correctly.

Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to next step. If DTC B0024 is not retrieved, go to DIAGNOSTIC AIDS.

5. Turn ignition off. Disconnect 2-pin and 4-pin air bag electrical connectors. Install SIR Driver-Passenger Load Tool (J-38715-A) to male side of 2-pin harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to step 9 . If DTC B0024 is not retrieved, go to next step.
6. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from 2-pin electrical connector. Reconnect 2-pin connector. Connect SIR Driver-Passenger Load Tool (J-38715-A) to SIR coil-to-air bag module connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to step 8 . If DTC B0024 is not retrieved, go to next step.
7. Turn ignition off. Replace driver-side air bag. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 18 .
8. Turn ignition off. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 18 .
9. Turn ignition off. Disconnect SDM connector. Disconnect SIR Driver-Passenger Load Tool from 2-pin connector. Using Digital Multimeter (J-39200), measure resistance between ground and SDM harness connector terminal No. A6. See **Fig. 12** . If resistance is not infinite, go to next step. If resistance is infinite, go to step 11 .
10. Repair short to ground in circuit 347. Go to step 18 .
11. Using Digital Multimeter (J-39200), measure resistance between ground and SDM harness connector terminal No. A7. See **Fig. 12** . If resistance is not infinite, go to next step. If resistance is infinite, go to step 13 .
12. Repair short to ground in circuit 348. Go to step 18 .
13. Turn ignition on. Measure voltage between ground and SDM connector terminal No. A6. See **Fig. 12** . If voltage is one volt or greater, go to next step. If voltage is less than one volt, go to step 15 .
14. Repair short to voltage in circuit 347. Go to step 18 .
15. Measure voltage between ground and SDM connector terminal No. A7. See **Fig. 12** . If voltage is one volt or greater, go to next step. If voltage is less than one volt, go to step 17 .
16. Repair short to voltage in circuit 348. Go to step 18 .
17. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
18. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0026: DRIVER DEPLOYMENT LOOP OPEN

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. DEPLOYMENT LOOP VOLTAGE test is performed to ensure voltage is within normal range. If voltage test does not detect out of range condition (due to short to voltage), SDM then performs DEPLOYMENT LOOP RESISTANCE test. Resistance test will not be performed if voltage test detects out of range condition, due to short to voltage.

Conditions For Setting DTC

DTC sets when driver deployment loop voltage and resistance tests are not within specified ranges.

DTC will set if DEPLOYMENT LOOP VOLTAGE test is within the following ranges:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- DRIVER HIGH voltage is less than 2 volts.
- Deployment loop resistance is at least 6 ohms for 300 milliseconds. DTC will set if DEPLOYMENT LOOP RESISTANCE test is within the following ranges:
- IGNITION POSITIVE VOLTAGE is within normal operating range.
- Deployment loop is not shorted to voltage.
- Deployment loop is not shorted to ground.
- Deployment loop resistance is greater than 4.8 ohms for 300 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC clears when CLEAR CODES command is issued via scan tool.

History DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

An intermittent condition is likely to be caused by a poor connection at driver-side air bag connector terminals "A" or "B", SIR connector terminals "A" or "B", SDM harness connector or an open in circuits 347 or 348.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Disconnect driver-side air bag inline 2-pin connector. Check connector for corrosion, damaged terminals or poor connections. If terminals are damaged or corroded, go to next step. If terminals are okay, go to step 4 .
3. If female side of connector is damaged, wire harness must be replaced. If male side of connector is damaged, replace connector. Go to step 16 .
4. Reconnect driver-side air bag inline 2-pin connector. Ensure CPA clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0026 is retrieved, go to next step. If DTC B0026 is not retrieved, go to DIAGNOSTIC AIDS.
5. Turn ignition off. Disconnect 2-pin and 4-pin inline air bag connectors. Install SIR Driver-Passenger Load Tool (J-38715-A) in 2-pin inline connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0026 is retrieved, go to step 9 . If DTC B0026 is not retrieved, go to next step.
6. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from 2-pin line connector. Reconnect 2-pin connector halves. Connect SIR Driver-Passenger Load Tool (J-38715-A) to SIR coil-to-air bag module connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to step 8 . If DTC B0024 is not retrieved, go to next step.
7. Turn ignition off. Replace driver-side air bag. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 16 .
8. Turn ignition off. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 16 .
9. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from harness connectors. Disconnect SDM harness connector. Inspect for proper connection at SDM harness connector terminals No. A6 and A7. See **Fig. 12** . If terminals are damaged or corroded, go to next step. If terminals are okay, go to step 11 .
10. Replace SDM harness connector. Go to step 16 .
11. Using Digital Multimeter (J-39200), measure resistance between 2-pin driver-side air bag inline harness connector terminal "B" and SDM connector terminal No. A6. See **Fig. 12** & **Fig. 13** . If resistance is less than 0.5 ohms, go to step 13 . If resistance is 0.5 ohms or greater, go to next step.
12. Repair open or high resistance in circuit 347. Go to step 16 .
13. Measure resistance between driver-side harness connector terminal "A" and SDM connector terminal No. A7. See **Fig. 12** & **Fig. 13** . If resistance is 0-0.5 ohms, go to step 15 . If resistance is greater than 0.5 ohms, go to next step.
14. Repair open or high resistance in circuit 348. Go to step 16 .
15. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.

16. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0051: DEPLOYMENT COMMANDED

Circuit Description

SDM contains a sensing device which converts vehicle velocity changes to an electrical signal. Electrical signal is processed by SDM and compared to a value stored in memory. When signal exceeds stored value, additional signal processing is performed and signals are compared to values stored in memory. When 2 signals exceed stored values, SDM causes current to flow through air bag modules, deploying air bags and causing DTC B0051 to set.

Conditions For Setting DTC

DTC sets when SDM detects a frontal crash, up to 30 degrees off centerline of vehicle, of sufficient force to warrant deployment of air bags.

Action Taken

SDM sets DTC, turns on AIR BAG warning light, and records crash data.

Conditions For Clearing DTC

DTC B0051 is a latched code and cannot be cleared. Replace SDM after completing diagnostic procedure.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. If air bags have deployed, go to step 5 . If air bags have not deployed, go to next step.
3. Inspect front of vehicle and undercarriage for signs of impact. If impact has occurred, go to step 5 . If no impact has occurred, go to next step.
4. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to step 6 .
5. Install scan tool. Request SIR DTC display. If DTC is retrieved, diagnose specific DTC. Replace components and perform inspections as required following an accident.
6. Reconnect all SIR components. Ensure that all components are properly mounted. Use scan tool to clear DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0053: DEPLOYMENT COMMANDED WITH LOOP MALFUNCTION

Circuit Description

SDM contains a sensing device which converts vehicle velocity changes to an electrical signal. Electrical signal is processed by SDM and compared to a value stored in memory. When signal exceeds stored value, additional signal processing is performed and signals are compared to values stored in memory. When 2 signals exceed stored values, SDM will cause current to flow through air bag modules, deploying air bags. DTC B0053 and B0051 will set when a deployment occurs while an inflator circuit fault exists that could result in a non-deployment situation in one or both air bag modules.

Conditions For Setting DTC

DTC sets when SDM detects a frontal crash, up to 30 degrees off centerline of vehicle, of sufficient force to warrant deployment of air bags.

Action Taken

SDM sets DTC B0053 and B0051, turns on AIR BAG warning light, and records crash data.

Conditions For Clearing DTC

DTC B0053 is a latched code and cannot be cleared. Replace SDM after completing diagnostic procedure.

Diagnostic Aids

DTC B0053 will be accompanied by another DTC (other than DTC B1000). Repair malfunction causing other DTCs before installing new SDM.

NOTE: For circuit number and wire color identification, See WIRING DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. If air bags have deployed, go to step 5 . If air bags have not deployed, go to next step.
3. Inspect front of vehicle and undercarriage for signs of impact. If impact has occurred, go to step 5 . If no impact has occurred, go to next step.
4. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to step 6 .
5. Install scan tool. Replace components and perform inspections as required following an

accident.

6. Reconnect all SIR components. Ensure that all components are properly mounted. Turn ignition on. Use scan tool to clear DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0090: ACTIVE SWITCH VOLTAGE OUT OF RANGE

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. SDM monitors voltage levels at Passenger SIR (PSIR) suppression switch enable and disable terminals of SDM to determine position of PSIR suppression switch.

Conditions For Setting DTC

DTC sets when voltage at PSIR suppression switch enable and disable terminals are not within specified ranges.

DTC will set if:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- PSIR suppression switch enable circuit is not shorted to voltage.
- PSIR suppression switch disable circuit is not shorted to voltage.
- Voltage at PSIR suppression switch enable and disable terminals is less than one volt when PASSENGER AIR BAG OFF LED is commanded OFF.
- Voltage at PSIR suppression switch enable and disable terminals is greater than one volt when PASSENGER AIR BAG OFF LED is commanded ON.

Action Taken

SDM commands PASSENGER AIR BAG OFF LED to turn on via class 2 serial data circuit. PSIR suppression switch is defaulted to calibrated state.

Conditions For Clearing DTC

DTC will clear when CLEAR CODES command is issued via scan tool. History DTC will clear when 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

Intermittent condition can occur when a short exists between PSIR suppression switch enable and disable circuits.

NOTE: For circuit number and wire color identification, See WIRING

DIAGRAMS .

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Turn PSIR suppression switch off. Turn ignition on. If passenger air bag off LED illuminates, go to step 16 . If passenger air bag off LED does not illuminate, go to next step.
3. Turn ignition off. Disconnect PSIR suppression switch from connector. Inspect connector for corrosion, terminal damage or poor connections. If damage is found, go to next step. If no damage is found, go to step 5 .
4. Repair or replace PSIR suppression switch connector. Go to step 29 .
5. Inspect PSIR suppression switch terminals for corrosion, terminal damage or poor connections. If damage is found, go to step 27 . If no damage is found, go to next step.
6. Remove LED connector from SIR LED module. See **SIR LED MODULE** under REMOVAL & INSTALLATION. Inspect wiring connector for corrosion, terminal damage or poor connections. If damage is found, go to next step. If no damage is found, go to step 8 .
7. Repair or replace electrical connector. Go to step 29 .
8. Inspect SIR LED module connector for signs of corrosion, terminal damage or poor connections. If damage is found, go to next step. If no damage is found, go to step 10 .
9. Replace SIR LED module. Go to step 29 .
10. Using Digital Multimeter (J-39200), measure resistance of LED in SIR LED module between terminals "A" and "B". See **Fig. 17** . If resistance is less than 0.8 ohms, go to next step. If resistance is 0.8 ohms or greater, go to step 12 .
11. Replace SIR LED module. See **SIR LED MODULE** under REMOVAL & INSTALLATION. Go to step 29 .
12. Ensure that SIR system is disabled. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Using Digital Multimeter (J-39200), measure resistance between PSIR suppression switch terminal "F" and ground. See **Fig. 16** . If resistance is more than 5 ohms, go to next step. If resistance is 5 ohms or less, go to step 14 .
13. Repair open or high resistance in circuit 851. Go to step 29 .
14. Install SDM fuse. Turn ignition on. Using Digital Multimeter (J-39200), measure voltage at PSIR suppression switch terminal "B" and ground. See **Fig. 16** . If voltage is greater than one volt, go to step 16 . If voltage is one volt or less, go to next step.
15. Repair open or high resistance between PSIR suppression switch terminal "A" and SDM fuse in circuit 1139. See **Fig. 16** . Go to step 29 .
16. Turn ignition off. Install scan tool. Turn PSIR suppression switch on. Turn ignition on. Using scan tool, request SIR data list display. If scan tool displays specified state for

active switch as ENABLED, go to step 28 . If specified state for active switch IS NOT shown as ENABLED, go to next step.

17. Turn ignition off. Remove SDM fuse. Disconnect SDM harness connector. Inspect connector for corrosion, terminal damage or poor connections. If damage is found, go to next step. If no damage is found, go to step 19 .
18. Replace SDM harness connector. Go to step 29 .
19. Disconnect SIR suppression switch connector. Using Digital Multimeter (J-39200), measure resistance of circuit 371 between PSIR suppression switch terminal "A" and SDM terminal No. A10. See **Fig. 12** . and 16If resistance is greater than 5 ohms, go to next step. If resistance is 5 ohms or less, go to step 21 .
20. Repair open or high resistance in circuit 371. Go to step 29 .
21. Reconnect SDM harness connector. Using Digital Multimeter (J-39200), measure resistance of circuit 371 between PSIR suppression switch terminal "A" and ground. If resistance is infinite, go to step 23 . If resistance is not infinite, go to next step.
22. Repair short to ground in circuit 371. Go to step 29 .
23. Reconnect PSIR suppression switch terminal connector. Install SDM fuse. Turn ignition on. Turn PSIR suppression switch off. Using Digital Multimeter (J-39200), measure voltage between PSIR suppression switch terminal "A" and ground. If voltage is more than 2 volts, go to next step. If voltage is 2 volts or less, go to step 25 .
24. Repair short to voltage in circuit 371. Go to step 29 .
25. Turn ignition off. Using Digital Multimeter (J-39200), measure resistance between PSIR suppression switch terminals "A" and "E". If resistance is less than 0.8 ohms, go to next step. If resistance is 0.8 ohms or greater, go to step 27 .
26. Repair short between PSIR suppression switch enable and disable circuits. Go to step 29 .
27. Replace PSIR suppression switch. See **PASSENGER SIR (PSIR) SUPPRESSION SWITCH** under REMOVAL & INSTALLATION.
28. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
29. Reconnect all SIR components. Ensure that all components are properly mounted. Using scan tool, clear all DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0091: ACTIVE SWITCH: WRONG STATE

Circuit Description

When ignition switch is turned to RUN position, SDM performs tests to diagnose critical internal malfunctions. SDM monitors voltage levels at Passenger SIR (PSIR) suppression switch enable and disable terminals of SDM to determine position of PSIR suppression switch. SDM performs continuous diagnostic tests on deployment loop voltage and resistance.

Conditions For Setting DTC

DTC sets when voltage at PSIR suppression switch enable and disable terminals are not within specified ranges.

DTC will set if:

- IGNITION POSITIVE VOLTAGE is within normal operating range.
- PSIR suppression switch enable circuit is not shorted to voltage.
- PSIR suppression switch disable circuit is not shorted to voltage.
- Voltage at PSIR suppression switch enable terminal is high with PASSENGER AIR BAG LED ON and voltage at PSIR disable terminal is low.

Action Taken

SDM commands AIR BAG warning light on and SIR suppression switch is defaulted to calibrated state.

Conditions For Clearing DTC

DTC will clear when CLEAR CODES command is issued via scan tool. History DTC will clear when 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

When SDM determines that no DTCs are present, SDM will command AIR BAG warning light off. An intermittent condition can be caused by a short between SIR suppression switch enable and disable circuits.

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Install scan tool. Turn ignition off. Use scan tool to observe SIR suppression switch active switch data in SDM data list. If scan tool indicates that PSIR suppression switch is disabled, go to next step. If scan tool indicates that PSIR suppression switch is not disabled, go to step 6 .
3. Turn PSIR suppression switch on and then turn PSIR suppression switch off. Use scan tool to observe PSIR suppression switch active switch data in SDM data list. If switch data changes between on and off, go to next step. If switch data does not change, go to step 6 .
4. If LED illuminates in air bag LED module when PSIR suppression switch is set to off position, go to step 6 . If LED does not illuminate, go to next step.
5. Turn ignition off. Inspect for LED module harness connector for poor connections. If

connection problems are found, correct condition and go to step 12 . If no connection problems are found, go to next step.

6. Turn ignition off. Disconnect PSIR suppression switch connector from PSIR suppression switch. Turn ignition on. Use scan tool to observe PSIR suppression switch active switch data parameter. If scan tool indicates that PSIR suppression switch is disabled, go to next step. If scan tool does not indicate that PSIR suppression switch is disabled, go to step 8 .
7. Inspect PSIR suppression switch harness connector for damage. If damage is found, correct condition and go to step 12 . If no damage is found, go to step 10 .
8. Disconnect SDM harness connector. Using Digital Multimeter (J-39200), measure resistance between terminals "A" and "E" of PSIR suppression switch connector. See **Fig. 16** . If resistance is not infinite, repair short and go to step 12 . If resistance is infinite, go to next step.
9. Inspect SDM harness connector for corrosion, damaged terminals or poor connections. If damage is found, correct condition and go to step 12 . If no damage is found go to step 11 .
10. Replace PSIR suppression switch. See **PASSENGER SIR (PSIR) SUPPRESSION SWITCH** under REMOVAL & INSTALLATION.
11. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
12. Reconnect all SIR components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B1001: OPTION CONFIGURATION ERROR

NOTE: BCM and PCM must be reprogrammed if DTC 1001 is detected. Follow scan tool manufacturers instructions for reprogramming BCM or PCM.

Circuit Description

When ignition is turned on, BCM and PCM send identification information to SDM. BCM sends information containing the last 4 digits of the SDM part number. PCM sends information containing a partial VIN. SDM compares this information to numbers stored in memory.

Conditions For Setting DTC

DTC sets when IGNITION POSITIVE voltage is within normal operating range and one or both messages received from PCM and BCM do not match SDM stored information.

Action Taken

SDM sets DTC, turns on AIR BAG warning light, and disables air bag deployment.

Conditions For Clearing DTC

DTC clears when information SDM receives from PCM and BCM match stored information.

Diagnostic Aids

If BCM or PCM is replaced, it will need to be reprogrammed to match SDM identifier information. DTC 1001 may also be an indication that an incorrect SDM has been installed.

Diagnostic Procedure

1. If SIR Diagnostic System Check has been performed, go to next step. If SIR Diagnostic System Check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Install scan tool to DLC. Using scan tool, verify PCM VIN matches vehicle VIN. If VIN numbers match, go to step 4 . If VIN numbers do not match, go to next step.
3. Using scan tool, reprogram PCM to match vehicle VIN. Go to step 6 .
4. If BCM was replaced, reprogram BCM. If BCM was not replaced, go to next step.
5. Turn ignition off. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION.Go to next step.
6. Reconnect all SIR components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

WIRE REPAIR

SIR system requires special wiring repair procedures due to sensitive nature of circuitry. Wire Repair Kit (J-38125-B) 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 pigtails) 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 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
Steering wheel nut	30 (41)
	Inch-lbs N.m
Center console nut	89 (10)
Driver-side air bag module fasteners	54 (6)
Front-end discriminating sensor fasteners	89 (10)
Glove box	
Upper screws	17 (1.9)
Lower bolts	106 (12)
Instrument panel trim pad	
to air bag module bracket bolt	17 (1.9)
to cluster bezel bolt	12 (1.3)
to defroster duct bolt	17 (1.9)
to hinge pillar bolt	22 (2.5)
to knee bolster bolt	17 (1.9)
Passenger-side air bag module fasteners	89 (10)
Sensing & Diagnostic Module (SDM) bolts	89 (10)

WIRING DIAGRAMS

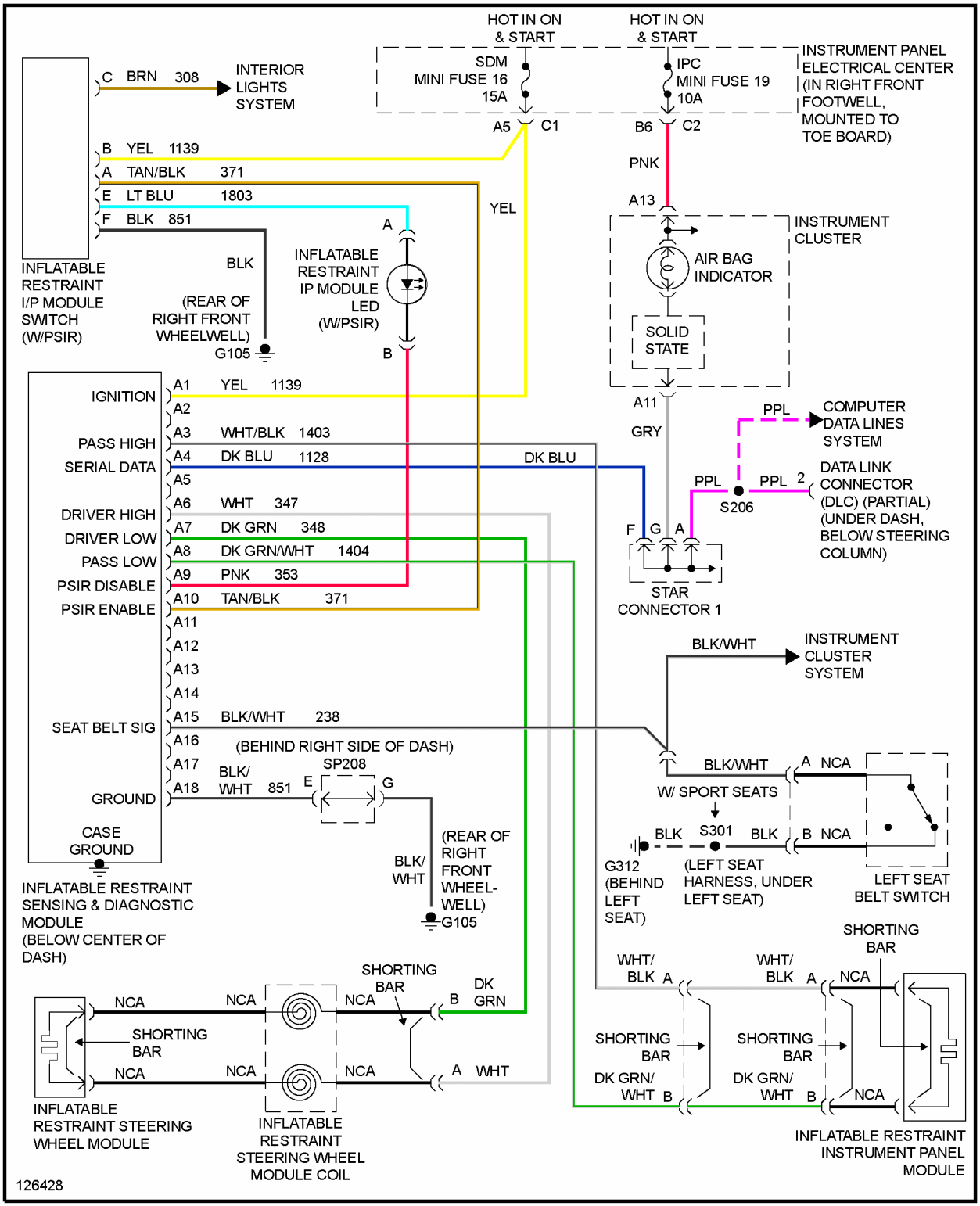

Fig. 18: SIR System Wiring Diagrams (Corvette)