

2003 Isuzu Ascender

2003 ACCESSORIES/SAFETY EQUIPMENT Isuzu - Air Bag Restraint Systems

2003 ACCESSORIES/SAFETY EQUIPMENT

Isuzu - Air Bag Restraint Systems

DESCRIPTION & OPERATION

WARNING: Accidental air bag deployment is possible. Personal injury may result. Read and follow all **WARNINGS** and **AIR BAG SAFETY PRECAUTIONS** before working on air bag system or related components.

Supplemental Inflatable Restraint (SIR) system is designed to supplement protection provided by driver-side and passenger-side seat belts. A frontal collision of sufficient force will deploy driver-side and passenger-side dual stage air bag modules. A side impact of sufficient force will deploy side impact air bag module on side of collision. Steering column and knee bolsters also absorb collision energy. Sensing and Diagnostic Module (SDM) also maintains a 23 Volt Loop Reserve (23 VLR) energy supply to provide deployment energy for up to one minute after loss of voltage.

SIR system consists of Sensing and Diagnostic Module (SDM), dual stage driver-side and passenger-side air bag modules, left and right Electronic Frontal Sensors (EFS), left and right single stage side impact air bag modules, left and right Side Impact Sensors (SIS) and AIR BAG warning light.

COMPONENT LOCATIONS

COMPONENT LOCATIONS

Component	Location
AIR BAG warning light	In Instrument Panel Cluster (IPC)
Driver-side air bag module	On steering wheel
Electronic Frontal Sensors (EFS)	Left & right side of front frame crossmember
Knee bolsters	Driver-side and passenger-side lower instrument panel
Passenger-side air bag module	Passenger-side instrument panel
Sensing & Diagnostic Module (SDM)	Under center console
Side impact air bag modules	Driver-side & passenger-side front seat outer seat backs
Side Impact Sensors (SIS)	Driver-side & passenger-side lower front doors
SIR coil assembly	Under steering wheel

SYSTEM OPERATION CHECK

If system is functioning normally, AIR BAG warning light flashes 7 times when ignition is turned on and then turns off. 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 is turned on.

AIR BAG SAFETY PRECAUTIONS

Observe these precautions when servicing the air bag system:

- SDM maintains sufficient voltage to cause air bag deployment for up to one minute after ignition is turned off, battery is disconnected or fuse powering SDM is removed. Disable air bag system before working on vehicle. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
- If vehicle interior is exposed to moisture and becomes soaked up to level of SDM, SDM and harness connector must be replaced. SDM could be activated when powered, causing air bag deployment.
- 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.
- SIR components should not be subjected to temperatures greater than 150°F (65°C).
- SIR components should not be used if they have been dropped from a height of 3 feet (0.9 m) or greater.
- When carrying a live air bag module, trim cover should be pointed away from body to minimize injury in case of accidental deployment.
- 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 a 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 test requests it, as this will set a Diagnostic Trouble Code (DTC).
- DO NOT attempt to repair SIR components. If defective, components must be replaced.
- DO NOT probe a wire through insulator. Wire will be damaged and eventually fail 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 tests 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.
- If SIR system is not fully functional for any reason, vehicle should not be driven until system is repaired. Never remove bulbs, modules, sensors or other components or in any way disable SIR system from operating normally.

ADJUSTMENTS

CENTERING SIR COIL ASSEMBLY

With Centering Window & Service Lock

Hold SIR coil face up. See **Fig. 1** . While depressing service lock, rotate coil hub clockwise until it stops. Rotate coil hub counterclockwise slowly until centering window appears Yellow and line-up marks are aligned.

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Release service lock.

With Centering Window & No Service Lock

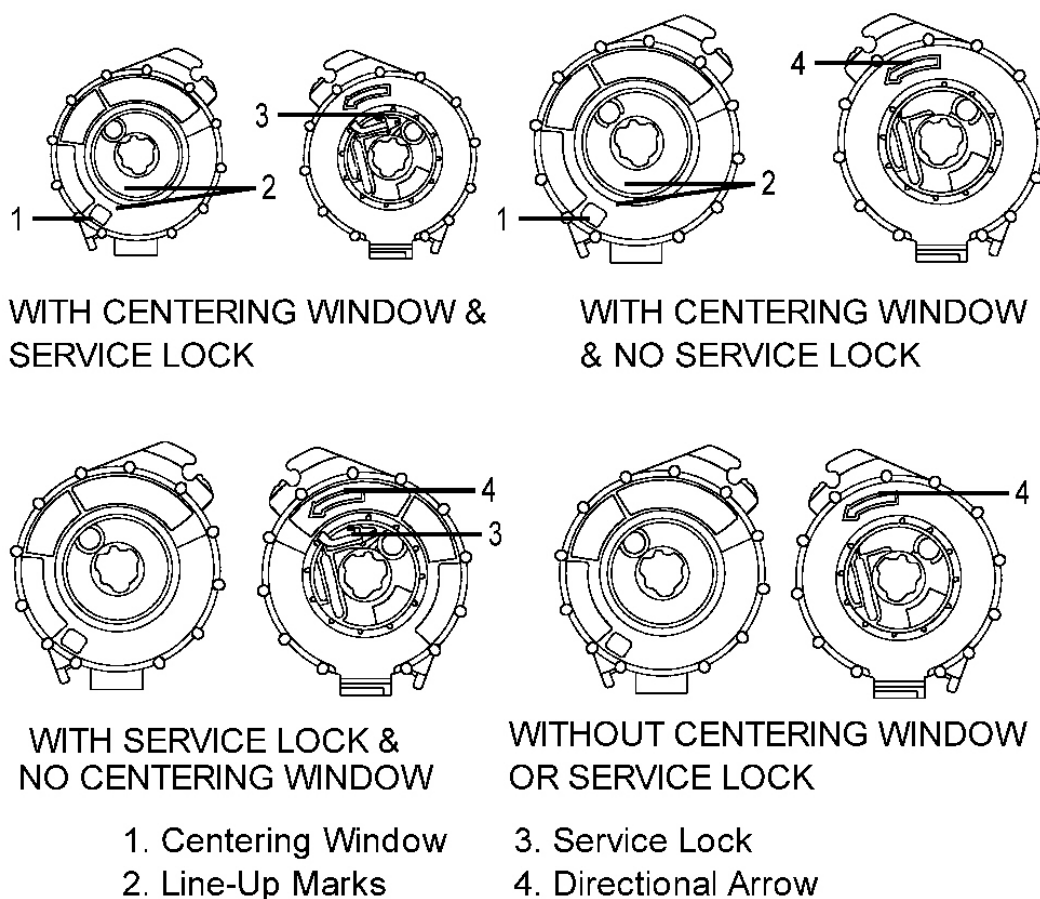
Hold SIR coil face up. See **Fig. 1** . Rotate coil hub clockwise until it stops. Rotate coil hub counterclockwise slowly until centering window appears Yellow and both line-up marks are aligned. Prevent coil hub from moving until installed on steering column.

With Service Lock & No Centering Window

Hold SIR coil assembly with rear side facing up. See **Fig. 1** . While depressing service lock, rotate coil hub in direction indicated by directional arrow until it stops. Rotate coil hub in opposite direction 2 1/2 turns. Release service lock.

Without Centering Window Or Service Lock

Hold SIR coil assembly face up. See **Fig. 1** . Rotate coil hub in direction of arrow until it stops. Rotate coil hub in opposite direction 2 1/2 turns. Prevent coil hub from moving until installed on steering column.

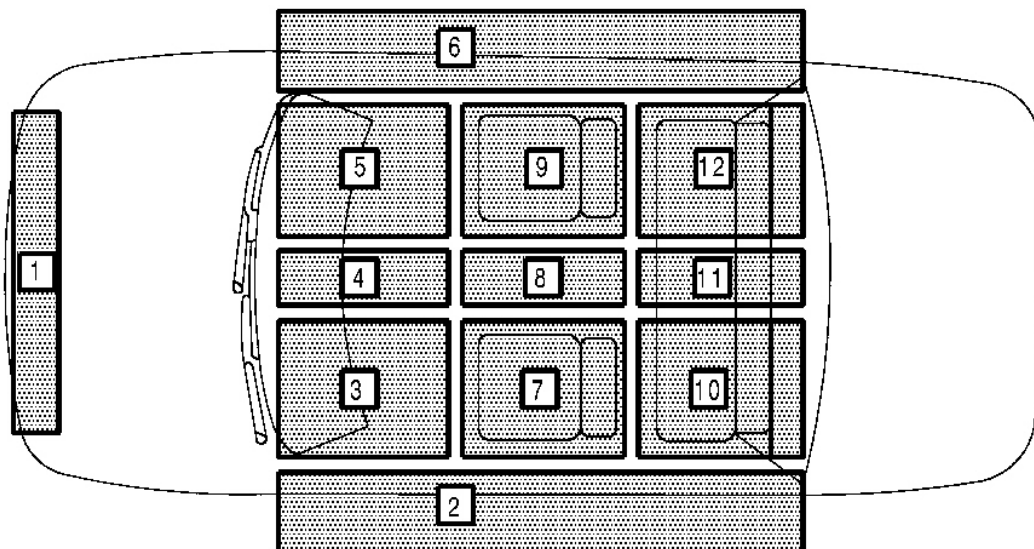


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Fig. 1: Identifying SIR Coil Assembly Types
Courtesy of ISUZU MOTOR CO.

DISABLING & ACTIVATING AIR BAG SYSTEM

NOTE: SIR components are placed in various zones. Work being performed will determine applicable disabling and activating procedure. See **REMOVAL & INSTALLATION**. To identify disabling and activating component zones, refer to illustration. See **Fig. 2**.



NOTE: SIR components may not be in all zones, depending on vehicle configuration.

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Fig. 2: Identifying SRS Component Disabling & Activating Zones (Typical)
Courtesy of ISUZU MOTOR CO.

DISABLING SYSTEM

WARNING: Accidental air bag deployment is possible. Personal injury could occur. Read and follow service precautions. See AIR BAG SAFETY PRECAUTIONS.

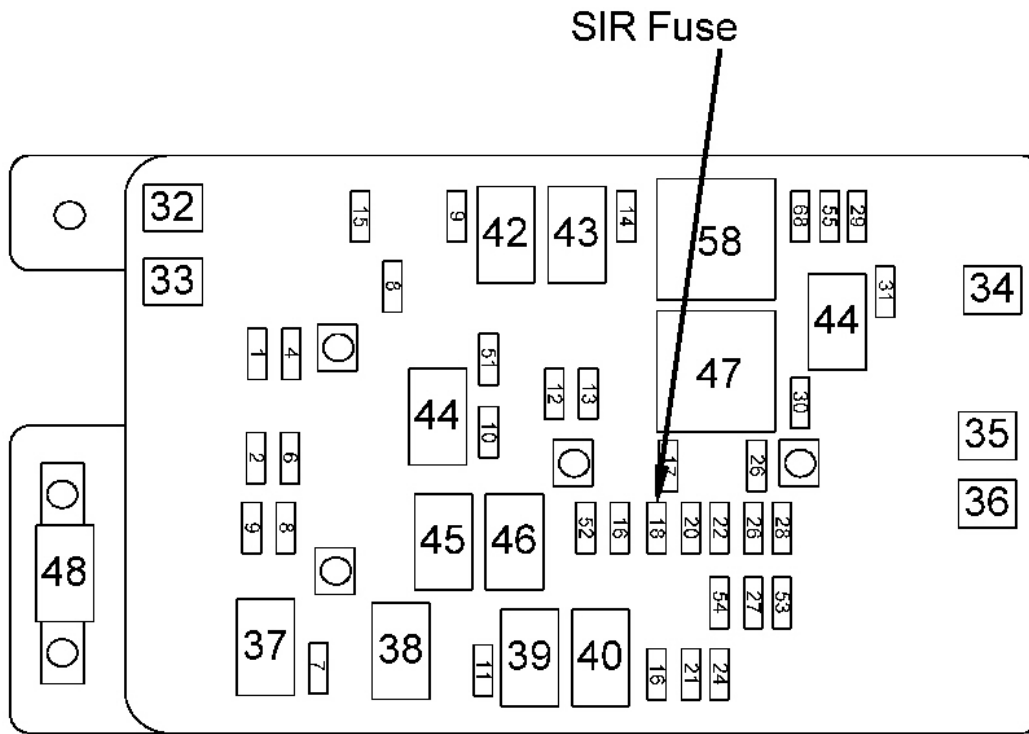
NOTE: When SIR fuse is removed and ignition is on, AIR BAG warning light will be on. This does not indicate a system malfunction.

Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See Fig. 3.
2. Remove front grille. Remove Electronic Frontal Sensor (EFS) bracket from bumper. See Fig. 4. Remove Connector Position Assurance (CPA) clip from left and right EFS connectors. Disconnect EFS connectors.

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Fig. 3: Identifying SIR Fuse Location
Courtesy of ISUZU MOTOR CO.

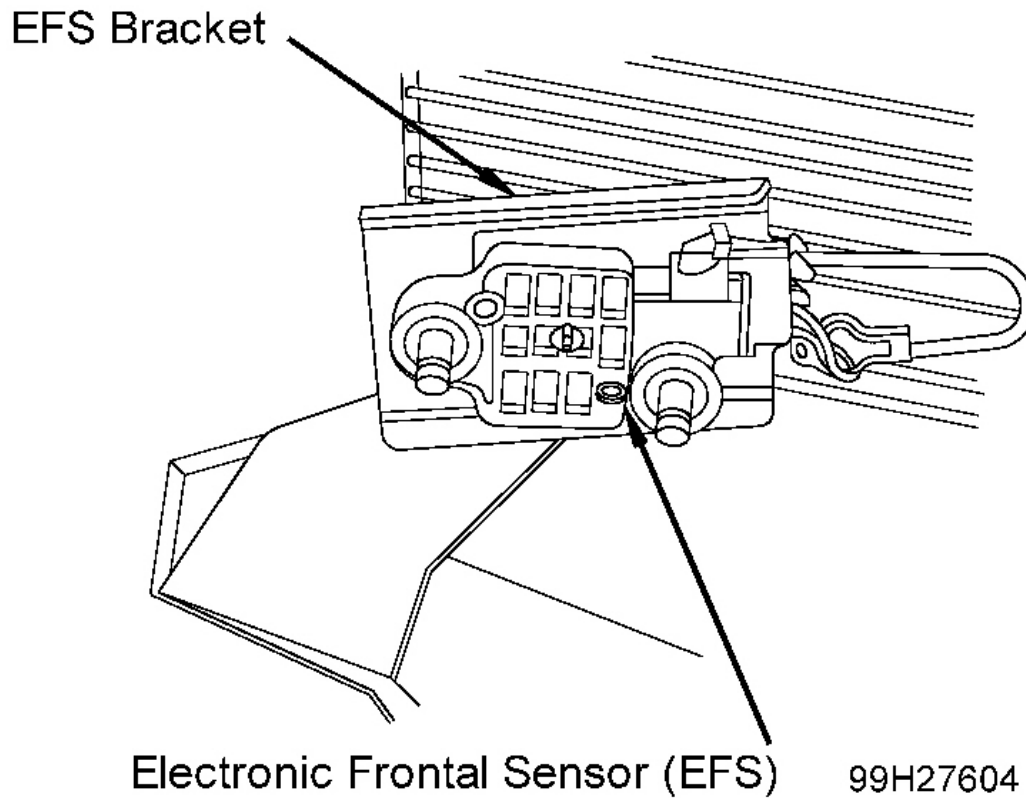
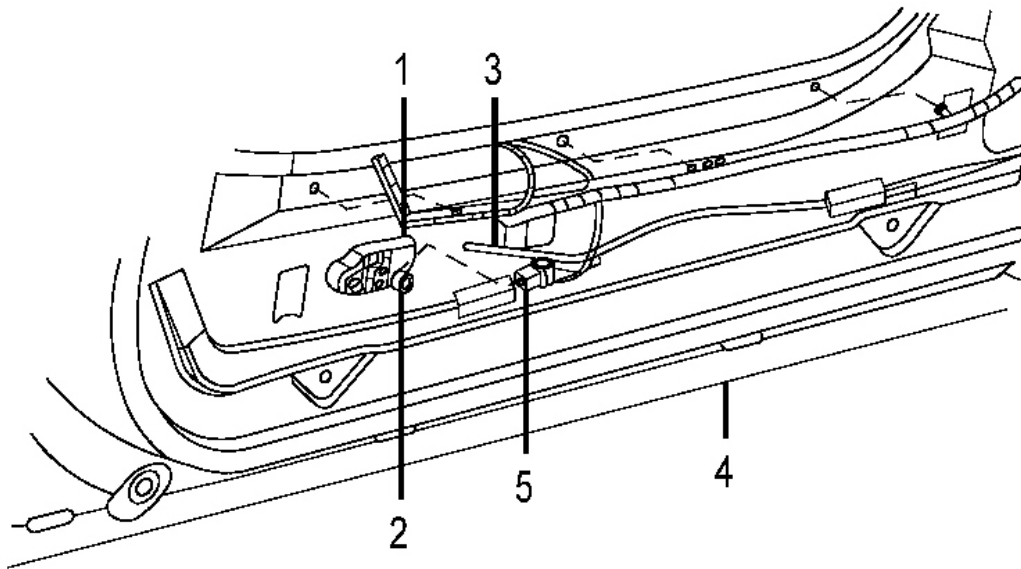


Fig. 4: Identifying Electronic Frontal Sensor (EFS)
Courtesy of ISUZU MOTOR CO.

Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3** .
2. Remove driver-side door trim panel. Remove Connector Position Assurance (CPA) clip from left Side Impact Sensor (SIS) connector. See **Fig. 5** . Disconnect electrical connector from SIS.



1. Side Impact Sensor (SIS)
2. Bolt
3. Connector Position Assurance (CPA) Clip
4. Front Door
5. Electrical Connector

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Fig. 5: Identifying Side Impact Sensor (SIS)

Courtesy of ISUZU MOTOR CO.

Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3**.
2. Remove driver-side knee bolster. Remove Connector Position Assurance (CPA) clip from driver-side air bag module connector. See **Fig. 6**. Disconnect driver-side air bag module connector.

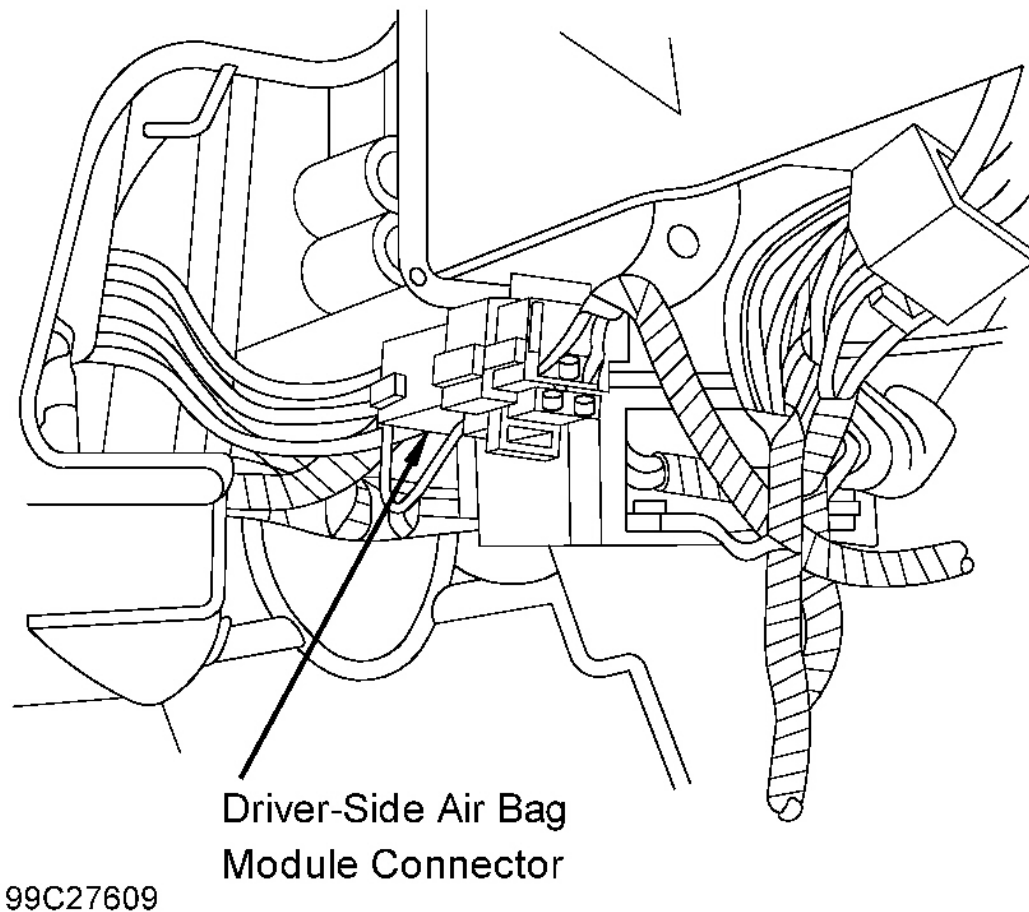
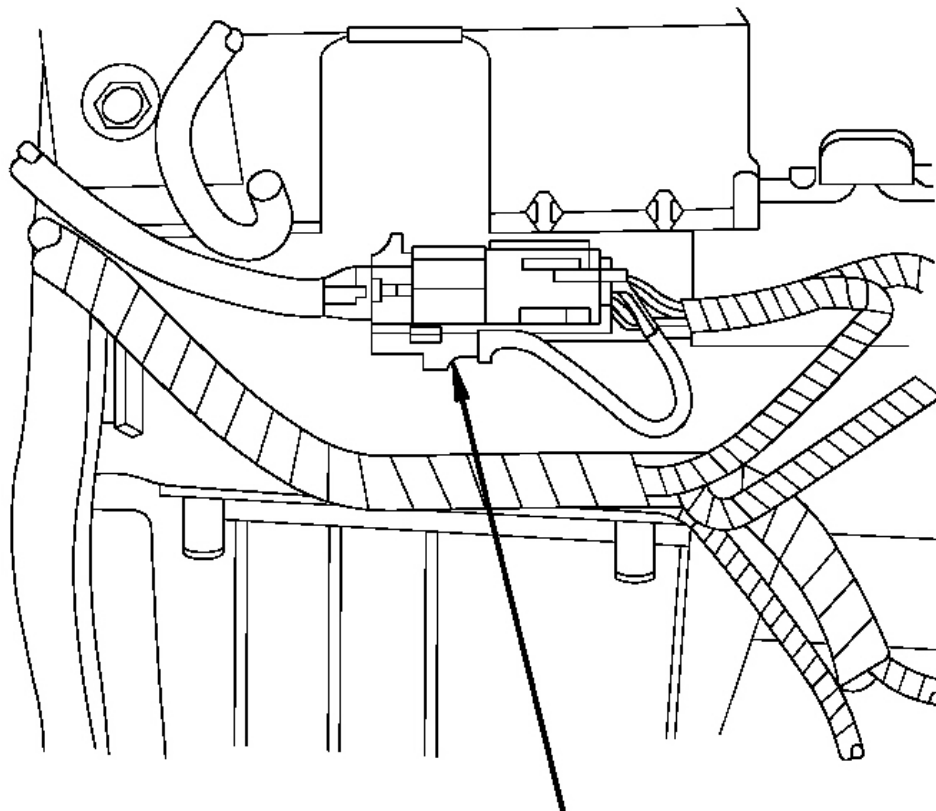


Fig. 6: Identifying Driver-side Air Bag Module Connector
Courtesy of ISUZU MOTOR CO.

Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3** .
2. Open glove box to access passenger-side air bag module connector. See **Fig. 7** . Remove Connector Position Assurance (CPA) clip from passenger-side air bag module connector. Disconnect passenger-side air bag module connector.



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Passenger-Side Air Bag
Module Connector

Fig. 7: Identifying Passenger-side Air Bag Module Connector
Courtesy of ISUZU MOTOR CO.

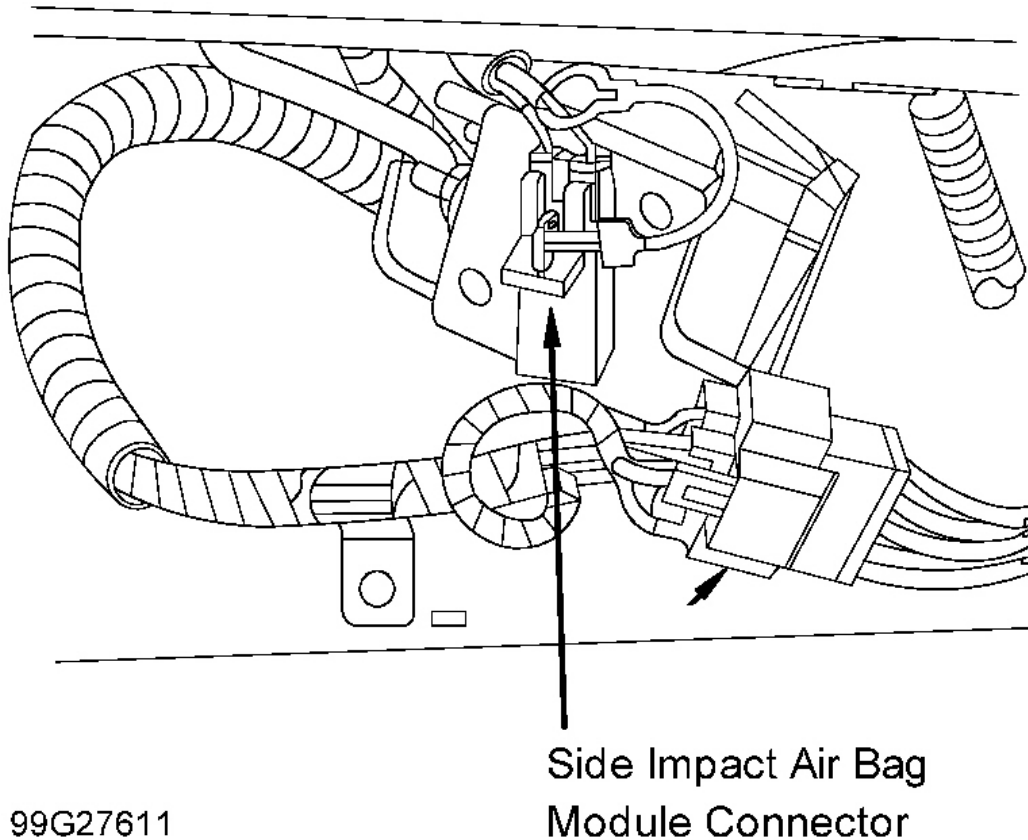
Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3** .
2. Remove passenger-side door trim panel. Remove Connector Position Assurance (CPA) clip from right Side Impact Sensor (SIS) connector. See **Fig. 5** . Disconnect electrical connector from SIS.

Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3** .
2. Remove Connector Position Assurance (CPA) clip from left side impact air bag module connector,

located under driver's seat. See **Fig. 8** . Disconnect driver side impact air bag module connector.



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Side Impact Air Bag
Module Connector

Fig. 8: Identifying Side Impact Air Bag Module Connector.
Courtesy of ISUZU MOTOR CO.

Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3** .
2. Remove driver-side knee bolster. Remove Connector Position Assurance (CPA) clip from driver-side air bag module connector. See **Fig. 6** . Disconnect driver-side air bag module connector.
3. Open glove box. Remove CPA clip from passenger-side air bag module connector. See **Fig. 7** . Disconnect passenger-side air bag module connector.
4. Disconnect CPA clip from driver side impact air bag module connector, located under driver seat. See **Fig. 8** . Disconnect driver side impact air bag module connector. Remove CPA clip from passenger side impact air bag module connector, located under passenger front seat. Disconnect passenger side impact air bag module connector.

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Zone

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition off and remove key. Remove SIR fuse (15-amp) from underhood fuse block. See **Fig. 3**.
2. Remove Connector Position Assurance (CPA) clip from right side impact air bag module connector, located under passenger seat. See **Fig. 8**. Disconnect passenger side impact air bag module connector.

ACTIVATING SYSTEM

Zone

1. Ensure ignition is off and key is removed. Connect left and right Electronic Frontal Sensor (EFS) connectors. Install Connector Position Assurance (CPA) clips. Install EFS bracket to bumper. See **Fig. 4**.
2. Install SIR fuse in fuse block. See **Fig. 3**. Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK**.

Zone

1. Connect electrical connector to left Side Impact Sensor (SIS). See **Fig. 5**. Install Connector Position Assurance (CPA) clip. Install driver-side door trim panel.
2. Install SIR fuse in fuse block. See **Fig. 3**. Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK**.

Zone

1. Connect driver-side air bag module connector. See **Fig. 6**. Install Connector Position Assurance (CPA) clip. Install driver-side knee bolster.
2. Install SIR fuse in fuse block. See **Fig. 3**. Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK**.

Zone

1. Connect passenger-side air bag module connector. See **Fig. 7**. Install Connector Position Assurance (CPA) clip. Close glove box.
2. Install SIR fuse in fuse block. See **Fig. 3**. Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK**.

Zone

1. Connect electrical connector to right Side Impact Sensor (SIS). See **Fig. 5**. Install Connector Position Assurance (CPA) clip. Install passenger-side door trim panel.
2. Install SIR fuse in fuse block. See **Fig. 3**. Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK**.

Zone

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1. Connect left side impact air bag module connector, located under driver's front seat. See **Fig. 8** . Install Connector Position Assurance (CPA) clip.
2. Install SIR fuse in fuse block. See **Fig. 3** . Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK** .

Zone

1. Connect right side impact air bag module connector, located under passenger's front seat. See **Fig. 8** . Install Connector Position Assurance (CPA) clip. Connect left side impact air bag module connector, located under driver front seat. Install CPA clip.
2. Connect passenger-side air bag module connector. See **Fig. 7** . Install CPA clip. Close glove box door.
3. Connect driver-side air bag module connector. See **Fig. 6** . Install CPA clip. Install driver-side knee bolster.
4. Install SIR fuse in fuse block. See **Fig. 3** . Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK** .

Zone

1. Connect right side impact air bag module connector, located under passenger's front seat. See **Fig. 8** . Install Connector Position Assurance (CPA) clip.
2. Install SIR fuse in fuse block. See **Fig. 3** . Staying well away from air bag modules, turn ignition on. Check air bag system for proper operation. See **SYSTEM OPERATION CHECK** .

DISPOSAL PROCEDURES

WARNING: Accidental air bag deployment is possible. Personal injury may result. Read and follow service precautions. See **AIR BAG SAFETY PRECAUTIONS** .

NOTE: If vehicle is to be scrapped, perform on-vehicle air bag deployment procedure. See **ON-VEHICLE DEPLOYMENT** . If vehicle will remain in service, perform off-vehicle deployment procedure. See **OFF-VEHICLE DEPLOYMENT** .

Always 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 damaged during disposal.

ON-VEHICLE DEPLOYMENT

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Put on safety glasses.
2. Cut air bag module harness connectors from vehicle leaving at least 6" (152 mm) of wire at the connector for each wire lead. See **Fig. 6** , **Fig. 7** & **Fig. 8** . Strip 0.50" (13 mm) of insulation from each wire lead to the connector. Cut 2 deployment wires at least 15 feet (4.6 m) long from 18-gauge multi-strand wire.

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Strip 0.50" (13 mm) of insulation from each connector wire lead. Twist wires together at one end to short.

3. For driver-side and passenger-side air bag module leads, twist together wires for Stage 1 and Stage 2 high-side deployment loops. See **WIRING DIAGRAMS** . Connect twisted wire pair to end of one deployment wire. See **Fig. 9** . Bend twisted connection flat and wrap tightly with electrical tape. Repeat procedure for Stage 1 and Stage 2 low-side deployment loop leads. For side impact air bag module leads, connect lead from connector wire to end of each deployment wire. See **Fig. 10** . Bend twisted connection flat and wrap tightly with electrical tape to insulate. Repeat this step for remaining connector wire lead.
4. Remove all loose objects from front seat. Ensure no one is in vehicle. Connect deployment harness to driver-side air bag module connector. Stretch wires away from car as far as possible. Cover windshield and front door openings with a drop cloth. Separate wire ends. Connect wires to a 12-volt battery. Air bag should deploy. If air bag does not deploy, go to step 6 . If air bag did 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.
5. Repeat steps 2 through for passenger-side and side impact air bag modules. Wear gloves and safety glasses when handling deployed air bag modules. Wash hands with mild soap and water.
6. If air bag modules DO NOT deploy, carefully remove from vehicle. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Temporarily store module with trim cover facing up. Contact manufacturer for additional instructions.

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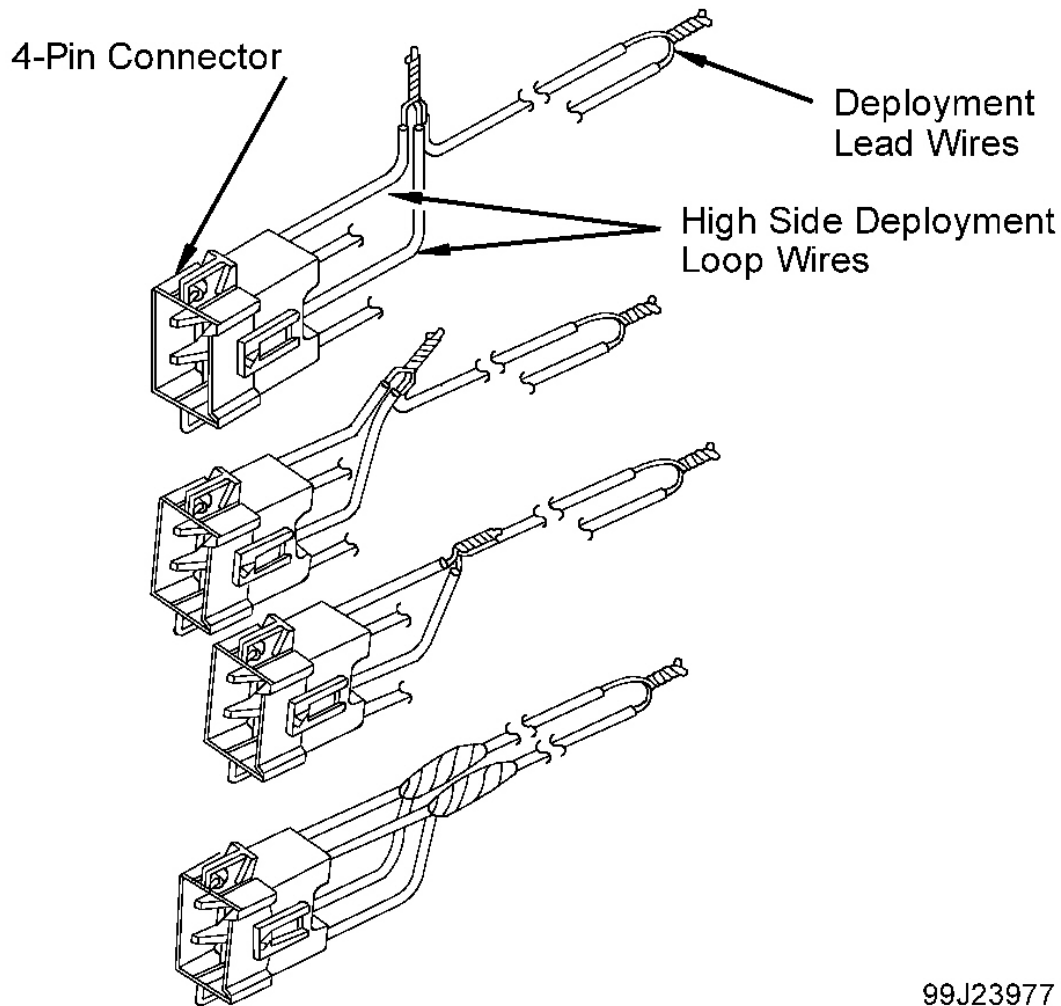
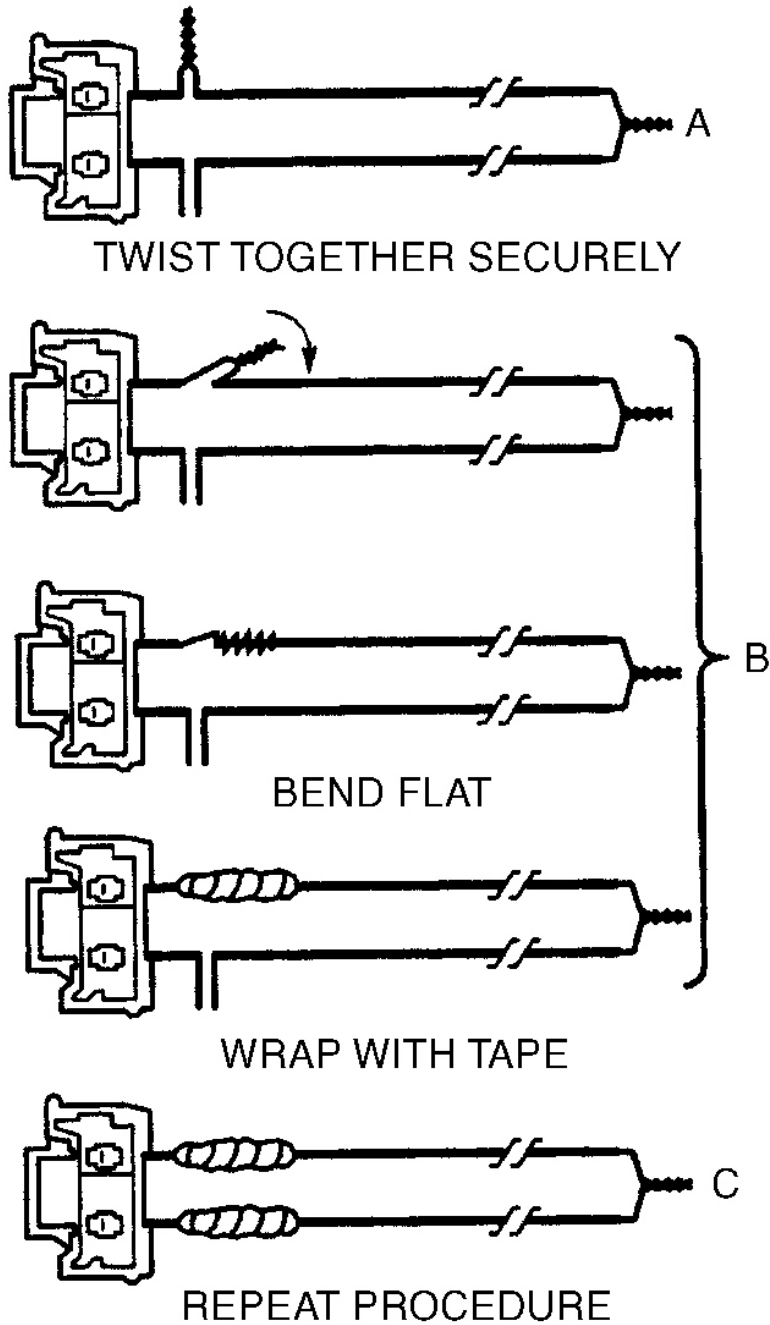


Fig. 9: Preparing Deployment Harness For Driver-side & Passenger-side Air Bag Module On-vehicle Deployment
Courtesy of ISUZU MOTOR CO.



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Fig. 10: Preparing Deployment Harness For Side Impact Air Bag Module On-vehicle Deployment
 Courtesy of ISUZU MOTOR CO.

OFF-VEHICLE DEPLOYMENT

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1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Turn ignition off, remove key and put on safety glasses. Short 2 SIR Deployment Harness (J38826) leads together by fully seating one banana plug into the other. Connect appropriate pigtail adapter to SIR deployment harness. See **Fig. 11** .
2. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Place driver-side air bag module on ground (preferably outdoors on paved surface) at least 6 feet (1.8 m) 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.
3. For single-stage air bag modules, connect air bag module to SIR deployment harness. For dual-stage air bag modules, connect air bag module to deployment harness using Deployment Adapter (J38826-75). Ensure area around air bag module is clear of people and objects. Verify that air bag module is resting with trim cover facing up.
4. Separate 2 banana plugs on SIR deployment harness. Connect SIR deployment harness wires to battery. Air bag module should deploy. If air bag module does not deploy, go to step 6 . If air bag module does deploy, 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.
5. Using SIR Deployment Tool (J39401-B) to hold air bag module, repeat deployment procedure for passenger-side and side impact air bag modules.
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 additional instructions.

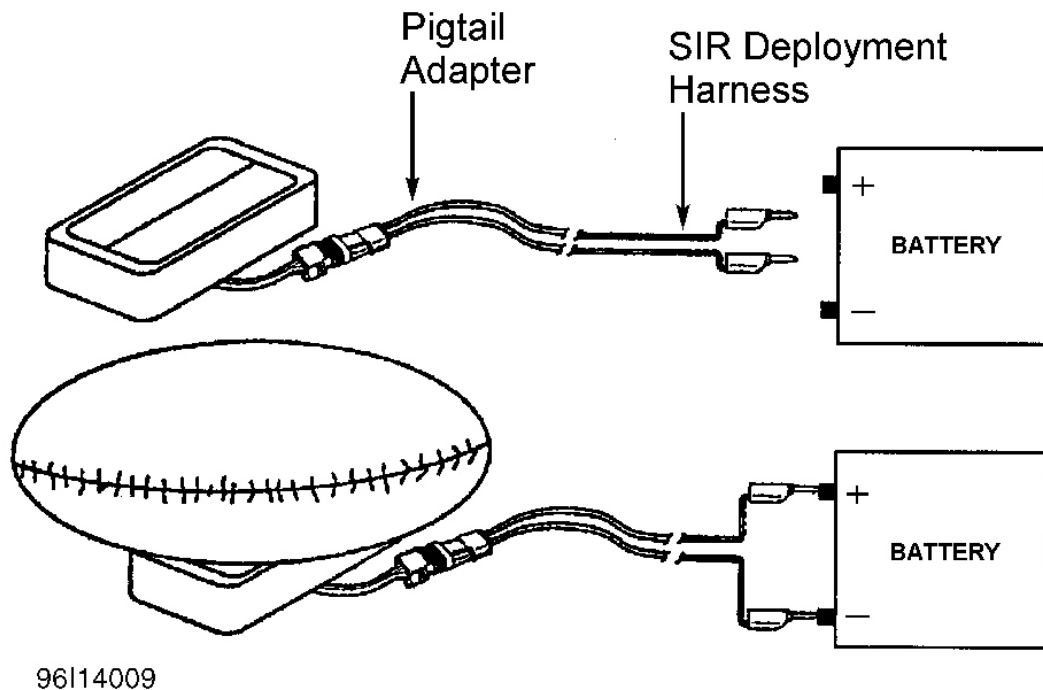


Fig. 11: Preparing Deployment Harness For Off-vehicle Deployment
Courtesy of ISUZU MOTOR CO.

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 **AIR BAG/SRS COMPONENT INSPECTION & REPLACEMENT TABLES** article in the GENERAL INFORMATION section.

REMOVAL & INSTALLATION

WARNING: Accidental air bag deployment is possible. Personal injury could occur. Read and follow service precautions. See **AIR BAG SAFETY PRECAUTIONS** .

AIR BAG MODULES

Removal & Installation (Driver-side)

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **ZONE 3** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Insert flat-blade screwdriver into holes on each side of steering wheel to release leaf springs from air bag

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module retaining pins. See **Fig. 12** . Turn steering wheel 180 degrees to access remaining holes. Pull air bag module away from steering wheel.

3. Disconnect air bag wire harness from clips on air bag module and steering wheel. Remove Connector Position Assurance (CPA) clips and disconnect electrical connectors from driver-side air bag module. Remove driver-side air bag module.
4. To install, reverse removal procedure. Ensure driver-side air bag module leaf springs engage with pins on driver-side air bag module. Activate air bag system. See **ZONE 3** under DISABLING & ACTIVATING AIR BAG SYSTEM.

Removal & Installation (Passenger-side)

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **ZONE 5** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Remove access panel from end of passenger-side instrument panel. Remove screw from passenger-side air duct extension. Remove air duct extension. Remove passenger-side air bag module bolts. Remove Instrument Panel Cluster (IPC) trim. Remove nuts from left and right side of passenger-side air bag module. Remove passenger-side air bag module. See **Fig. 13** .
3. To install, reverse removal procedure. Tighten air duct screw and passenger-side air bag module nuts and bolts to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. See **ZONE 5** under DISABLING & ACTIVATING AIR BAG SYSTEM.

Removal & Installation (Side Impact)

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. For left side impact air bag module, see **ZONE 7** under DISABLING & ACTIVATING AIR BAG SYSTEM.. For right side impact air bag module, see **ZONE 9** under DISABLING & ACTIVATING AIR BAG SYSTEM..
2. Remove applicable front seat from vehicle. Remove seat trim panel. Remove seat back cover and pad. Remove seat back panel. Remove push pin securing top of seat belt retractor assembly to seat back frame. Remove screws securing side impact air bag module to seat back. Disconnect side impact air bag module wiring harness. Remove side impact air bag module from front seat. See **Fig. 14** .
3. To install, reverse removal procedure. Tighten side impact air bag module screws to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. For passenger side impact air bag module, see **ZONE 9** under DISABLING & ACTIVATING AIR BAG SYSTEM.. For driver side impact air bag module, see **ZONE 7** under DISABLING & ACTIVATING AIR BAG SYSTEM..

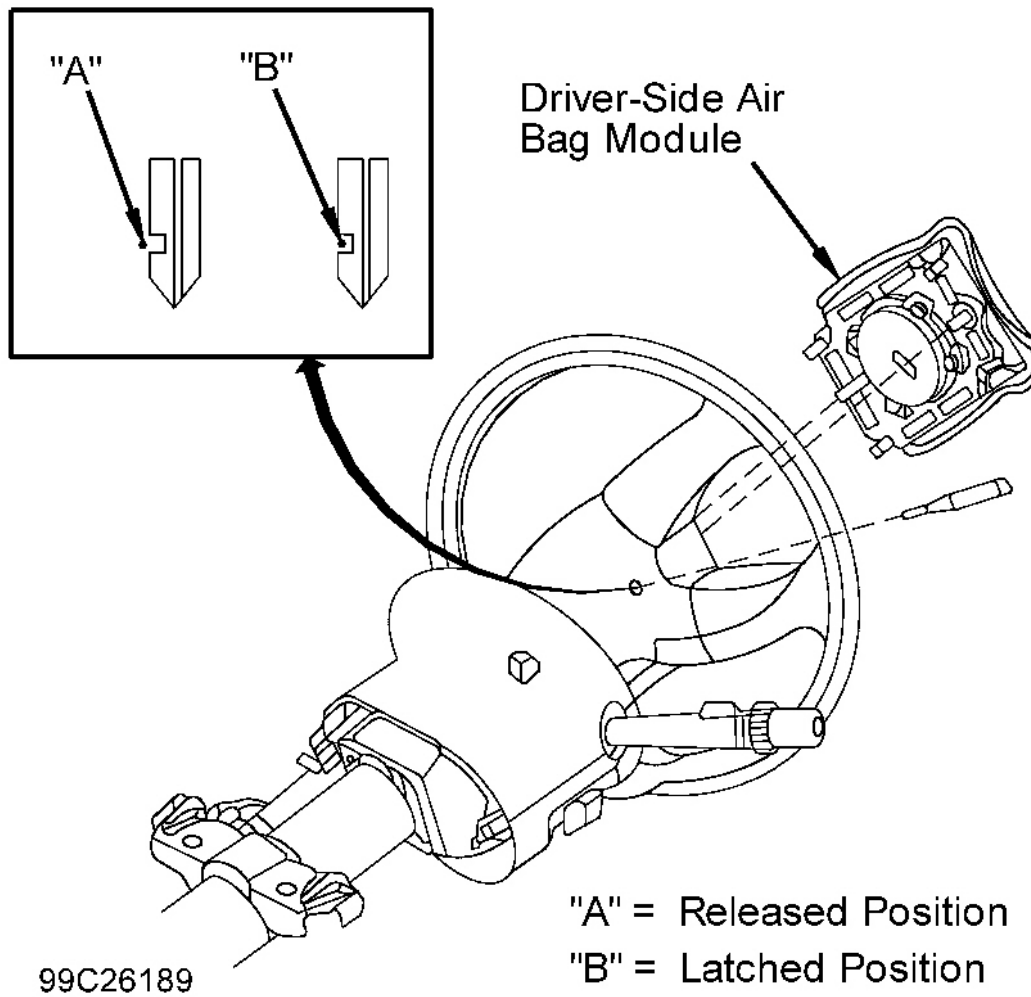


Fig. 12: Identifying Driver-side Air Bag Module
Courtesy of ISUZU MOTOR CO.

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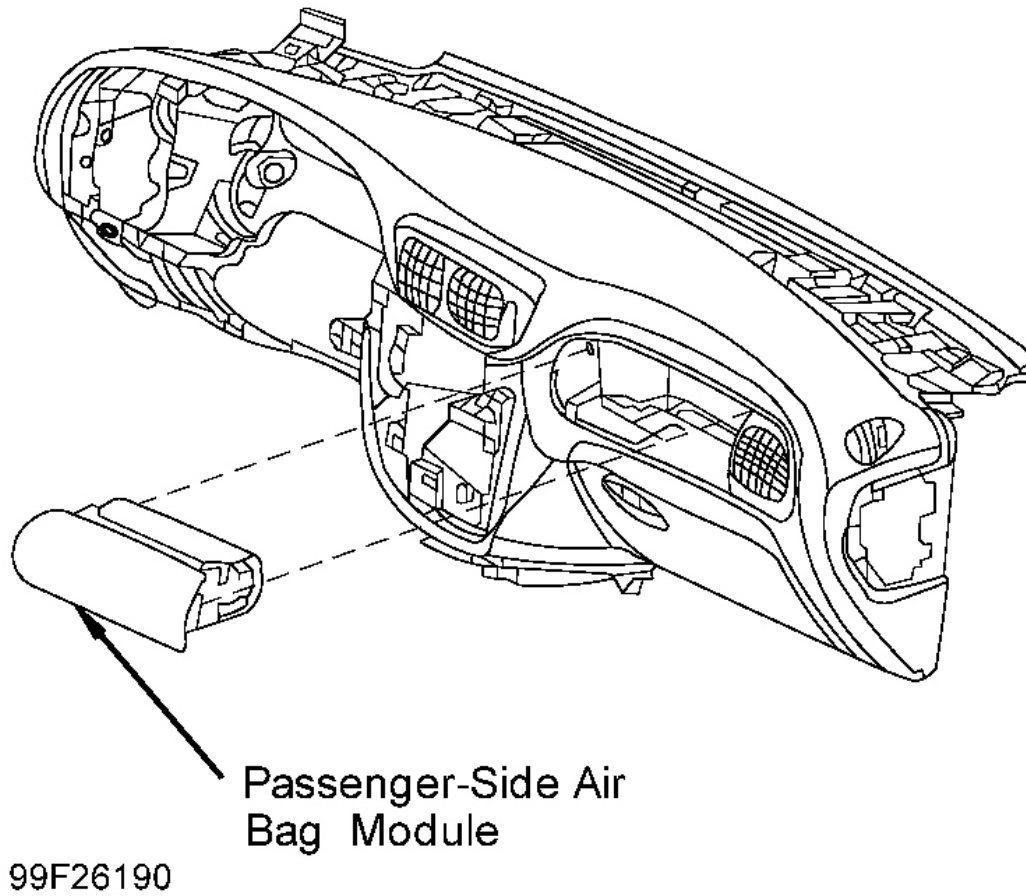


Fig. 13: Identifying Passenger-side Air Bag Module
Courtesy of ISUZU MOTOR CO.

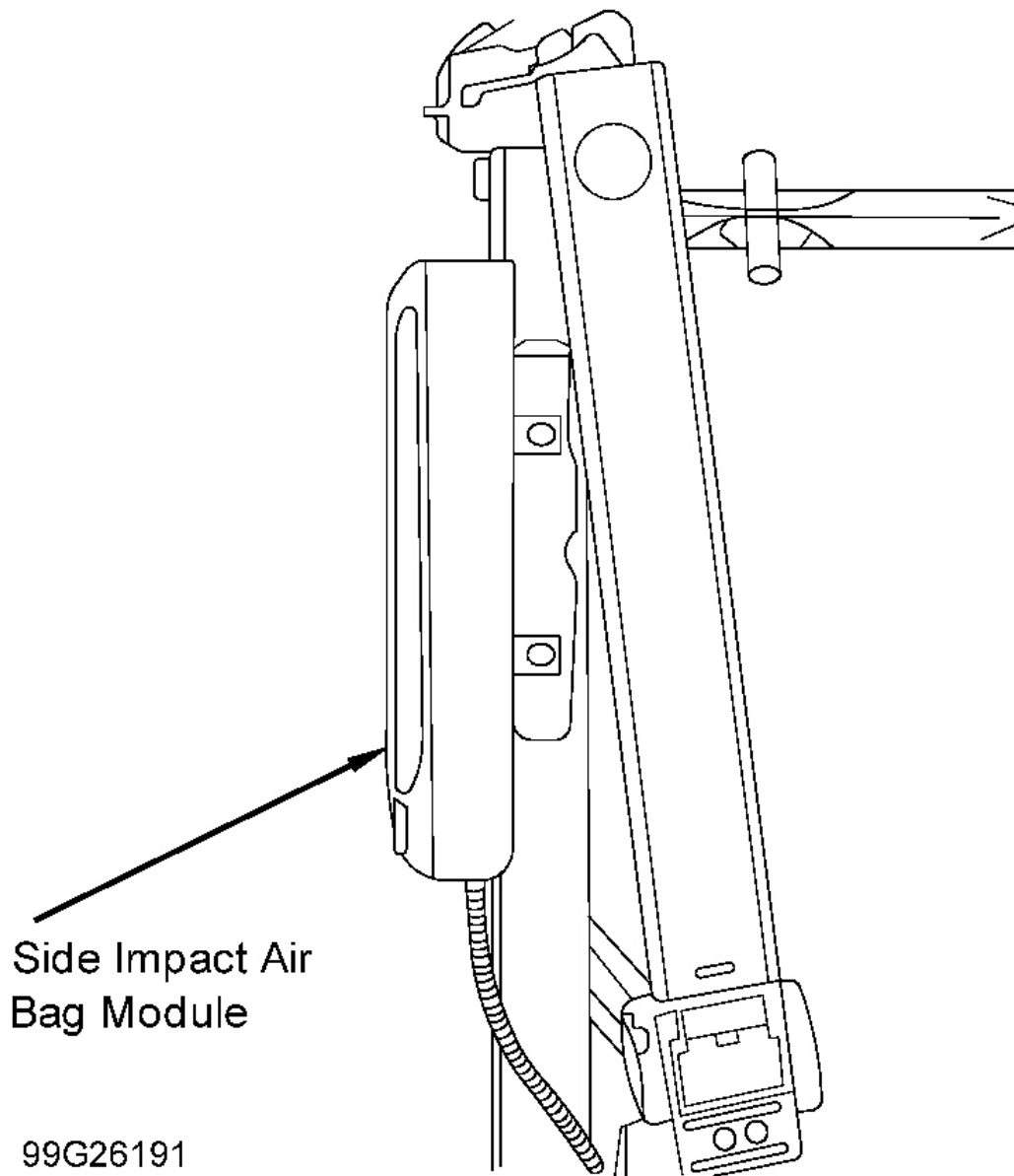


Fig. 14: Identifying Side Impact Air Bag Module
Courtesy of ISUZU MOTOR CO.

CENTER CONSOLE (SIDE IMPACT)

Removal & Installation

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Block wheels to prevent vehicle from

moving.

2. Remove rubber ashtray inserts and rubber mat from center console. Remove shift lever bezel. Remove console storage compartment. Remove center console retaining screws. Pull parking brake to full up position. Release 2 forward trim extensions.
3. Slide console rearward. See **Fig. 15** . Raise rear of console to access electrical and disconnect electrical connectors. Lower parking brake to half way position. Remove center console.
4. To install, reverse removal procedure. Tighten center console retaining screws to specification. See **TORQUE SPECIFICATIONS** .

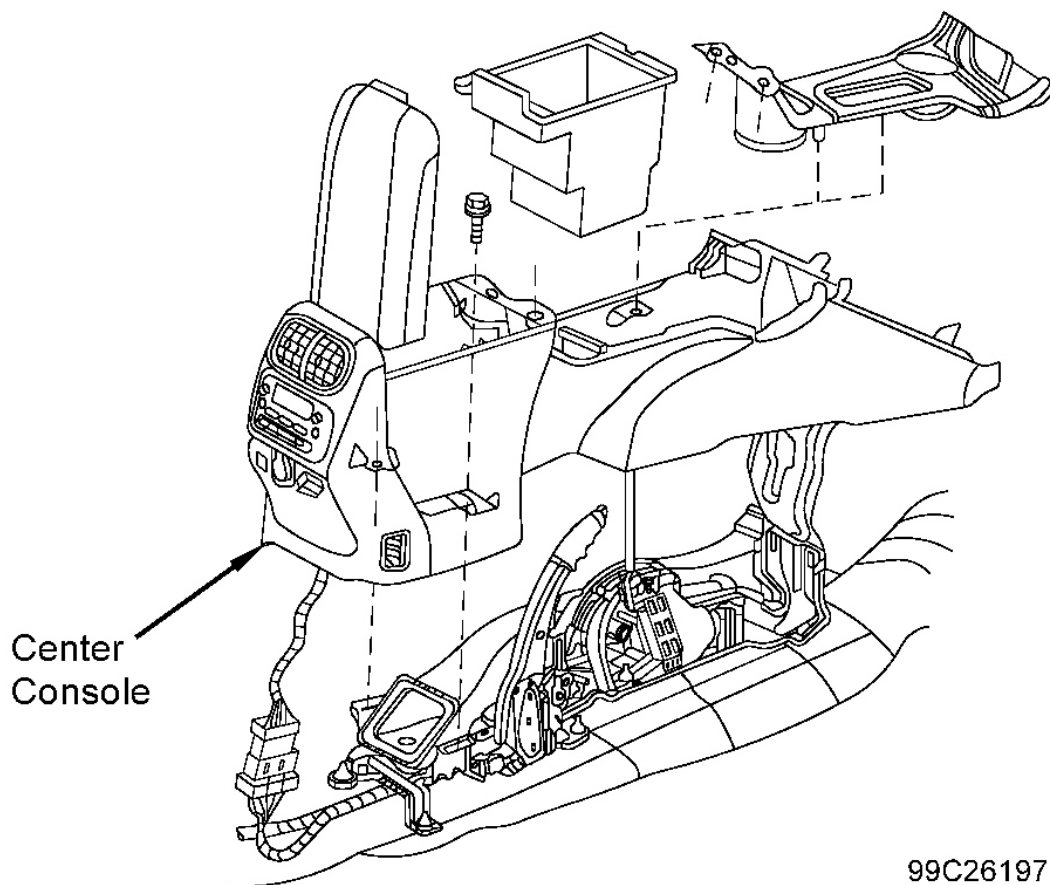


Fig. 15: Identifying Center Console
Courtesy of ISUZU MOTOR CO.

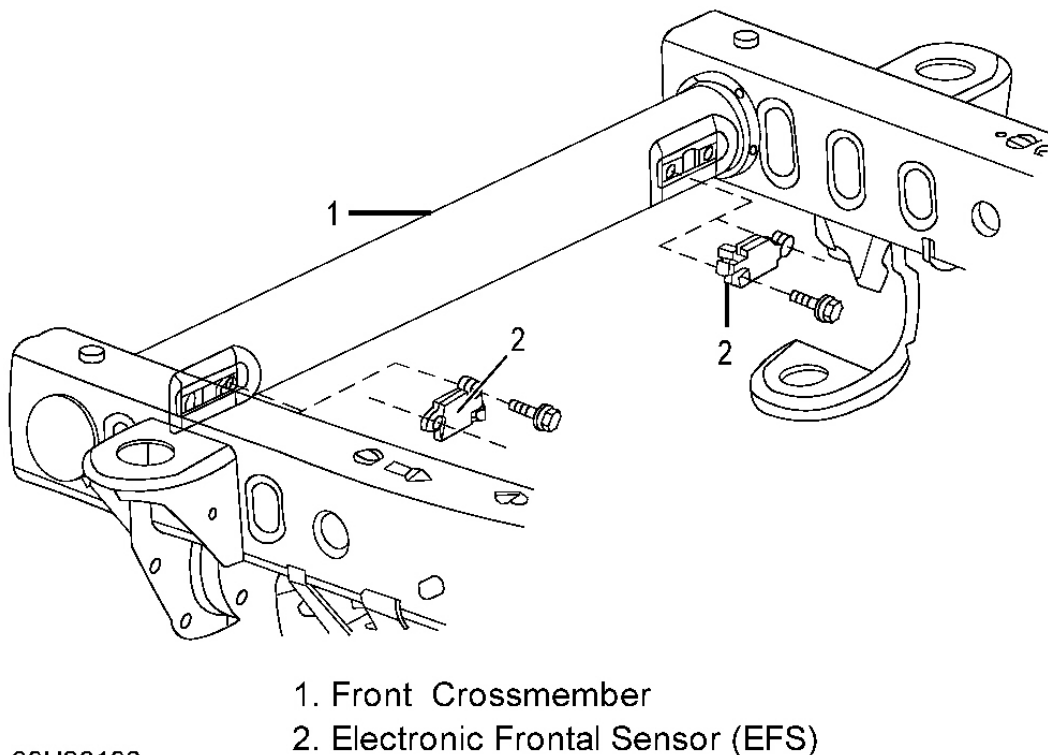
ELECTRONIC FRONTAL SENSOR (EFS)

Removal & Installation

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

under **DISABLING & ACTIVATING AIR BAG SYSTEM**.

2. Remove grille. Remove headlight wire harness retaining clip. Raise and support wire harness to gain access to EFS. Remove applicable EFS sensor bracket bolts. Remove retaining bolts and protective cover from EFS. Remove Connector Position Assurance (CPA) clip from EFS connector. See **Fig. 16** . Disconnect EFS connector.
3. To install, reverse removal procedure. Tighten EFS bolts to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. See **ZONE 1** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.



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Fig. 16: Identifying Electronic Frontal Sensors (EFS)
Courtesy of ISUZU MOTOR CO.

INSTRUMENT PANEL CLUSTER (IPC)

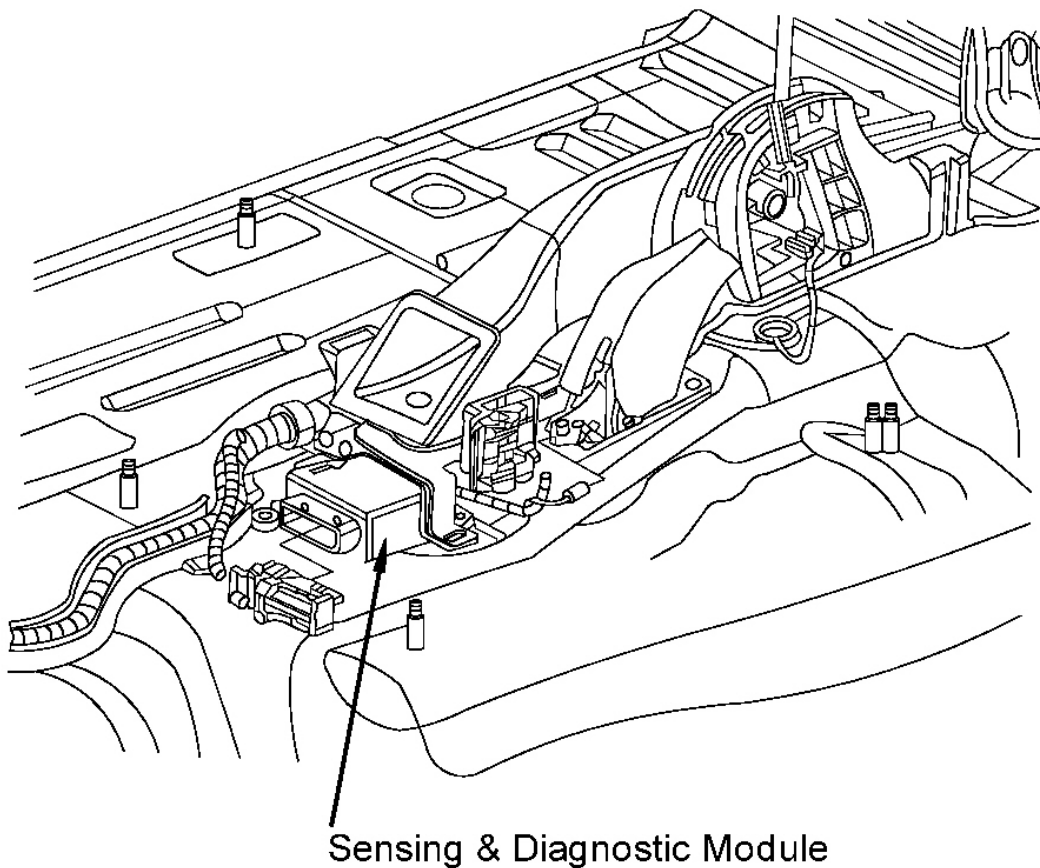
Removal & Installation

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Remove lower insulator panel. Remove IPC trim. Remove IPC mounting screws. Remove IPC screws. Partially remove IPC to gain access to electrical connector. Disconnect electrical connector. Remove IPC.
2. To install, reverse removal procedure. Tighten IPC screws to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system.

SENSING & DIAGNOSTIC MODULE (SDM)

Removal & Installation

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **ZONE 8** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove front seats. Remove rear seat cushions. Remove left B-pillar trim panel. Remove center console. See **CENTER CONSOLE** . Loosen center console mounting bracket. Position carpet to allow access to SDM. See **Fig. 17** . Remove Connector Position Assurance (CPA) clip from SDM connector. Disconnect SDM connector. Remove SDM mounting nuts. Remove SDM.
3. To install, reverse removal procedure. Tighten SDM mounting nuts to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. See **ZONE 8** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.

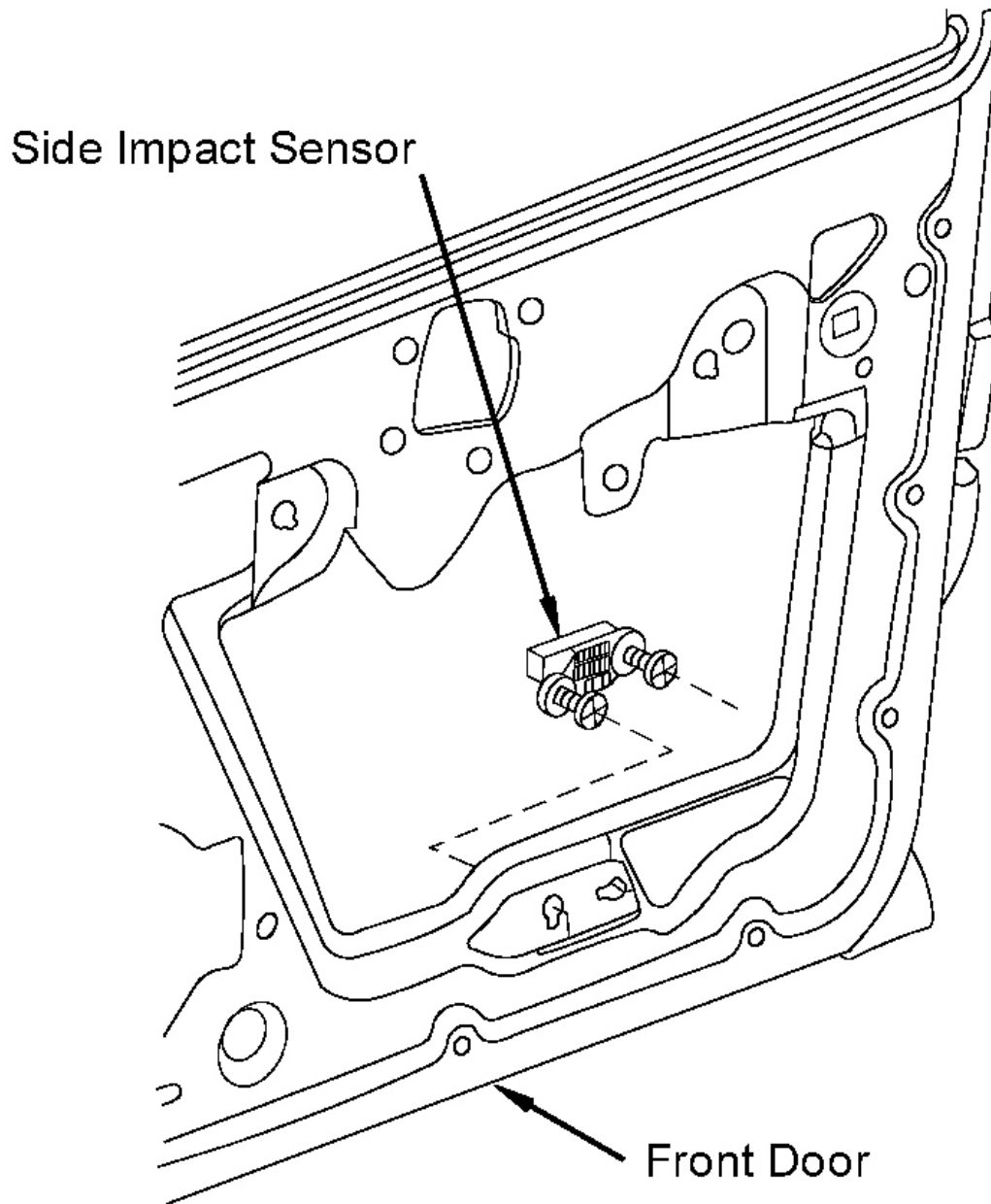


99I26193

Fig. 17: Identifying Sensing & Diagnostic Module (SDM)
 Courtesy of ISUZU MOTOR CO.

SIDE IMPACT SENSOR (SIS)**Removal & Installation**

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. For driver SIS, see **ZONE 2** under DISABLING & ACTIVATING AIR BAG SYSTEM.. For passenger SIS, see **ZONE 6** under DISABLING & ACTIVATING AIR BAG SYSTEM..
2. Remove applicable front door trim panel. Peel rear half of water deflector away from door. Remove screws securing SIS to door. See **Fig. 18** . Remove SIS.
3. To install, reverse removal procedure. Tighten SIS screws to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. For passenger SIS, see **ZONE 6** under DISABLING & ACTIVATING AIR BAG SYSTEM.. For driver SIS, see **ZONE 2** under DISABLING & ACTIVATING AIR BAG SYSTEM..



99J26194

Fig. 18: Identifying Side Impact Sensor (SIS)
Courtesy of ISUZU MOTOR CO.

SIR COIL ASSEMBLY

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NOTE: New SIR coil assemblies are pre-centered and include a centering tab that is removed once coil is installed.

Removal & Installation

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **ZONE 3** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Remove steering wheel. See **STEERING WHEEL** . Remove tilt column lever by pulling straight out from column. Remove upper and lower steering column covers.
3. Remove wire harness straps from SIR coil wire leads. See **Fig. 19** . Disconnect lower SIR coil connector. Remove retaining ring from steering shaft. Remove SIR coil assembly.
4. To install, reverse removal procedure. Ensure SIR coil is centered. See **CENTERING SIR COIL ASSEMBLY** under ADJUSTMENTS. Tighten upper and lower steering column cover screws and steering wheel nut to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. See **ZONE 3** under DISABLING & ACTIVATING AIR BAG SYSTEM.

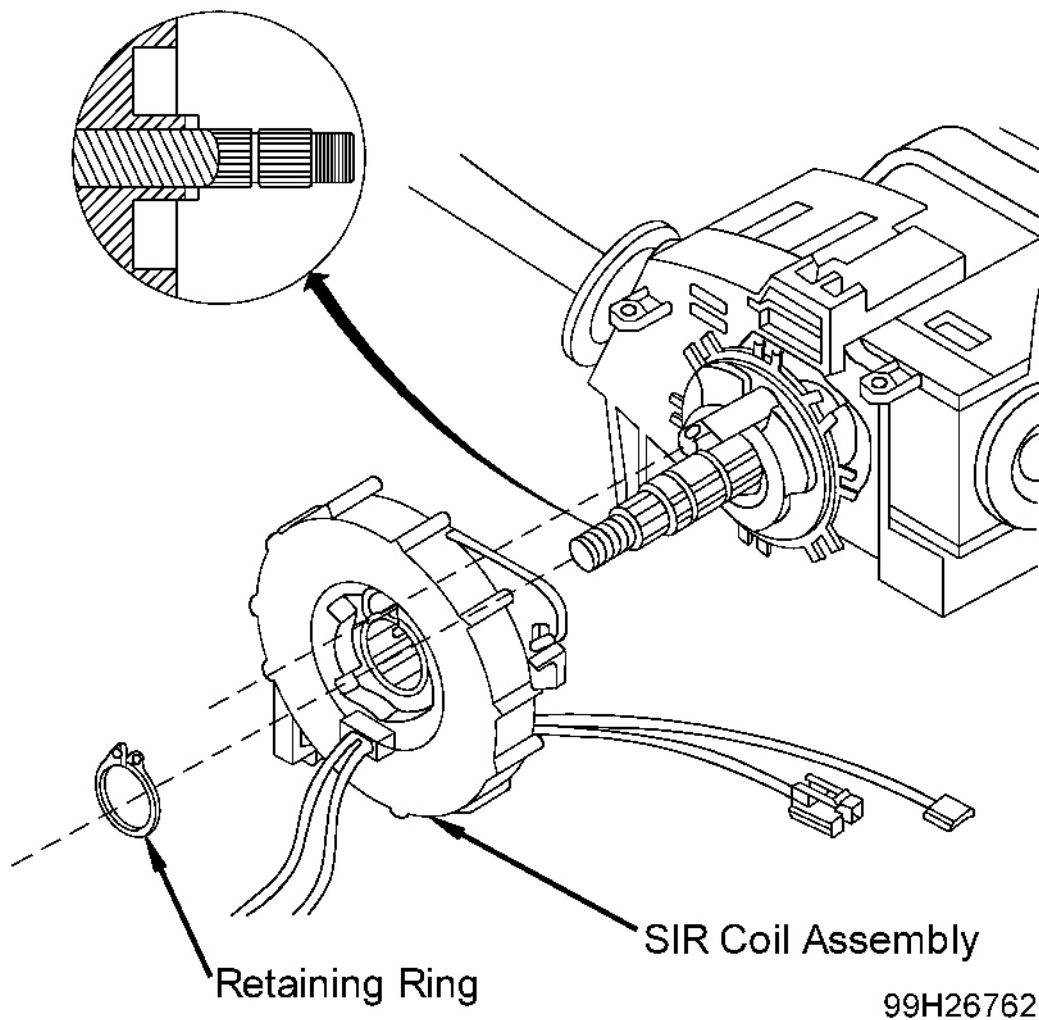


Fig. 19: Identifying SIR Coil Assembly
Courtesy of ISUZU MOTOR CO.

STEERING WHEEL

Removal & Installation

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS** . Disable air bag system. See **ZONE 3** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove driver-side air bag module. See **AIR BAG MODULES** . Remove steering wheel horn contact by pressing inward to stop and rotating 90 degrees. Disconnect steering wheel electrical connectors. Remove steering wheel nut. Using Steering Wheel Puller (J1859-A) and Puller Legs (J36541-A), remove steering wheel.

3. To install, reverse removal procedure. Tighten steering wheel nut to specification. See **TORQUE SPECIFICATIONS** . Activate air bag system. See **ZONE 3** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.

DIAGNOSTICS

WARNING: Accidental air bag deployment is possible. Personal injury may occur. Read and follow service precautions. See **AIR BAG SAFETY PRECAUTIONS** .

DIAGNOSTIC TROUBLE CODES (DTC'S)

Sensing and Diagnostic Module (SDM) provides a record of DTC's stored according to type. SDM performs diagnostic monitoring of SIR system electrical components and sets a DTC when a malfunction is detected. Current DTC's are stored in SDM and are erased when fault is corrected. Current DTC's 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. Connect scan tool to Data Link Connector (DLC), located under left side of instrument panel. Plug in scan tool power leads to power source. Turn ignition on. Follow scan tool manufacturer instructions.

DIAGNOSTIC PROCEDURES

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

Perform SIR Diagnostic System Check

SIR diagnostic system check should always be starting point for any SIR diagnostics. It checks for proper AIR BAG warning light operation and SIR trouble codes using scan tool. See **SIR DIAGNOSTIC SYSTEM CHECK** under **DIAGNOSTICS**.

Refer To Proper Diagnostic Test

SIR diagnostic system check indicates correct test 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.

SIR DIAGNOSTIC SYSTEM CHECK

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Circuit Description

Ignition switch supplies ignition voltage to Sensing and Diagnostic Module (SDM) connector terminal A1 via SIR fuse, located in underhood fuse block, above left wheel well. When ignition is turned on, SDM responds by performing tests on SIR system while Instrument Panel Cluster (IPC) flashes AIR BAG warning light 7 times. If system is okay, AIR BAG warning light will turn off.

Diagnostic Procedure

1. Observe AIR BAG warning light when turning ignition on. If AIR bag warning light flashes 7 times and goes off, go to next step. If AIR BAG warning light does not flash 7 times and go off, inspect vehicle for damage to wiring system, visible body damage, faulty or intermittent electrical connections or addition of aftermarket devices which could affect SIR operation. Diagnose AIR BAG warning light malfunction. See **AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION** .
2. Install scan tool to Data Link Connector (DLC), located under left side of instrument panel. If scan tool powers up, go to next step. If scan tool does not power up, inspect and repair data link communication circuits.
3. If scan tool communicates with SDM, go to next step. If scan tool does not communicate with SDM, inspect and repair data link communication circuits.
4. Using scan tool, request SIR DTC display. If scan tool displays history or current SIR DTC's, go to next step. If scan tool does not display any SIR DTC's, system is okay.
5. If scan tool displays any DTC's that begin with "U", inspect and repair applicable data link communication circuits and components. If no DTC's are displayed that begin with "U", go to next step.
6. If scan tool displays DTC B1000, go to **DTC B1000** . If scan tool displays other DTC's, diagnose and repair applicable SIR DTC's. See **DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION** table.

DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION

Trouble Code	Possible Cause
<u>B0012</u>	Passenger Stage 2 deployment loop resistance low
<u>B0013</u>	Passenger Stage 2 deployment loop resistance high
<u>B0014</u>	Passenger Stage 2 deployment loop short to ground or voltage
<u>B0016</u>	Passenger Stage 1 deployment loop resistance low
<u>B0017</u>	Passenger Stage 1 deployment loop resistance high
<u>B0018</u>	Passenger Stage 1 deployment loop short to ground or voltage
<u>B0022</u>	Driver Stage 1 deployment loop resistance low
<u>B0024</u>	Driver Stage 2 deployment loop short to ground or voltage
<u>B0026</u>	Driver Stage 2 deployment loop resistance high
<u>B0028</u>	Passenger side impact deployment loop resistance low
<u>B0029</u>	Passenger side impact deployment loop resistance high
<u>B0030</u>	Passenger side impact deployment loop short to ground or voltage
<u>B0040</u>	Driver side impact deployment loop resistance low
<u>B0041</u>	Driver side impact deployment resistance high

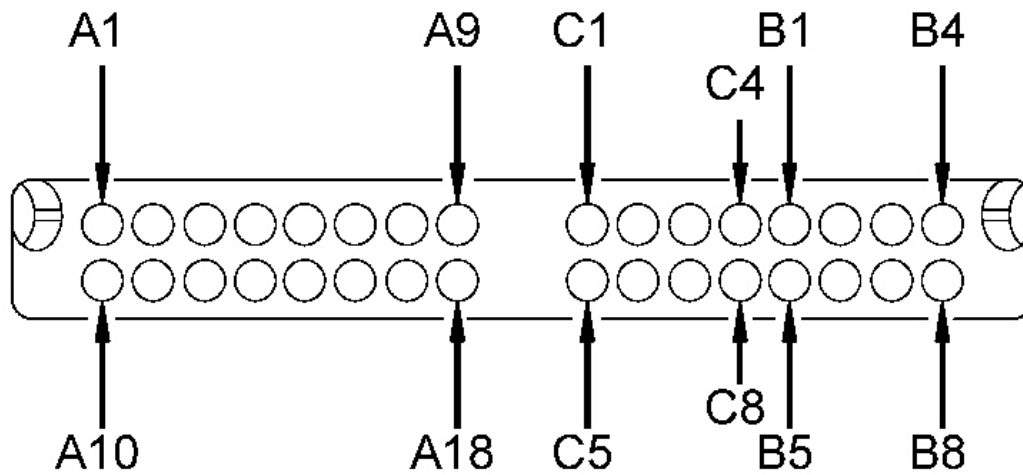
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<u>B0042</u>	Driver Stage 2 deployment loop resistance low
<u>B0043</u>	Driver Stage 2 deployment loop short to ground or voltage
<u>B0044</u>	Driver Stage 2 deployment loop resistance high
<u>B0045</u>	Driver side impact deployment loop short to ground or voltage
<u>B0051</u>	Deployment commanded
<u>B0053</u>	Deployment commanded with loop malfunction
<u>B0077</u>	Driver SIS valid identification message not received
<u>B0078</u>	Passenger SIS valid identification message not received
<u>B0079</u>	Driver SIS identification not correct
<u>B0080</u>	Driver SIS NOK message
<u>B0081</u>	Passenger SIS identification not correct
<u>B0082</u>	Passenger SIS NOK message
<u>B0100</u>	Driver-side EFS valid identification not received
<u>B0101</u>	Driver-side EFS NOK message
<u>B0102</u>	Driver-side EFS incorrect identification message
<u>B0103</u>	Passenger-side EFS valid identification not received
<u>B0104</u>	Passenger-side EFS NOK message
<u>B0105</u>	Passenger-side EFS incorrect identification message
<u>B1000</u>	SDM malfunction
<u>B1001</u>	Option configuration error

CONNECTOR IDENTIFICATION

NOTE: Refer to illustrations to identify SIR electrical connector terminals. See **Fig. 20** , **Fig. 21** , **Fig. 22** & **Fig. 23** .



99H23975

Fig. 20: Identifying SDM Connector Terminals
Courtesy of ISUZU MOTOR CO.

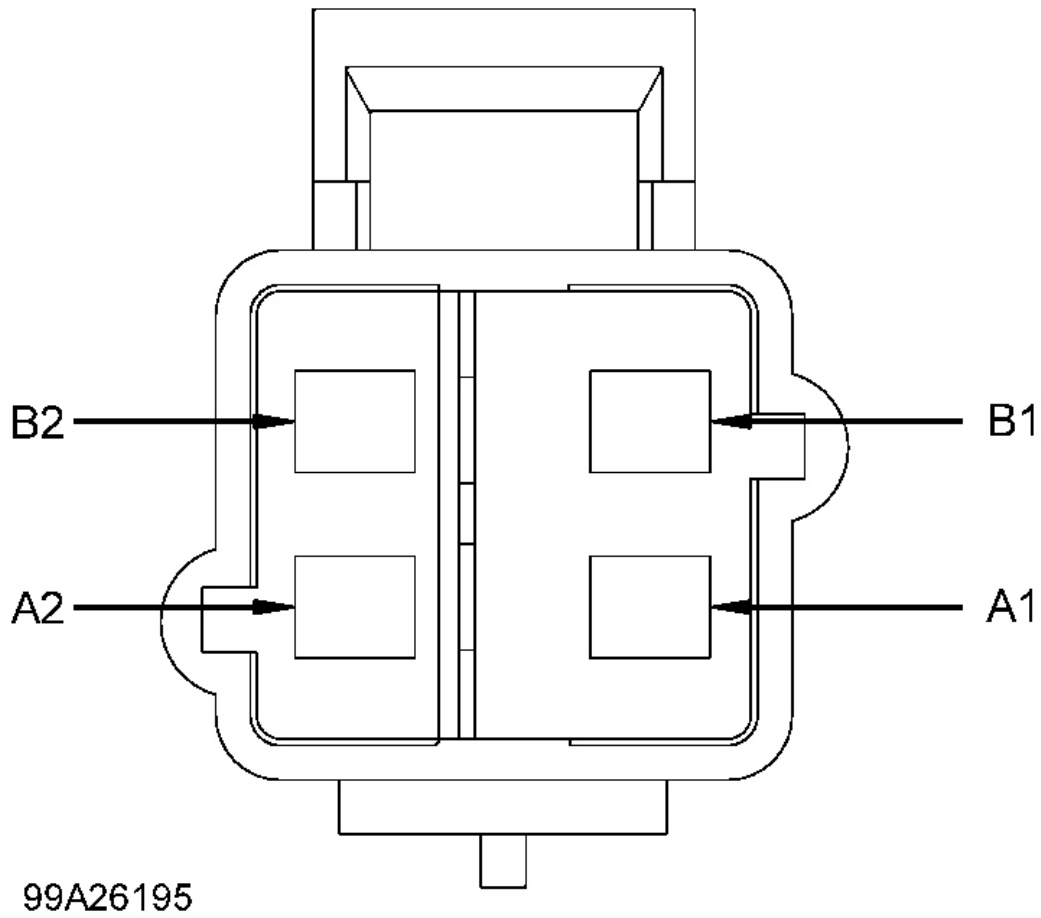
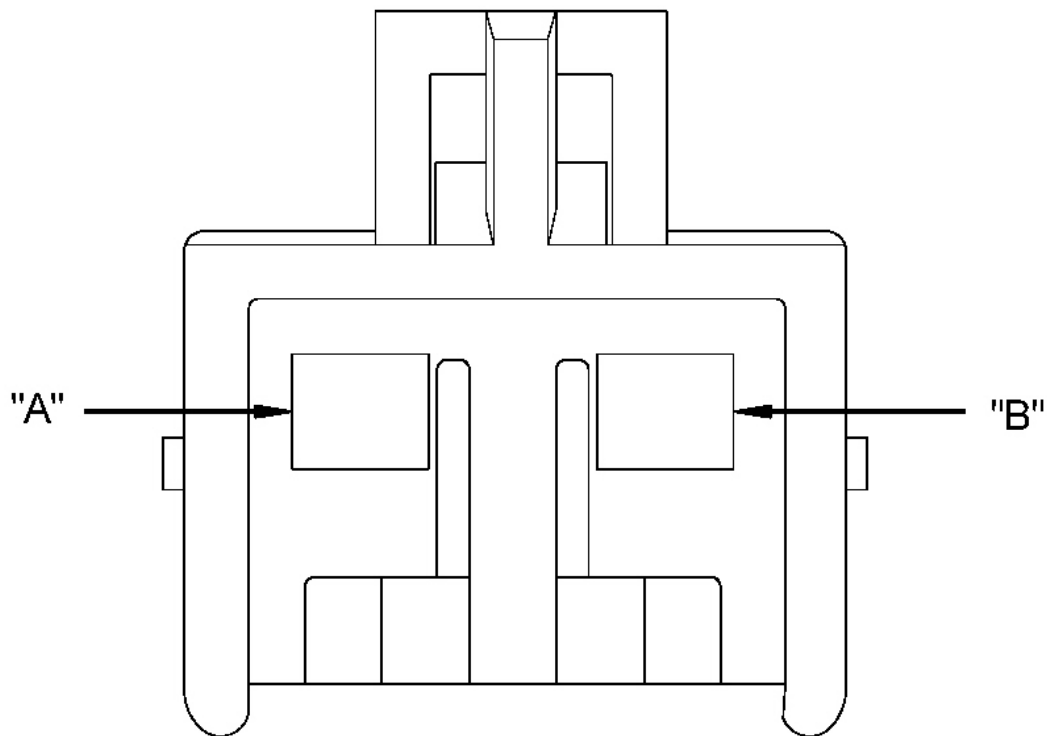


Fig. 21: Identifying Driver-side & Passenger-side Air Bag Module Connector Terminals
Courtesy of ISUZU MOTOR CO.

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Fig. 22: Identifying Side Impact Air Bag Module Connector Terminals
Courtesy of ISUZU MOTOR CO.

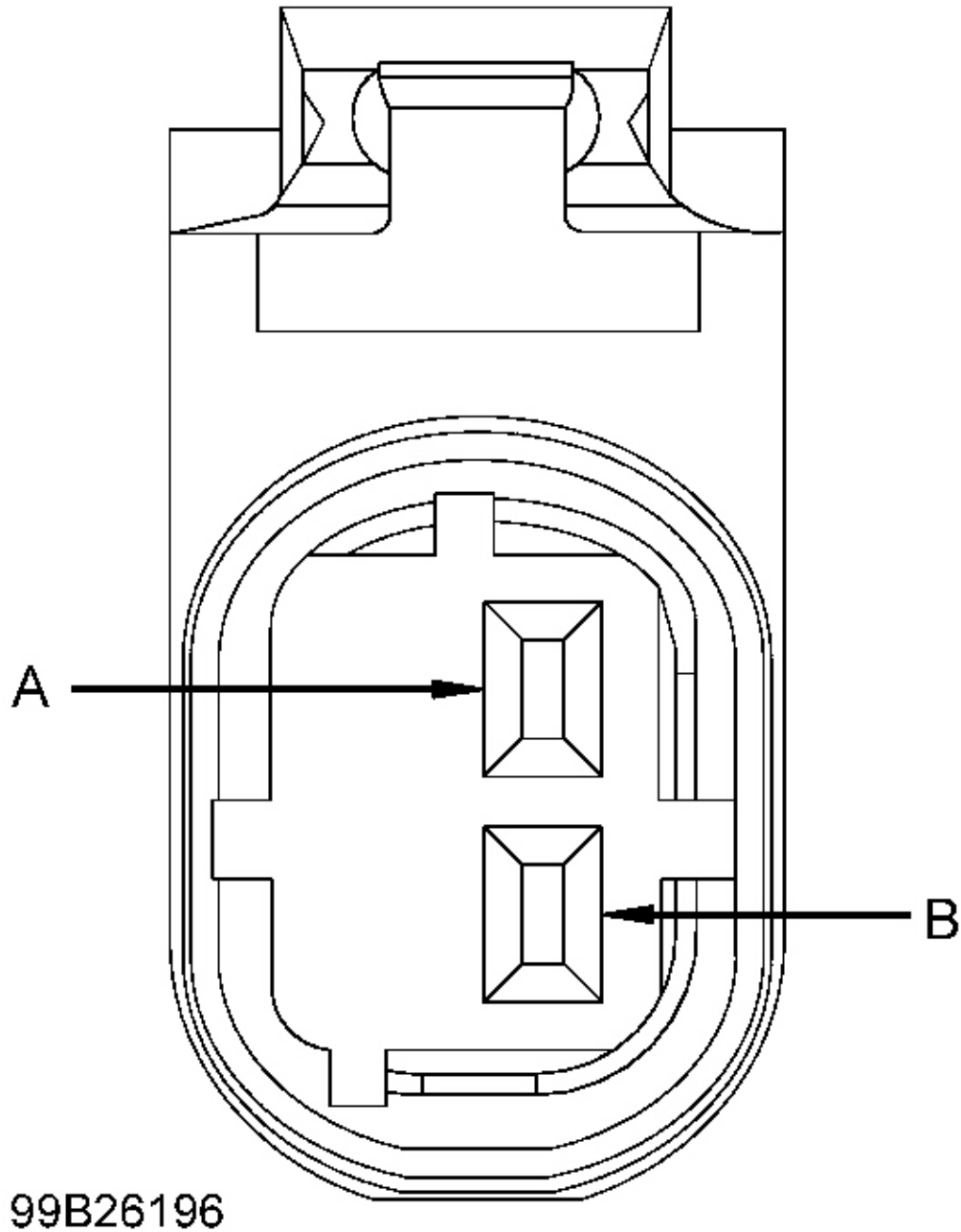


Fig. 23: Identifying Electronic Frontal Sensor (EFS) & Side Impact Sensor (SIS) Connector Terminals
Courtesy of ISUZU MOTOR CO.

DIAGNOSTIC TESTS

AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION

Circuit Description

Ignition switch supplies ignition voltage to Sensing and Diagnostic Module (SDM) connector terminal A1 via SIR fuse, located in under hood fuse block, above left wheel well. When ignition is turned on, SDM commands Instrument Panel Cluster (IPC) to flash AIR BAG warning light 7 times, during which time SDM checks SIR system for malfunctions. If no malfunctions are present, SDM will command IPC to turn AIR BAG warning light off.

Diagnostic Aids

If battery voltage is outside normal operating range (9-16 volts), AIR BAG warning light will turn on with no DTC's set.

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. If Instrument Panel Cluster (IPC) is functioning properly, go to next step. If IPC is not functioning properly, go to step 17.
3. Turn ignition off. Observe AIR BAG warning light while turning ignition on. If AIR BAG warning light flashes 7 times, go to next step. If AIR BAG warning light does not flash 7 times, go to step 17.
4. Connect scan tool to Data Link Connector (DLC), located under left side of instrument panel. Using scan tool, request IPC DTC display. If DTC U1088 is displayed, inspect data link communications circuits. If DTC U1088 is not displayed, go to next step.
5. Using scan tool, command AIR BAG warning light on. If AIR BAG warning light comes on, go to next step. If AIR BAG warning light does not come on, go to step 17.
6. Using scan tool, request SIR DATA LIST display. If ignition voltage is more than 9 volts, go to next step. If ignition voltage is 9 volts or less, go to step 8.
7. If ignition voltage is more than 16 volts, check battery and charging system. Go to step 18. If ignition voltage is 16 volts or less, go to step 16.
8. Turn ignition off. Disconnect SDM connector. Inspect connector for signs of damage or corrosion. If connector is damaged, go to next step. If connector is okay, go to step 10.
9. Replace SDM connector. See **WIRE REPAIR**. Go to step 18.

NOTE: Use Digital Multimeter (J39200) and Connector Test Adapter Kit (J35616-A) or Flat Wire Probe Adapter Kit (J42675) when performing electrical tests.

10. Disable SIR system. See **ZONE 8** under DISABLING & ACTIVATING AIR BAG SYSTEM. Disconnect SDM connector. See **Fig. 17**. Measure resistance of Yellow wire between SDM connector terminal A1 and SIR fuse block C2 terminal F5. If resistance is more than 2 ohms, go to next step. If resistance is 2 ohms or less, go to step 12.

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11. Repair high resistance in circuit 1139. See **WIRE REPAIR** . Go to step 18 .
12. Turn ignition on. Measure voltage between battery side of SIR fuse and ground. If voltage is not near 12 volts, go to next step. If voltage is near 12 volts, go to step 14 .
13. Repair open or high resistance in voltage feed circuit to SIR fuse. See **WIRE REPAIR** . Go to step 18 .
14. Measure resistance of circuit 1751 between SDM connector terminal A18 and ground. If resistance is more than 2 ohms, go to next step. If resistance is 2 ohms or less, go to step [16](#) .
15. Repair open or high resistance in circuit 1751. See **WIRE REPAIR** . Go to step 18 .
16. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Reconnect all SIR components. Ensure all components are properly mounted. Clear all SIR DTC's. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .
17. Replace IPC. See **INSTRUMENT PANEL CLUSTER (IPC)** under REMOVAL & INSTALLATION. Go to next step.
18. Reconnect all SIR components. Ensure all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0012 ,B0013 ,B0014 , B0016 ,B0017 ,B0018 : PASSENGER-SIDE AIR BAG DEPLOYMENT LOOP STAGE 2 RESISTANCE LOW/ STAGE 2 RESISTANCE HIGH/ STAGE 2 SHORT TO GROUND OR VOLTAGE/STAGE 1 RESISTANCE LOW/ STAGE 1 RESISTANCE HIGH/ STAGE 1 SHORT TO GROUND OR VOLTAGE

Circuit Description

When ignition is turned on, Sensing and Diagnostic Module (SDM) performs tests on deployment loops to check for circuit continuity and shorts to ground or voltage.

Conditions For Setting DTC

DTC B0012 will set when Stage 2 deployment loop resistance is less than 1.3 ohms for 500 milliseconds. DTC B0013 will set when Stage 2 deployment loop high-side voltage is less than 2.4 volts and deployment loop resistance is more than 6 ohms for 500 milliseconds or when deployment loop resistance is more than 4.8 ohms for 500 milliseconds. DTC B0014 will set when Stage 2 deployment loop high-side or low-side circuits are shorted to ground or voltage for 500 milliseconds or when high-side circuit voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds.

DTC B0016 will set when Stage 1 deployment loop resistance is less than 1.3 ohms for 500 milliseconds. DTC B0017 will set when Stage 1 deployment loop high-side voltage is less than 2.4 volts and deployment loop resistance is more than 6 ohms for 500 milliseconds or when deployment loop resistance is more than 4.8 ohms for 500 milliseconds. DTC B0018 will set when Stage 1 deployment loop high-side or low-side circuits are shorted to ground or voltage for 500 milliseconds or when high-side circuit voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

Current DTC clears when condition responsible for setting DTC no longer exists and scan tool CLEAR DTC command has been used to clear DTC's. History DTC clears when 255 malfunction-free ignition cycles have occurred.

Diagnostic Aids

Malfunction is likely to be caused by a short between passenger-side air bag module high-side and low-side circuits or by an open or high resistance condition or by a short to ground or voltage in any circuit. A malfunctioning electrical connector or SDM could also cause condition.

NOTE: For circuit 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 module connector, located under passenger-side instrument panel. See **Fig. 7** . If harness-side of connector is damaged, go to next step. If passenger-side air bag module side of connector is damaged, go to step 7 . If both sides of connector are okay, go to step 4 .
3. Replace harness-side of connector. See **WIRE REPAIR** . Go to step 9 .
4. Install SIR Driver/Passenger Load Tool (J38715-A) using Load Tool Adapter (J38715-80) to harness-side of passenger-side air bag module connector. Use BASE OF COLUMN and PASSENGER INFLATOR connectors. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0012, B0013, B0014, B0016, B0017 or B0018 is retrieved as a current DTC, go to next step. If DTC B0012, B0013, B0014, B0016, B0017 or B0018 is not retrieved as a current DTC, go to step 7 .
5. Turn ignition off. Remove SIR driver/passenger load tool and adapter from harness connector. Disconnect SDM connector. See **Fig. 17** . If SDM connector is okay, go to next step. If SDM connector shows signs of corrosion or damage, replace SDM connector. See **WIRE REPAIR** . Go to step 9 .

NOTE: Use Digital Multimeter (J39200) and Connector Test Adapter Kit (J35616-A) or Flat Wire Probe Adapter Kit (J42675) when performing electrical tests.

6. When diagnosing air bag system:
 - If DTC B0012 or B0016 is retrieved by scan tool, check for a short between passenger-side air bag module stage 1 and stage 2 high-side and low-side circuits. If condition is found and corrected, go to step 9 . If condition is not found, go to step 8 .
 - If DTC B0013 or B0017 is retrieved, check for an open or high resistance in passenger-side air bag module stage 1 and stage 2 high-side and low-side circuits. If condition is found and corrected, go to step 9 . If condition is not found, go to step 8 .
 - If DTC B0014 or B0018 is retrieved, check for a short to ground or voltage passenger-side air bag module stage 1 and stage 2 high-side and low-side circuits. If condition is found and corrected, go to step 9 . If condition is not found, go to step 8 .

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7. Replace passenger-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 9 .
8. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
9. Reconnect all SIR components. Ensure all components are properly mounted. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If current DTC is retrieved by scan tool, go to step 2 . If current DTC is not retrieved by scan tool, system is okay.

DTC B0022 , B0024 , B0026 , B0042 ,B0043 , B0044 : DRIVER DEPLOYMENT LOOP STAGE 1 RESISTANCE LOW/STAGE1 SHORT TO GROUND OR VOLTAGE/STAGE 1 RESISTANCE HIGH/STAGE 2 RESISTANCE LOW/STAGE 2 SHORT TO GROUND OR VOLTAGE/STAGE 2 RESISTANCE HIGH

Circuit Description

When ignition is turned on, Sensing and Diagnostic Module (SDM) performs tests on deployment loops to check for circuit continuity and shorts to ground or voltage.

Conditions For Setting DTC

DTC B0022 will set when Stage 1 deployment loop resistance is less than 1.3 ohms for 500 milliseconds. DTC B0024 will set when Stage 1 deployment loop high-side or low-side circuits are shorted to ground or voltage for 500 milliseconds or when high-side voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds. DTC B0026 will set when Stage 1 deployment loop high-side voltage is less than 2.4 volts and deployment loop resistance is more than 6 ohms for 500 milliseconds or when deployment loop resistance is more than 4.8 ohms for 500 milliseconds.

DTC B0042 will set when Stage 2 deployment loop resistance is less than 1.3 ohms for 500 milliseconds. DTC B0043 will set when Stage 2 deployment loop high-side or low-side circuits are shorted to ground or voltage for 500 milliseconds or when high-side voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds. DTC B0044 will set when Stage 2 deployment loop high-side voltage is less than 2.4 volts and deployment loop resistance is more than 6 ohms for 500 milliseconds or when deployment loop resistance is more than 4.8 ohms for 500 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

Current DTC clears when condition responsible for setting DTC no longer exists and scan tool CLEAR DTC command has been used to clear DTC's. History DTC clears when 255 malfunction-free ignition cycles have occurred.

Diagnostic Aids

Malfunction is likely to be caused by a short between driver-side air bag module stage 1 and stage 2 high-side

and low-side circuits or by an open or high resistance condition or by a short to ground or voltage in any circuit. A malfunctioning electrical connector or SDM could also cause condition.

NOTE: For circuit 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 module connector, located at base of steering column. See Fig. 6 . If harness-side of connector is damaged, go to next step. If SIR coil side of connector is damaged, go to step 9 . If both sides of connector are okay, go to step 4 .
3. Replace harness-side of connector. See WIRE REPAIR . Go to step 11 .
4. Install SIR Driver/Passenger Load Tool (J38715-A) to harness-side of connector using Load Tool Adapter (J38715-80). Use BASE OF COLUMN and PASSENGER INFLATOR connectors. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0022, B0024, B0026, B0042, B0043 or B0044 is retrieved as a current DTC, go to step 6 . If DTC B0022, B0024, B0026, B0042, B0043 or B0044 is not retrieved as a current DTC, go to next step.
5. Remove SIR driver/passenger load tool from harness-side of connector. Reconnect driver-side air bag module connector. Remove driver-side air bag module. See AIR BAG MODULES under REMOVAL & INSTALLATION. Install SIR driver/passenger load tool using Load Tool Adapter (J38715-120) to upper SIR coil connector. Use STEERING COLUMN and PASSENGER INFLATOR connectors. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0022, B0024, B0026, B0042, B0043 or B0044 is retrieved as a current DTC, go to step 9 . If DTC B0022, B0024, B0026, B0042, B0043 or B0044 is not retrieved as a current DTC, go to step 8 .
6. Turn ignition off. Remove SIR driver/passenger load tool from harness connector. Disconnect SDM connector. See Fig. 17 . If SDM connector is okay, go to next step. If SDM connector shows signs of corrosion or damage, replace SDM connector. See WIRE REPAIR . Go to step 11 .

NOTE: Use Digital Multimeter (J39200) and Connector Test Adapter Kit (J35616-A) or Flat Wire Probe Adapter Kit (J42675) when performing electrical tests.

7. When diagnosing air bag system:
 - If DTC B0022 or B0042 is retrieved by scan tool, check for a short between driver-side air bag module stage 1 and stage 2 high-side and low-side circuits. If condition is found and corrected, go to step 11 . If condition is not found, go to step 10 .
 - If DTC B0024 or B0043 is retrieved, check for a short to ground or voltage in driver-side air bag module stage 1 and stage 2 high-side and low-side circuits. If condition is found and corrected, go to step 11 . If condition is not found, go to step 10 .
 - If DTC B0026 or B0044 is retrieved, check for an open or high resistance in driver-side air bag module stage 1 and stage 2 high-side and low-side circuits. If condition is found and corrected, go to step 11 . If condition is not found, go to step 10 .
8. Replace driver-side air bag module. See AIR BAG MODULES under REMOVAL & INSTALLATION. Go to step 11 .

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9. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 11 .
10. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
11. Reconnect all SIR components. Ensure all components are properly mounted. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If current DTC is retrieved by scan tool, go to step 2 . If current DTC is not retrieved by scan tool, system is okay.

DTC B0028 , B0029 , B0030 : PASSENGER SIDE IMPACT AIR BAG DEPLOYMENT LOOP RESISTANCE LOW/RESISTANCE HIGH/SHORT TO GROUND OR VOLTAGE

Circuit Description

When ignition is turned on, Sensing and Diagnostic Module (SDM) performs tests on deployment loops to check for circuit continuity and shorts to ground or voltage.

Conditions For Setting DTC

DTC B0028 will set when deployment loop resistance is less than 1.3 ohms for 500 milliseconds. DTC B0029 will set when deployment loop high-side voltage is less than 2.4 volts and deployment loop resistance is more than 6 ohms for 500 milliseconds or when deployment loop resistance is more than 4.8 ohms for 500 milliseconds. DTC B0030 will set when deployment loop high-side or low-side circuits are shorted to ground or voltage for 500 milliseconds or when high-side circuit voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

Current DTC clears when condition responsible for setting DTC no longer exists and scan tool CLEAR DTC command has been used to clear DTC's. History DTC clears when 255 malfunction-free ignition cycles have occurred.

Diagnostic Aids

Malfunction is likely to be caused by a short between passenger side impact air bag module high-side and low-side circuits or by an open or high resistance condition or by a short to ground or voltage in either circuit. A malfunctioning electrical connector or SDM could also cause condition.

NOTE: For circuit 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** .

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2. Turn ignition off. Disconnect passenger side impact air bag module connector, located under passenger-side front seat. See **Fig. 8** . If harness-side of connector is damaged, go to next step. If passenger side impact air bag module side of connector is damaged, go to step 4 . If both sides of connector are okay, go to step 5 .
3. Replace harness-side connector. See **WIRE REPAIR** . Go to step 12 .
4. Replace side impact air bag module wiring harness between under seat connector and passenger side impact air bag module. Go to step 12 .
5. Install SIR Driver/Passenger Load Tool (J38715-A) to harness-side of passenger side impact air bag module wire harness, located under front seat. Use PASSENGER INFLATOR connector. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0028, B0029 or B0030 is retrieved as a current DTC, go to step 7 . If DTC B0028, B0029 or B0030 is not retrieved as a current DTC, go to next step.
6. Turn ignition off. Remove SIR driver/passenger load tool from harness connector. Connect passenger side impact air bag module under seat connector. Disconnect passenger side impact air bag module connector, located in seat back. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Install load tool using Load Tool Adapter (J38715-30A) to harness side of connector. Use PASSENGER INFLATOR connector. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0028, B0029 or B0030 is retrieved as a current DTC, go to step 9 . If DTC B0028, B0029 or B0030 is not retrieved as a current DTC, go to step 10 .
7. Turn ignition off. Remove load tool from connector. Disconnect SDM connector. See **Fig. 17** . If SDM connector shows signs of corrosion or damage, replace SDM connector. See **WIRE REPAIR** . Go to step 12 . If SDM connector is okay, go to next step.

NOTE: **Use Digital Multimeter (J39200) and Connector Test Adapter Kit (J35616-A) or Flat Wire Probe Adapter Kit (J42675) when performing electrical tests.**

8. When diagnosing air bag system:
 - If DTC B0028 is retrieved by scan tool, check for a short between passenger side impact high-side and low-side circuits. If condition is found and corrected, go to step 12 . If condition is not found, go to step 11 .
 - If DTC B0029 is retrieved, check for an open or high resistance in passenger side impact high-side and low-side circuits. If condition is found and corrected, go to step 12 . If condition is not found, go to step 11 .
 - If DTC B0030 is retrieved, check for a short to ground or voltage in passenger side impact high-side and low-side circuits. If condition is found and corrected, go to step 12 . If condition is not found, go to step 11 .
9. Replace wire harness between under seat connector and passenger side impact air bag module connector. Go to step 12 .
10. Replace side impact air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. 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 all components are properly mounted. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If current DTC is retrieved by scan tool, go to step 2 . If current DTC is not retrieved by scan tool, system is okay.

DTC B0040 , B0041 , B0045 : DRIVER SIDE IMPACT AIR BAG DEPLOYMENT LOOP RESISTANCE LOW/RESISTANCE HIGH/SHORT TO GROUND OR VOLTAGE**Circuit Description**

When ignition is turned on, Sensing and Diagnostic Module (SDM) performs tests on deployment loops to check for circuit continuity and shorts to ground or voltage.

Conditions For Setting DTC

DTC B0040 will set when deployment loop resistance is less than 1.3 ohms for 500 milliseconds. DTC B0041 will set when deployment loop high-side voltage is less than 2.4 volts and deployment loop resistance is more than 6 ohms for 500 milliseconds or when deployment loop resistance is more than 4.8 ohms for 500 milliseconds. DTC B0045 will set when deployment loop high-side or low-side circuits are shorted to ground or voltage for 500 milliseconds or when high-side circuit voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

Current DTC clears when condition responsible for setting DTC no longer exists and scan tool CLEAR DTC command has been used to clear DTC's. History DTC clears when 255 malfunction-free ignition cycles have occurred.

Diagnostic Aids

Malfunction is likely to be caused by a short between driver side impact air bag module high-side and low-side circuits or by an open or high resistance condition or by a short to ground or voltage in either circuit. A malfunctioning electrical connector or SDM could also cause condition.

NOTE: For circuit 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 impact air bag module connector, located under driver-side front seat. See **Fig. 8** . If harness-side of connector is damaged, go to next step. If driver side impact air bag module side of connector is damaged, go to step 4 . If both sides of connector are okay, go to step 5 .
3. Replace harness-side of connector. See **WIRE REPAIR** . Go to step 12 .
4. Replace side impact air bag module wiring harness between under seat connector and driver side impact air bag module. Go to step 12 .
5. Install SIR Driver/Passenger Load Tool (J38715-A) to harness-side of driver side impact air bag module

wire harness, located under front seat. Use PASSENGER INFLATOR connector. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0040, B0041 or B0045 is retrieved as a current DTC, go to step 7 . If DTC B0040, B0041 or B0045 is not retrieved as a current DTC, go to next step.

6. Turn ignition off. Remove SIR driver/passenger load tool from harness connector. Connect driver side impact air bag module under seat connector. Disconnect driver side impact air bag module connector, located in seat back. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Install load tool using Load Tool Adapter (J38715-30A) to harness side of connector. Use PASSENGER INFLATOR connector. Turn ignition on. Using scan tool, check for SIR DTC's. If DTC B0040, B0041 or B0045 is retrieved as a current DTC, go to step 9 . If DTC B0040, B0041 or B0045 is not retrieved as a current DTC, go to step 10 .
7. Turn ignition off. Remove load tool from connector. Disconnect SDM connector. See **Fig. 16** . If SDM connector shows signs of corrosion or damage, replace SDM connector. See **WIRE REPAIR** . Go to step 12 . If SDM connector is okay, go to next step.

NOTE: **Use Digital Multimeter (J39200) and Connector Test Adapter Kit (J35616-A) or Flat Wire Probe Adapter Kit (J42675) when performing electrical tests.**

8. When diagnosing air bag system:
 - If DTC B0040 is retrieved by scan tool, check for a short between driver side impact air bag module high-side and low-side circuits. If condition is found and corrected, go to step 12 . If condition is not found, go to step 11 .
 - If DTC B0041 is retrieved, check for an open or high resistance in driver side impact air bag module high-side and low-side circuits. If condition is found and corrected, go to step 12 . If condition is not found, go to step 11 .
 - If DTC B0045 is retrieved, check for a short to ground or voltage in driver side impact air bag module high-side and low-side circuits. If condition is found and corrected, go to step 12 . If condition is not found, go to step 11 .
9. Replace wire harness between under seat connector and driver side impact air bag module connector. Go to step 12 .
10. Replace side impact air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. 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 all components are properly mounted. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If current DTC is retrieved by scan tool, go to step 2 . If current DTC is not retrieved by scan tool, system is okay.

DTC B0051 : DEPLOYMENT COMMANDED

Circuit Description

Sensing and Diagnostic Module (SDM) contains a sensing device which converts vehicle velocity changes into an electrical signal. 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

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air bags and causing DTC B0051 to set.

Conditions For Setting DTC

DTC sets when ignition voltage is present and SDM has commanded 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 only after completion of diagnostic procedure and applicable repairs.

NOTE: For circuit 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 or collision. If impact or collision has occurred, go to step 5 . If no impact or collision has occurred, go to next step.
4. Replace SDM. See SENSING & DIAGNOSTIC MODULE (SDM) under REMOVAL & INSTALLATION. Go to step 6 .
5. Using scan tool, request SIR DTC display. If history DTC's are retrieved, go to diagnostic aids for specific displayed DTC. If history DTC's are not displayed, replace components and perform inspections as required following an accident. See POST-COLLISION INSPECTION . Go to next step.
6. Reconnect all SIR components. Using scan tool, clear DTC's. Road test vehicle, then check for DTC's. If DTC is retrieved, go to step 2 . If DTC is not retrieved, system is okay. Go to SIR DIAGNOSTIC SYSTEM CHECK .

DTC B0053 : DEPLOYMENT COMMANDED WITH LOOP MALFUNCTION

Circuit Description

Sensing and Diagnostic Module (SDM) contains a sensing device which converts vehicle velocity changes into an electrical signal. 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. DTC B0053 will set instead of DTC B0051 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

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DTC will set when SDM detects a frontal or side collision of sufficient force to warrant deployment of air bags and deployment loop malfunction exists.

Action Taken

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

Conditions For Clearing DTC

DTC B0053 is a latched code which cannot be cleared. Replace SDM only after completion of diagnostic procedure and applicable repairs.

Diagnostic Aids

DTC B0053 will be accompanied by one or more other DTC's. Replace SDM only after completion of diagnostic procedure and applicable repairs.

NOTE: For circuit 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 or collision. If impact or collision has occurred, go to step 5 . If no impact or collision has occurred, go to next step.
4. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to step 6 .
5. Using scan tool, request SIR DTC display. If history DTC's are retrieved, go to diagnostic aids for specific displayed DTC. If history DTC's are not displayed, replace components and perform inspections as required following an accident. See **POST-COLLISION INSPECTION** . Go to next step.
6. Reconnect all SIR components. Using scan tool, clear DTC's. Road test vehicle, then check for DTC's. If DTC is retrieved, go to step 2 . If DTC is not retrieved, system is okay. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

DTC B0077 ,B0078 ,B0079 , B0080 ,B0081 ,B0082 : DRIVER-SIDE SIS VALID IDENTIFICATION MESSAGE NOT RECEIVED/PASSENGER-SIDE SIS VALID IDENTIFICATION MESSAGE NOT RECEIVED/DRIVER-SIDE SIS IDENTIFICATION ERROR/DRIVER-SIDE SIS NOK MESSAGE/PASSENGER-SIDE SIS IDENTIFICATION ERROR/PASSENGER-SIDE SIS NOK MESSAGE

Circuit Description

Side Impact Sensors (SIS) use a unidirectional 2-wire circuit. SIS modulates current on the interface to send identification, State Of Health (SOH) and deployment commands to Sensing and Diagnostic Module (SDM). SDM provides power and ground to Side Impact Sensor (SIS). When ignition is turned on and power from

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SDM is detected by SIS, SIS performs internal diagnostics, then sends an identification message to SDM. SDM receives identification message within 5 seconds of power being turned on and determines if message is valid. SIS continually communicates a status message to SDM. When a fault is detected, SDM resets SIS twice by removing and reapplying power to SIS. If fault is still present, SDM will set DTC.

Conditions For Setting DTC

DTC B0077 will set when SDM does not receive a valid identification message within 5 seconds of driver-side SIS being powered up, status message is not received or SDM has reset SIS twice without detecting valid identification message. DTC B0078 will set when SDM does not receive a valid identification message within 5 seconds of passenger-side SIS being powered up, status message is not received or SDM has reset SIS twice without detecting a valid identification message.

DTC B0079 will set when SDM receives an identification message from driver-side SIS that does not match identification stored in memory or after SDM has tried twice to reset SIS without detecting correct identification message. DTC B0081 will set when SDM receives an identification message from passenger-side SIS that does not match identification stored in memory or after SDM has tried twice to reset SIS without detecting correct identification message.

DTC B0080 will set when SDM has received a Not Okay (NOK) message from driver-side SIS. DTC B0082 will set when SDM has received a Not Okay (NOK) message from passenger-side SIS.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC will clear when condition responsible for setting DTC no longer exists and CLEAR DTC command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

Condition could be caused by a short to ground or voltage, high or low resistance in driver-side or passenger-side SIS circuits.

NOTE: For circuit 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. Using scan tool, request SIR DTC display. If DTC B0079, B0080, B0081 or B0082 is retrieved as a current DTC, go to step 12 . If DTC B0079, B0080, B0081 or B0082 is not retrieved as a current DTC, go to next step.
3. Turn ignition off. If DTC B0077 is current, disconnect driver-side SIS connector. See SIDE IMPACT SENSOR (SIS) under REMOVAL & INSTALLATION. If DTC B0078 is current, disconnect passenger-

side SIS connector. If connector is damaged or corroded, go to next step. If connector is okay, go to step 5 .

4. If SIS side of connector is damaged, replace SIS. Go to step 13 . If harness side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 13 .
5. Disconnect SDM connector. See **Fig. 17** . If SDM connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 13 . If SDM terminals are damaged, go to step 11 . If SDM connector and terminals are okay, go to next step.

NOTE: **Use Digital Multimeter (J39200) and Connector Test Adapter Kit (J35616-A) or Flat Wire Probe Adapter Kit (J42675) when performing electrical tests.**

6. If DTC B0077 is current, disconnect driver-side SIS connector. If DTC B0078 is current, disconnect passenger-side SIS connector. Test signal circuit of applicable SIS circuit for a short to ground, an open or high resistance. If a short to ground, an open or high resistance is found and corrected, go to step 13 . If a short to ground, an open or high resistance is not found, go to next step.
7. Inspect applicable SIS voltage circuit for a short to ground, a high resistance or an open circuit. If a short to ground, a high resistance or an open circuit. is found and corrected, go to step 13 . If short to voltage is not found, go to next step.
8. Turn ignition on. Check applicable SIS signal and voltage circuits for a short to voltage. If short to voltage is found and corrected, go to step 13 . If short to voltage is not found, go to next step.
9. If DTC B0077 was retrieved by scan tool, replace driver-side SIS. Go to next step. If DTC B0078 was retrieved by scan tool, replace passenger-side SIS. Go to next step.
10. Reconnect all SIR components. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If DTC's are retrieved, go to next step. If DTC's are not retrieved, system is normal.
11. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
12. If DTC B0079 or B0080 is displayed by scan tool, replace driver-side SIS. Go to next step. If DTC B0081 or B0082 is displayed by scan tool, replace passenger-side SIS. Go to next step.
13. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If DTC is retrieved, go to step 2 . If DTC is not retrieved, system is normal.

DTC B0100 , B0101 , B0102 ,B0103 ,B0104 , B0105 : DRIVER-SIDE EFS VALID IDENTIFICATION MESSAGE NOT RECEIVED/NOK MESSAGE/INCORRECT IDENTIFICATION MESSAGE, PASSENGER-SIDE EFS VALID IDENTIFICATION MESSAGE NOT RECEIVED/NOK MESSAGE/INCORRECT IDENTIFICATION MESSAGE

Circuit Description

Electronic Frontal Sensor (EFS), uses a unidirectional 2-wire circuit. EFS sensor modulates current on the interface to send identification, State Of Health (SOH) and deployment commands to Sensing and Diagnostic Module (SDM). SDM serves as a power source and ground for EFS. When ignition is turned on and EFS detects power from SDM, EFS responds by performing internal diagnostics and sending identification to SDM. SDM considers identification message to be valid if received within 5 seconds of front end discriminating sensor powering up. EFS continually communicates a status message to SDM. When fault is detected, SDM will attempt to reset EFS twice by removing and applying power. If fault is still present, DTC will set.

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Conditions For Setting DTC

DTC B0100 sets when SDM does not receive a valid identification message from driver-side EFS within 5 seconds of being powered up, when a status message is not received or when SDM has tried twice to reset EFS. DTC B0103 sets when SDM does not receive a valid identification message from passenger-side EFS within 5 seconds of being powered up, when a status message is not received or when SDM has tried twice to reset EFS.

DTC B0101 sets when SDM received 4 consecutive NOK (Not Okay) messages from driver-side EFS. DTC B0104 sets when SDM received 4 consecutive NOK (Not Okay) messages from passenger-side EFS.

DTC B0102 will set when SDM has received an identification message from driver-side EFS which does not match identification message stored in SDM and SDM has tried twice to reset EFS. DTC B0105 will set when SDM has received an identification message from passenger-side EFS which does not match identification message stored in SDM and SDM has tried twice to reset EFS.

Action Taken

SDM turns on AIR BAG warning light and sets DTC.

Conditions For Clearing DTC

DTC will clear when condition responsible for setting DTC no longer exists and CLEAR DTC command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

Condition could be caused by a short to ground or voltage or an open or high resistance in driver-side or passenger-side EFS circuits. An incorrect EFS could also cause condition.

NOTE: For circuit 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. Using scan tool, request SIR DTC display. If DTC B0101, B0102 B0104 or B0105 is current, go to step 12 . If DTC B0101, B0102, B0104 or B0105 is not current, go to next step.
3. Turn ignition off. If DTC B0100 is current, disconnect driver-side EFS connector. See **ELECTRONIC FRONTAL SENSOR (EFS)** under REMOVAL & INSTALLATION. If DTC B0103 is current, disconnect passenger-side EFS connector. If applicable EFS connector shows signs of damage or corrosion, go to next step. If connector is okay, go to step 5 .
4. If component side of connector is damaged, replace EFS. Go to step 13 . If harness side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 13 .
5. Disconnect SDM connector. See **Fig. 17** . If SDM connector shows signs of damage or corrosion, replace connector. See **WIRE REPAIR** . Go to step 13 . If SDM terminals show signs of damage or corrosion, go to step 11 . If SDM connector and terminals are okay, go to next step.

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6. If DTC B0100 is current, test driver-side EFS signal circuit for a short to ground, a high resistance or an open circuit. If DTC B0103 is current, test passenger-side EFS signal circuit for a short to ground, a high resistance or an open circuit. If a short to ground, an open or high resistance is found and corrected, go to step 13 . If an open or high resistance is not found, go to next step.
7. If DTC B0100 is current, test driver-side EFS voltage circuit for a short to ground, high resistance or an open circuit. If DTC B0103 is current, test passenger-side EFS voltage circuit for a short to ground, a high resistance or an open circuit. If a short to ground, an open or high resistance is found and corrected, go to step 13 . If a short to ground, an open or high resistance is not found, go to next step.
8. Turn ignition on. Check for a short to voltage in applicable EFS circuits. If a short to voltage is found and corrected, go to step 13 . If a short to voltage is not found, go to next step.
9. If DTC B0100, was retrieved, replace driver-side EFS. Go to next step. If DTC B0103 was retrieved by scan tool, replace passenger-side EFS. Go to next step.
10. Reconnect all SIR components. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If DTC's are retrieved, go to next step. If DTC's are not retrieved, system is normal.
11. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
12. For DTC B0101 and B0102, replace driver-side EFS. Go to next step. For DTC B0104 and B0105, replace passenger-side EFS. Go to next step.
13. Reconnect all SIR components. Using scan tool, clear all SIR DTC's. Road test vehicle, then check for DTC's. If DTC's are retrieved, go to step 2 . If DTC's are not retrieved, system is normal.

DTC B1000 : INTERNAL SDM FAILURE

Circuit Description

DTC B1000 indicates an internal SDM malfunction. No external circuits are involved.

Conditions For Setting DTC

DTC sets when SDM detects an internal malfunction.

Action Taken

SDM refuses all additional inputs.

Conditions For Clearing DTC

Current DTC clears when malfunction is no longer present. History DTC clears when SDM ignition cycle counter reaches the reset threshold, without a repeat of malfunction.

Diagnostic Aids

DTC may be stored as history DTC without affecting operation of SDM. If DTC is retrieved only as a history DTC and not as a current DTC, DO NOT replace SDM. If DTC is retrieved as a history and current DTC, replace SDM.

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NOTE: For circuit 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. Using scan tool, request SIR DTC display. If DTC B1000 is retrieved as a current DTC, go to next step. If DTC B1000 is retrieved as a history DTC, go to DIAGNOSTIC AIDS .
3. Replace SDM. See SENSING & DIAGNOSTIC MODULE (SDM) under REMOVAL & INSTALLATION. Reconnect all SIR components. Go to next step.
4. Using scan tool, erase DTC's. Road test vehicle, then check for DTC's. IF DTC B1000 is retrieved by scan tool, go to step 2 . If DTC B1000 is not retrieved, system is normal. Go to SIR DIAGNOSTIC SYSTEM CHECK .

DTC B1001 : OPTION CONFIGURATION ERROR

Circuit Description

When ignition is turned on, Sensing and Diagnostic Module (SDM) compares restraints identification stored in SDM to restraints identification stored in Body Control Module (BCM).

Conditions For Setting DTC

DTC sets when ignition voltage is within normal operating range and restraints identification stored in SDM does not match restraints identification stored in BCM.

Action Taken

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

Conditions For Clearing DTC

DTC clears when restraints identification stored in SDM matches restraints identification stored in BCM and Vehicle Identification Number (VIN) information stored in SDM matches VIN stored in BCM. CLEAR CODES command must be issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

Diagnostic Aids

DTC B1001 is an indication that restraints identification stored in BCM and SDM DO NOT match or that VIN stored in BCM and SDM DO NOT match. If BCM and/or Powertrain Control Module (PCM) were replaced, reprogramming may be necessary.

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 .

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2. Using scan tool, verify that PCM is programmed with correct VIN. If VIN is not correct, go to next step. If VIN is correct, go to step 4 .
3. Using scan tool, program correct VIN into PCM. Go to step 9 .
4. If BCM was replaced, go to next step. If BCM was not replaced, go to step 6 .
5. Using scan tool, program BCM to learn restraints identification from SDM. Go to step 9 .
6. Using scan tool, verify that BCM is programmed with correct VIN. If VIN is not correct, go to next step. If VIN is correct, go to step 8 .
7. Using scan tool, program correct VIN into BCM. Go to step 9 .
8. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
9. Reconnect all SIR components. Using scan tool, clear DTC's. Road test vehicle. Turn ignition off for 10 seconds. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

WIRE REPAIR

SIR system requires special wiring repair procedures due to sensitive nature of circuitry. Wire Repair Kit (J38125-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)
Front seat nuts and bolts	33 (45)
Steering wheel nut	30 (41)
	INCH Lbs. (N.m)

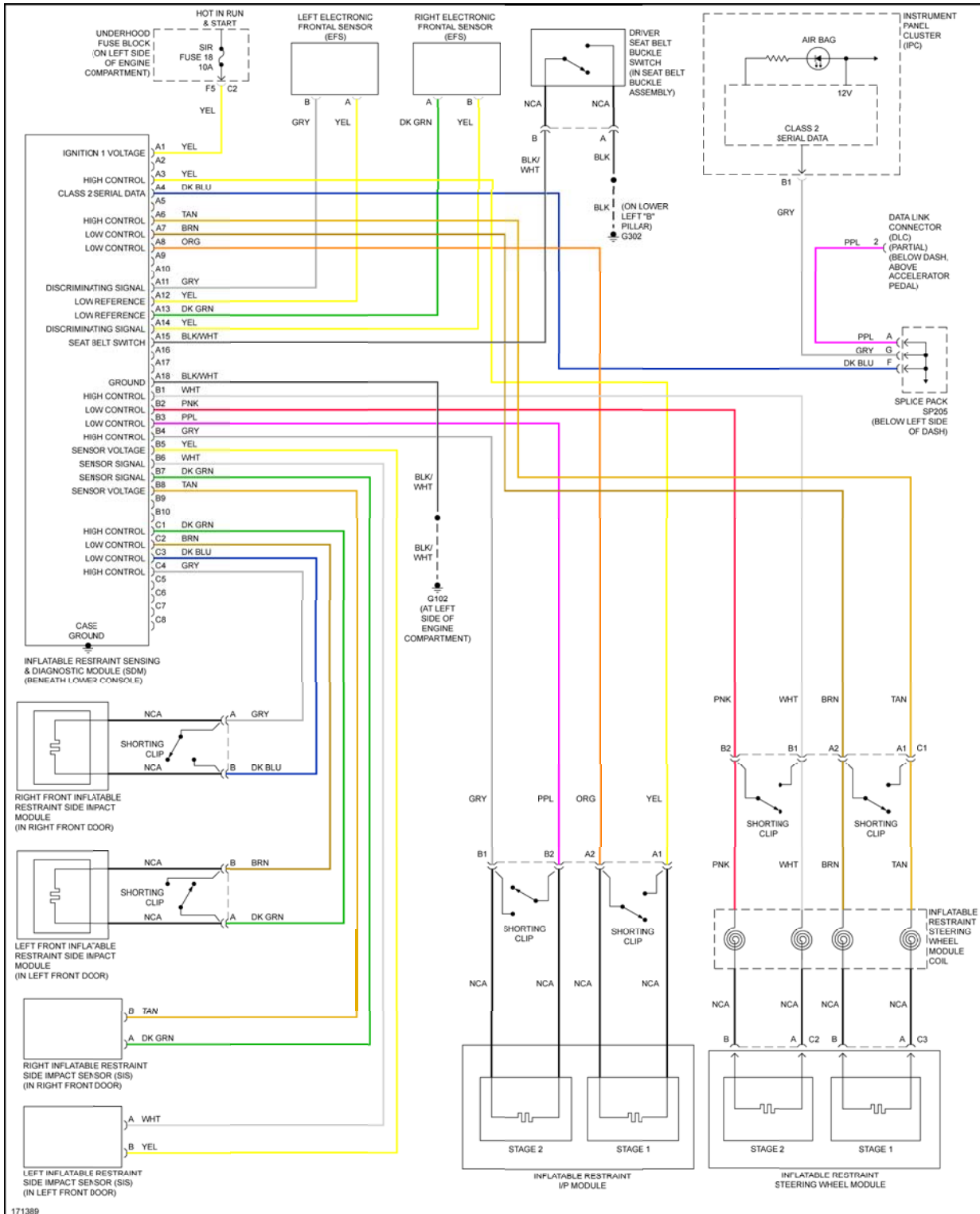
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Air duct screw	22 (2.5)
Electronic Frontal Sensor (EFS) bolts	71 (8.0)
Instrument Panel Cluster (IPC) screws	22 (2.5)
Passenger-side air bag mounting nuts and bolts	71 (8.0)
Sensing & Diagnostic Module (SDM) nuts	106 (12.0)
Side Impact Sensor (SIS) screws	71 (8.0)
Upper & lower steering column cover screws	13 (1.5)

WIRING DIAGRAMS

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Fig. 24: Air Bag System Wiring Diagram (Ascender)