

WORKSHOP MANUAL

TF SERIES

ACCESSORIES & RESTRAINTS

SECTION 9

ISUZU

ISUZU



International Service & Parts
Tokyo, Japan

NOTICE

Before using this Workshop Manual to assist you in performing vehicle service and maintenance operations, it is recommended that you carefully read and thoroughly understand the information contained in Section - OA under the headings "GENERAL REPAIR INSTRUCTIONS" and "HOW TO USE THIS MANUAL".

All material contained in this Manual is based on the latest product information available at the time of publication.

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SECTION 9

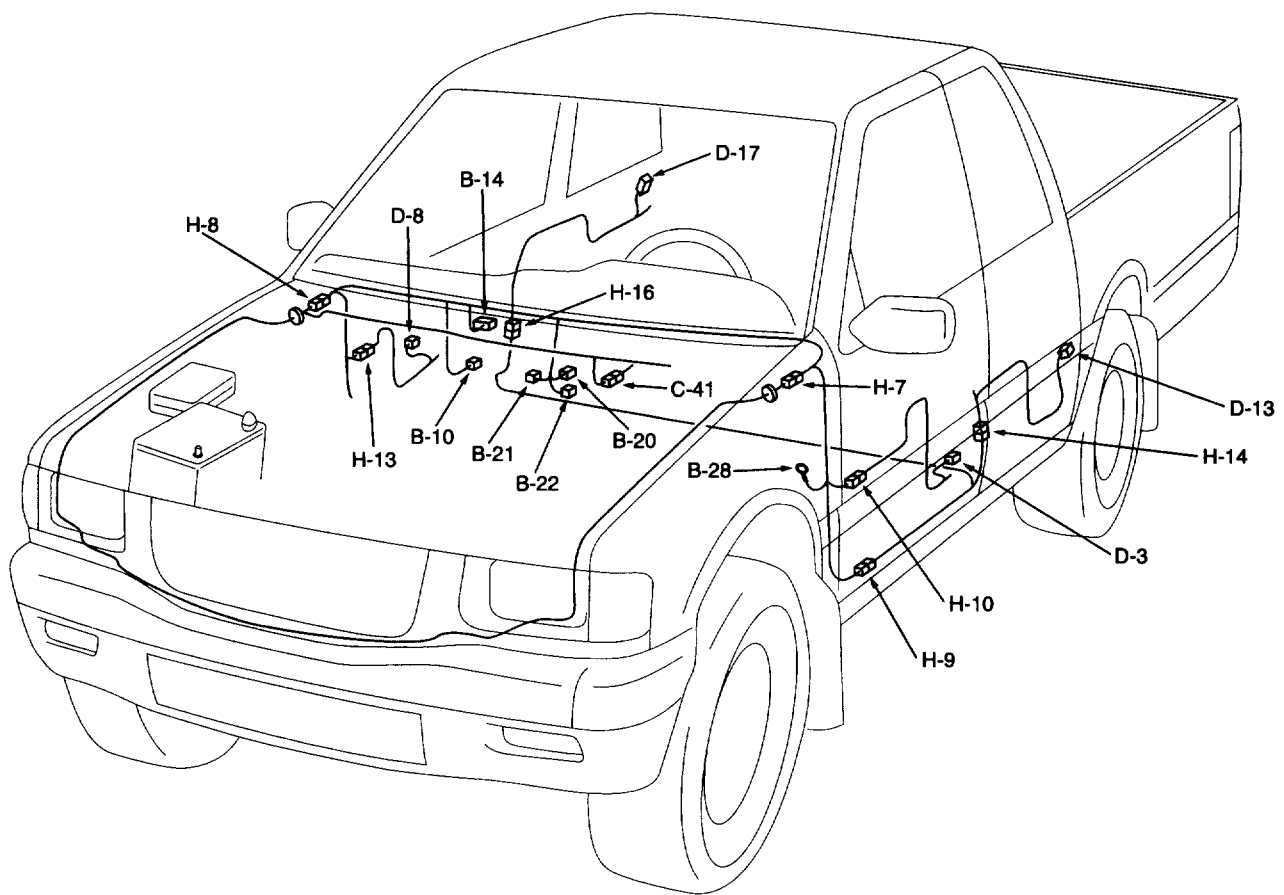
ACCESSORIES

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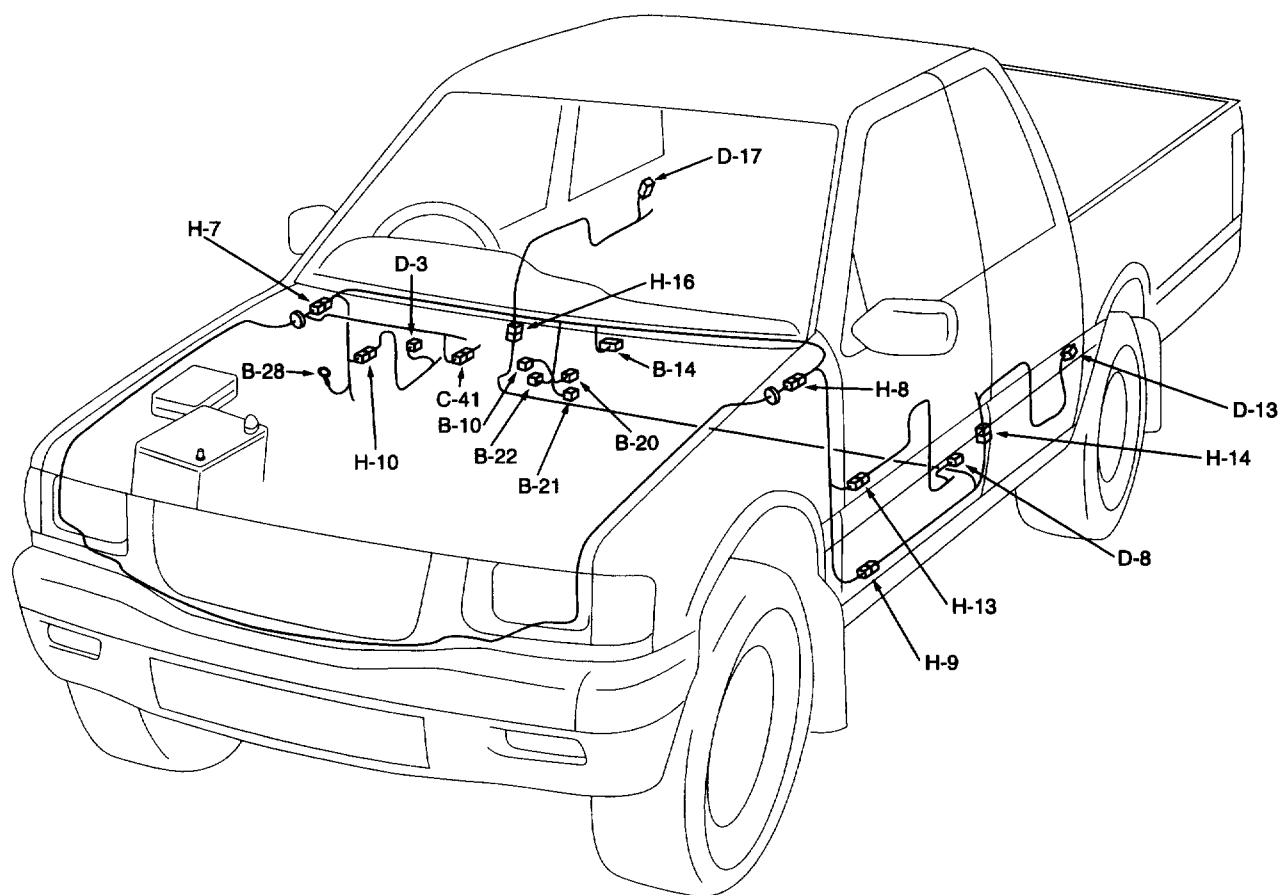
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PARTS LOCATION

LHD

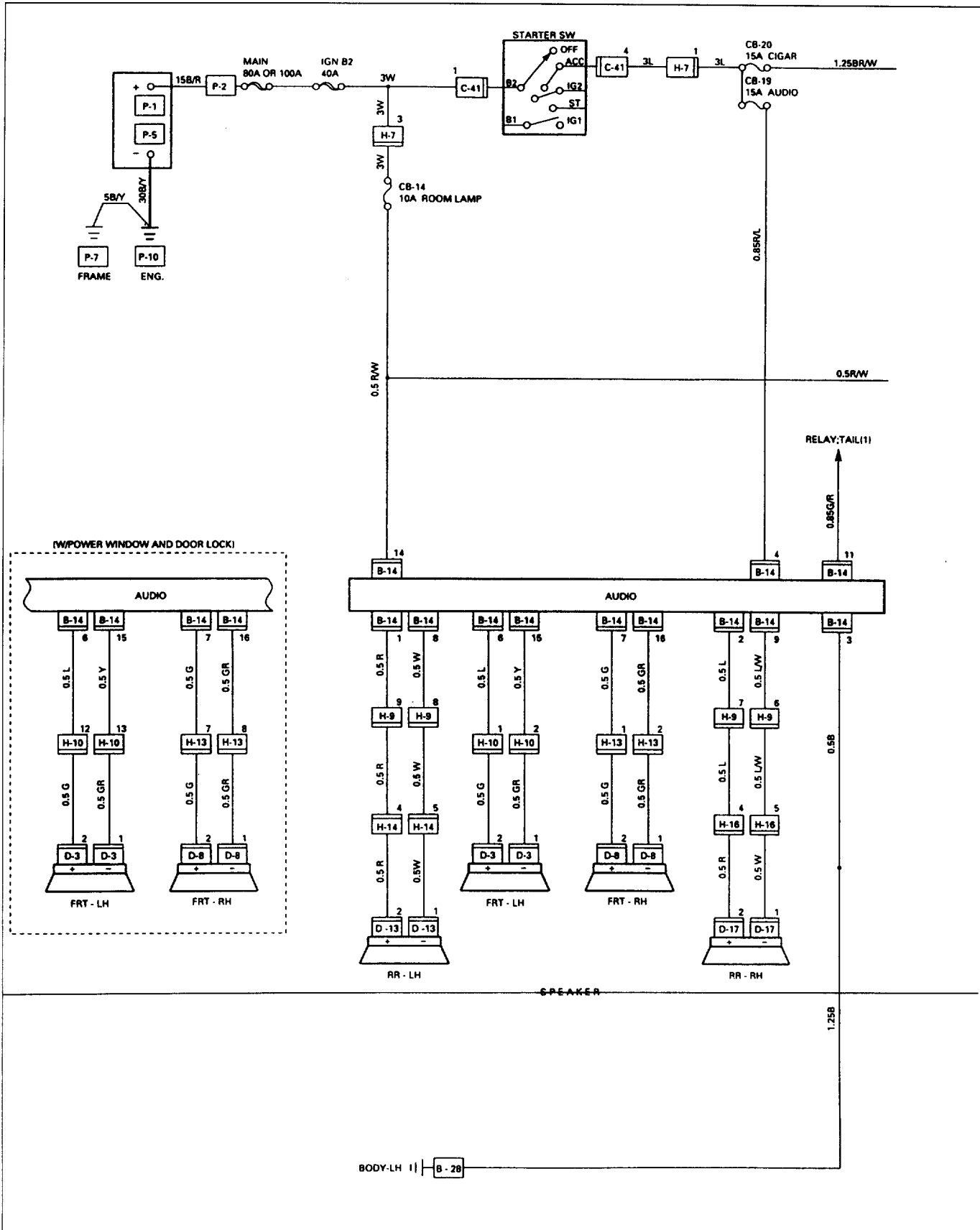


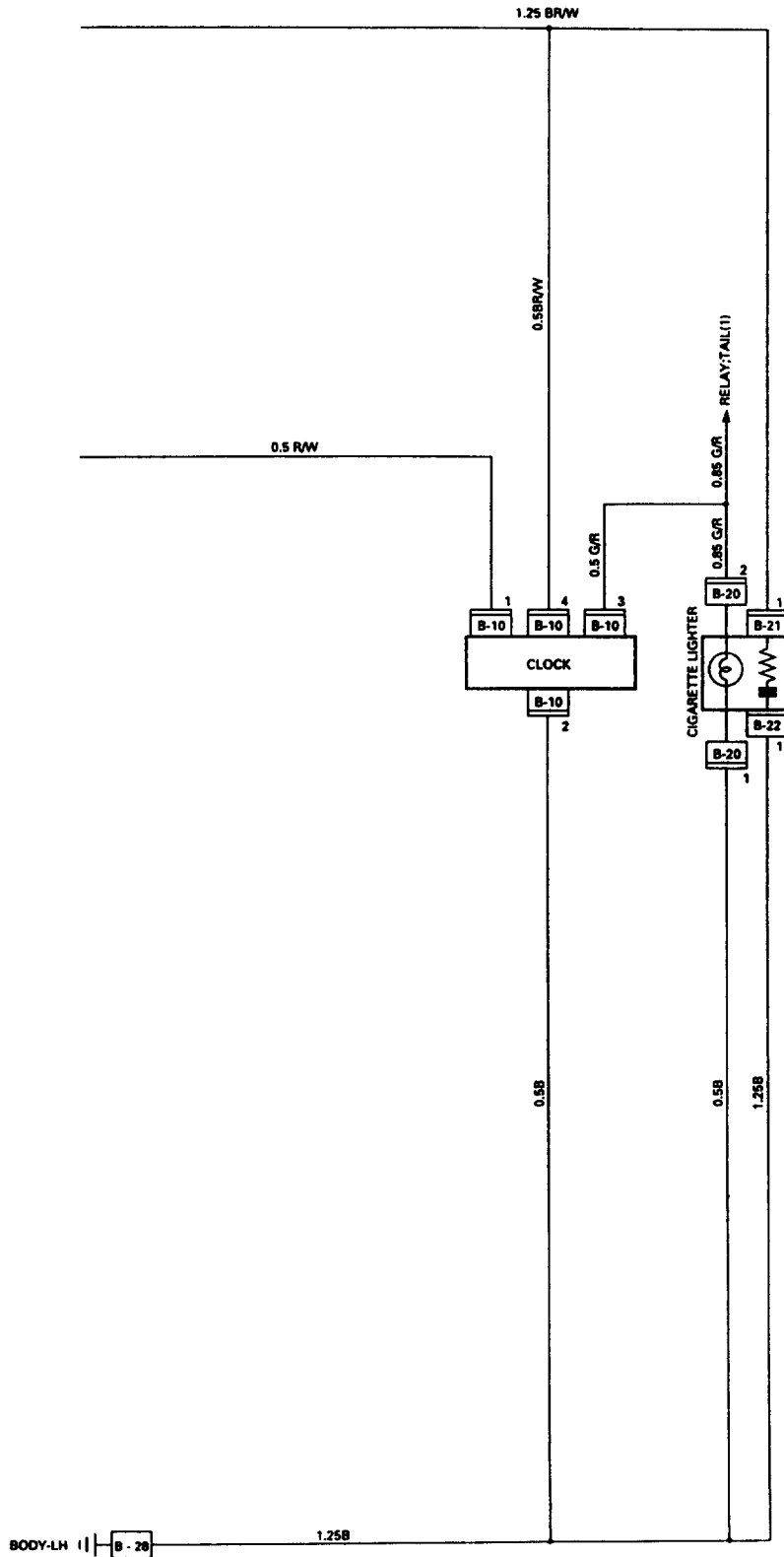
RHD

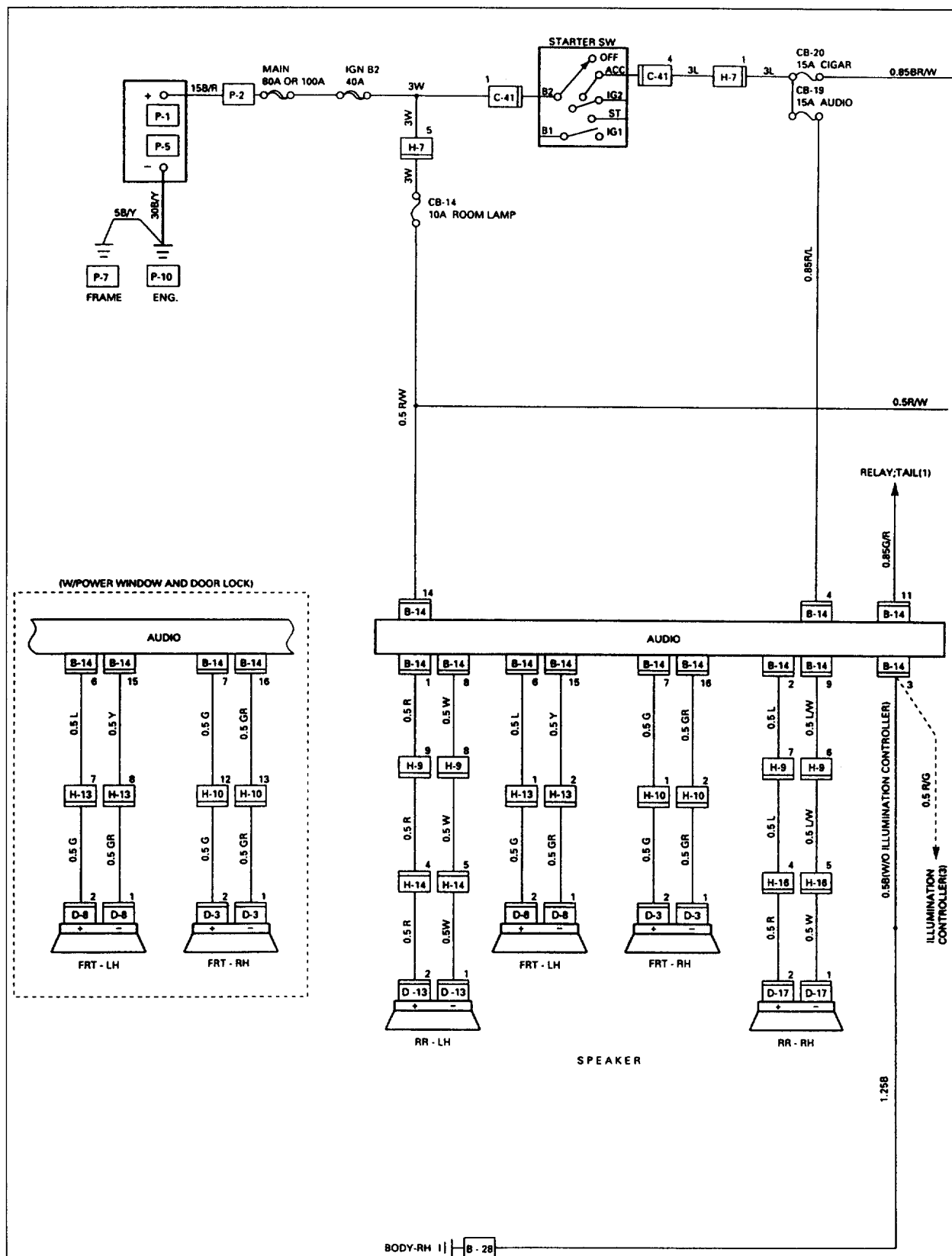


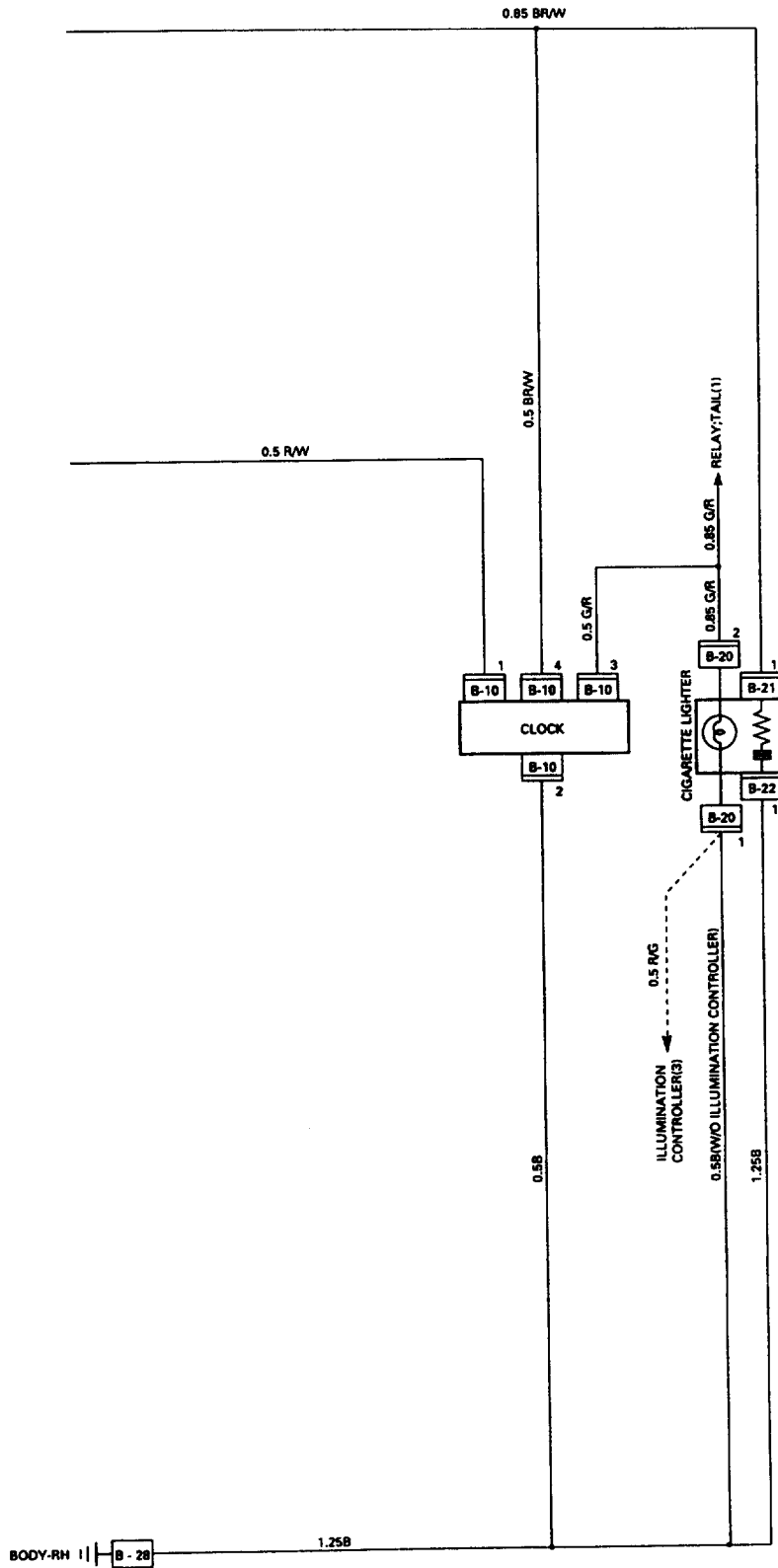
CIRCUIT DIAGRAM

LHD

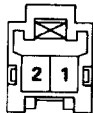
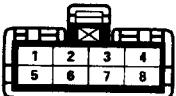
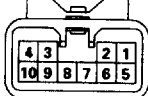
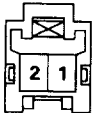
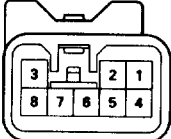
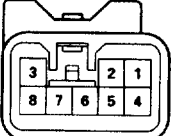
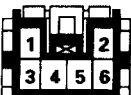
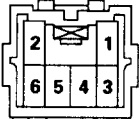
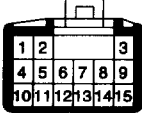
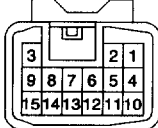








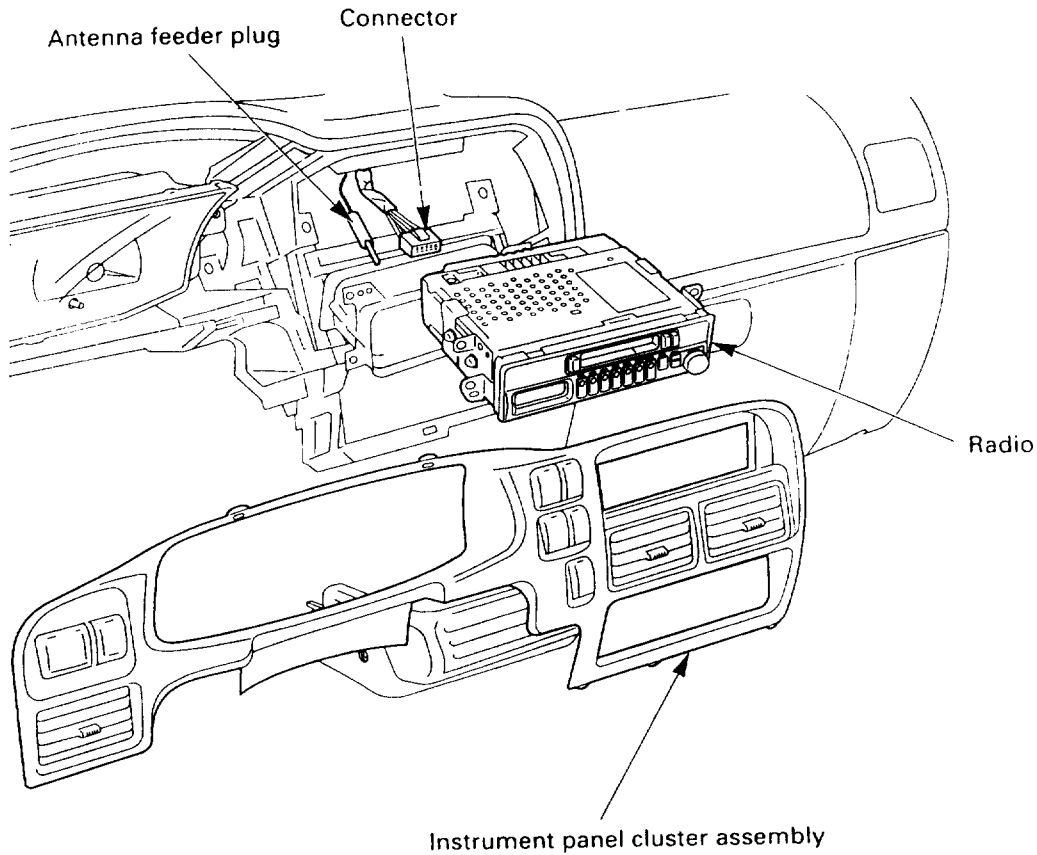
CONNECTOR LIST

No.	Connector face	No.	Connector face
B-14		H-10	  (W/POWER WINDOW AND DOOR LOCK)
B-28		H-10	  (W/O POWER WINDOW AND DOOR LOCK)
C-41	 	H-13	  (W/ POWER WINDOW AND DOOR LOCK)
D-3		H-13	  (W/O POWER WINDOW AND DOOR LOCK)
D-8		H-14	 
D-13		H-16	 
D-17			
H-7 (LHD)	 		
H-7 (RHD)	 		
H-9	 		

RADIO

↔ ↔ REMOVAL AND INSTALLATION

This illustration is based on LHD model.



↔ Removal

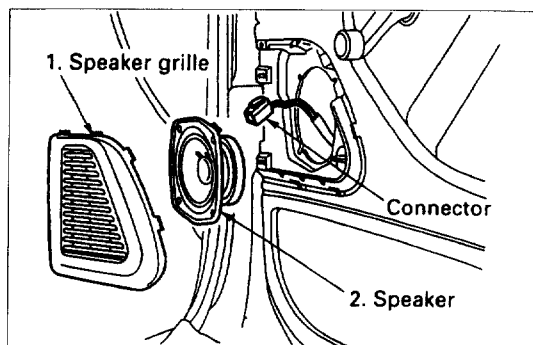
1. Remove Instrument Panel lower cover assembly.
2. Remove meter cluster assembly.
3. Disconnect the connector for Audio and Mirror.
4. Remove 4 screws on the radio.
5. Disconnect the Antenna feeder plug.
6. Pull out the radio.

↔ Installation

To install, follow the removal steps in the reverse order.

SPEAKER

REMOVAL AND INSTALLATION



Removal

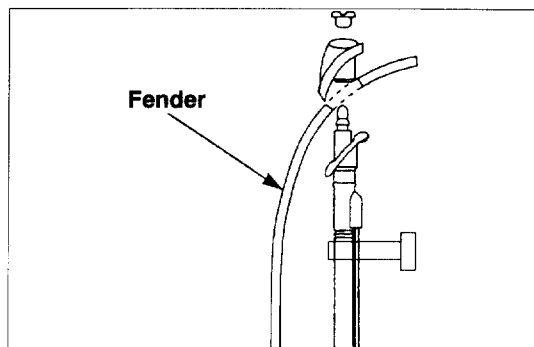
1. Speaker Grille
 - Pull the grille to release the locks.
2. Speaker
 - Remove four screws.
 - Disconnect the connector.

Installation

To install, follow the removal steps in the reverse order.

ANTENNA

REMOVAL AND INSTALLATION



Removal and Installation

1. Remove the antenna nut.
 2. Remove the antenna cover.
 3. Remove the fender cover.
 4. Remove the antenna stay.
 5. Pull out the antenna downward.
- Remove and install the antenna as illustrated.
Antenna unit is located on the front fender driver side.
To install, follow the removal steps in the reverse order.

SECTION 9J

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

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Service Precaution

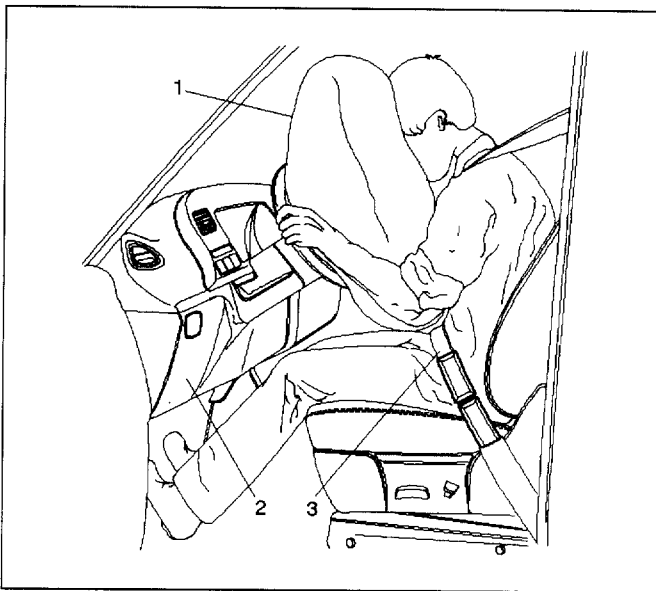
WARNING: THIS VEHICLE HAS A SUPPLEMENTAL RESTRAINT SYSTEM (SRS). REFER TO THE SRS COMPONENT AND WIRING LOCATION VIEW IN ORDER TO DETERMINE WHETHER YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING. WHEN YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING, REFER TO THE SRS SERVICE INFORMATION. FAILURE TO FOLLOW WARNINGS COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY, OR OTHERWISE UNNEEDED SRS SYSTEM REPAIRS.

CAUTION: Always use the correct fastener in the proper location. When you replace a fastener, use ONLY the exact part number for that application. ISUZU will call out those fasteners that require a replacement after removal. ISUZU will also call out the fasteners that require thread lockers or thread sealant. UNLESS OTHERWISE SPECIFIED, do not use supplemental coatings (Paints, greases, or other corrosion inhibitors) on threaded fasteners or fastener joint interfaces. Generally, such coatings adversely affect the fastener torque and the joint clamping force, and may damage the fastener. When you install fasteners, use the correct tightening sequence and specifications. Following these instructions can help you avoid damage to parts and systems.

General Description

CAUTION: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

Restraint Devices

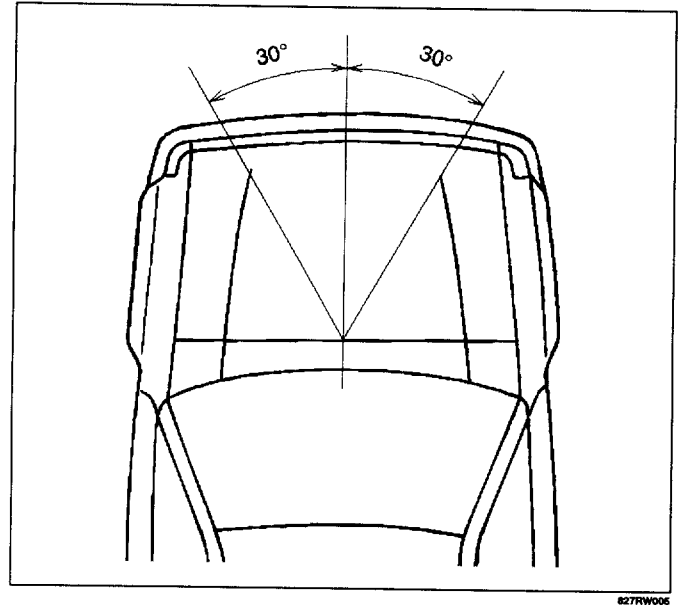


Legend

- (1) Deployed Air Bag
- (2) Knee Bolster
- (3) Seat Belt

The Supplemental Restraint System (SRS) helps supplement the protection offered by the driver and front passenger seat belts by deploying an air bag from the center of the steering wheel and from the top of the right side of the instrument panel.

The air bag deploys when the vehicle is involved in a frontal crash of sufficient force up to 30 degrees off the centerline of the vehicle. To further absorb the crash energy there is a knee bolster located beneath the instrument panel for both the driver and passenger, and the steering column is collapsible.

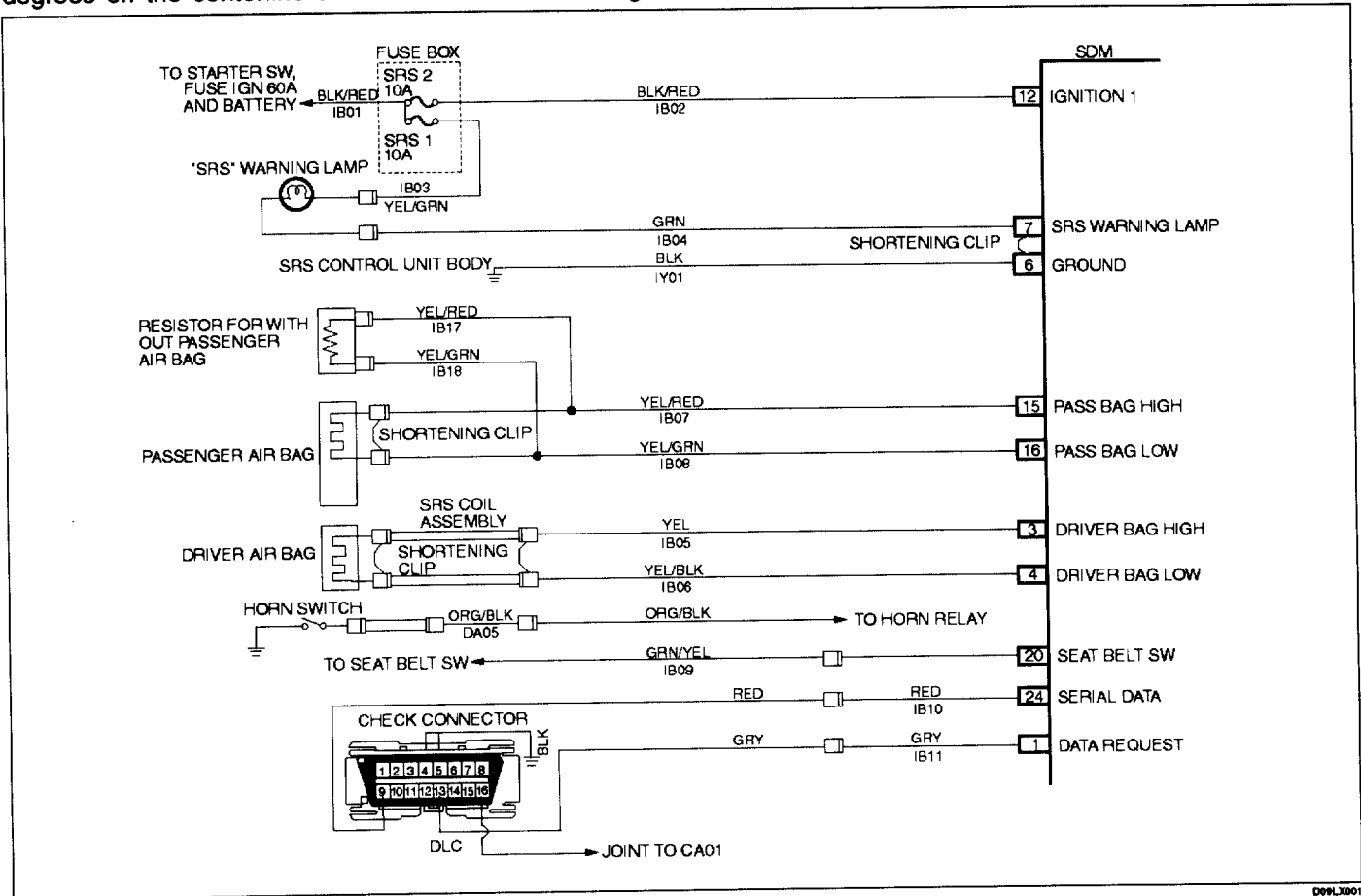


System Description

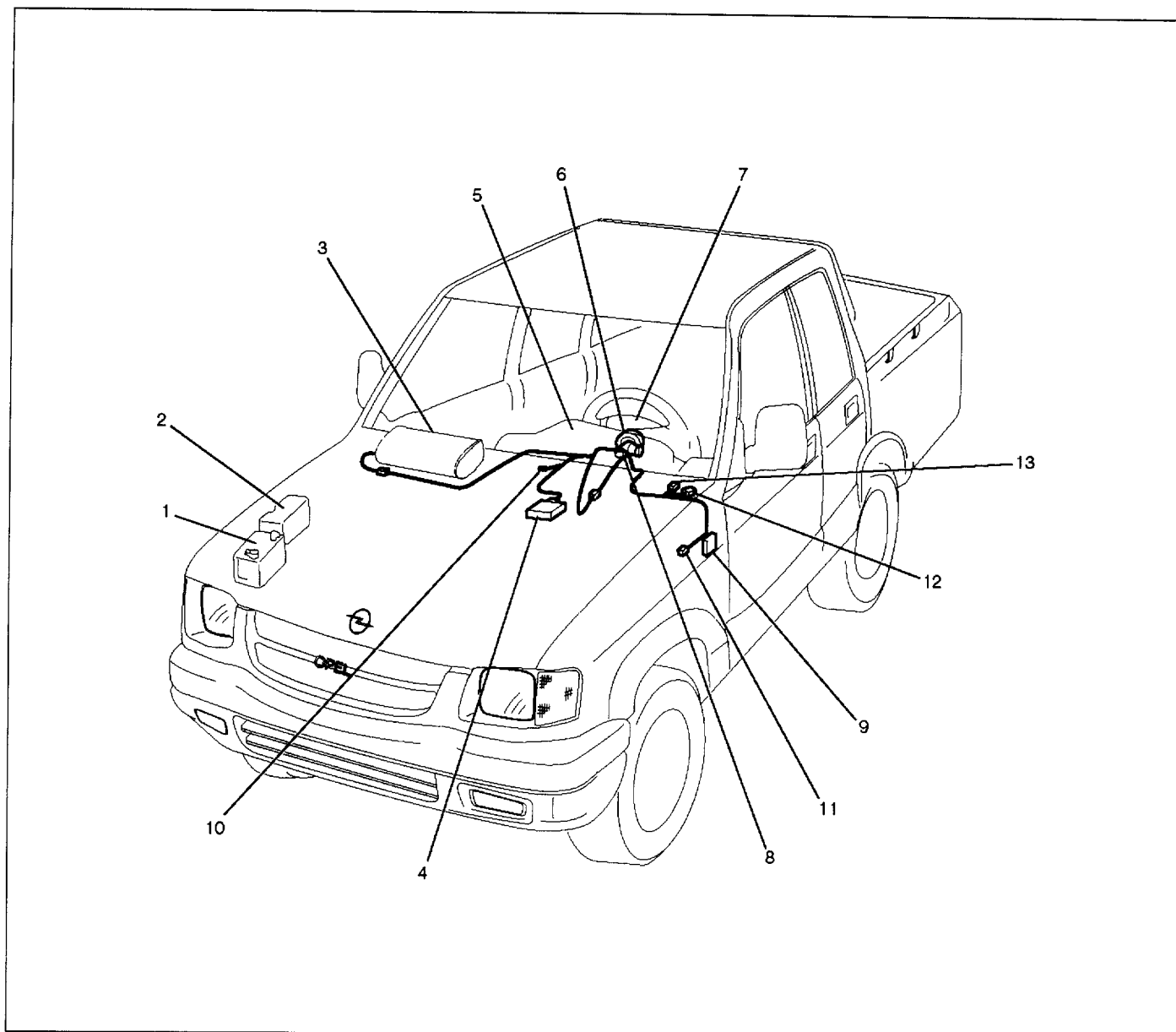
The SRS consists of the Sensing and Diagnostic Module (SDM), the driver air bag assembly, the SRS coil assembly, the passenger air bag assembly and the "AIR BAG" warning lamp in the instrument cluster. The SDM, SRS coil assembly (driver side only), driver air bag assembly, passenger air bag assembly and connector wire make up the deployment loops. The function of the deployment loops is to supply current through air bag assembly, which will cause deployment of the air bags in the event of a frontal crash of sufficient force, up to 30 degrees off the centerline of the vehicle. The air bag

assemblies are only supplied enough current to deploy when the SDM detects vehicle velocity changes severe enough to warrant deployment.

The SDM contains a sensing device which converts vehicle velocity change to an electrical signal. The electrical signal generated is processed by the SDM and then compared to a value stored in memory. When the generated signal exceeds the stored value, the SDM will cause current to flow through the air bag assembly deploying the air bags.



SRS Component And Wiring Location View



810LY001

Legend

- | | |
|--------------------------------|-----------------------------------|
| (1) Battery | (7) Driver Air Bag Assembly |
| (2) Relay & Fuse Box | (8) Starter Switch |
| (3) Passenger Air Bag Assembly | (9) Fuse Box, C-21 |
| (4) SDM | (10) SRS Body Earth |
| (5) Meter Assembly | (11) Body Harness Connector |
| (6) SRS Coil Assembly | (12) Instrument Harness Connector |
| | (13) Engine Harness Connector |

Component Description**SDM (Sensing and Diagnostic Module)**

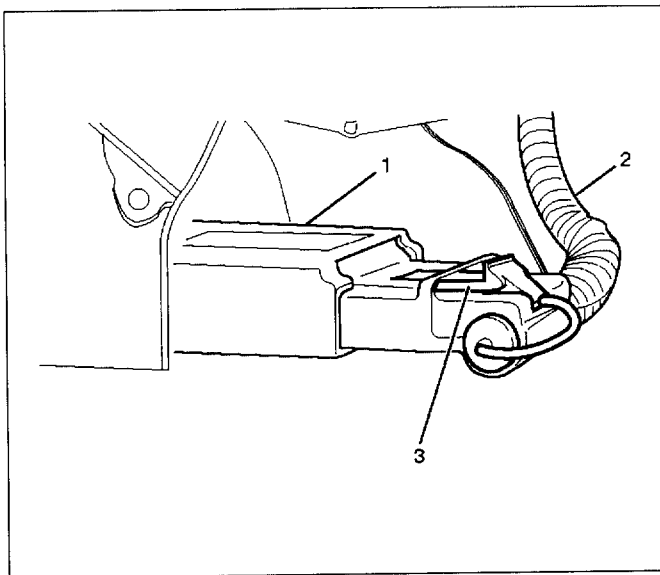
WARNING: DURING SERVICE PROCEDURES, BE VERY CAREFUL WHEN HANDLING A SENSING AND DIAGNOSTIC MODULE (SDM). NEVER STRIKE OR JAR THE SDM. NEVER POWER UP THE SRS WHEN THE SDM IS NOT RIGIDLY ATTACHED TO THE VEHICLE. ALL SDM AND MOUNTING BRACKET

FASTENERS MUST BE CAREFULLY TORQUED AND THE ARROW MUST BE POINTED TOWARD THE FRONT OF THE VEHICLE TO ENSURE PROPER OPERATION OF THE SRS. THE SDM COULD BE ACTIVATED WHEN POWERED WHILE NOT RIGIDLY ATTACHED TO THE VEHICLE WHICH COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY.

The Sensing and Diagnostic Module (SDM) is designed to perform the following functions in the SRS:

1. Energy Reserve — The SDM maintains 24-Volt Loop Reserve (24VLR) energy supply to provide deployment energy when ignition voltage is lost in a frontal crash.
2. Frontal Crash Detection — The SDM monitors vehicle velocity changes to detect frontal crashes which are severe enough to warrant deployment.
3. Air Bag Deployment — When a frontal crash of sufficient force is detected, the SDM will cause enough current to flow through the air bag assembly to deploy the air bag.
4. Malfunction Detection — The SDM performs diagnostic monitoring of SRS electrical components and sets a diagnostic trouble code when a malfunction is detected.
5. Frontal Crash Recording — The SDM records information regarding SRS status during frontal crash.
6. Malfunction Diagnosis — The SDM displays SRS diagnostic trouble codes and system status information through the use of a scan tool.
7. Driver Notification — The SDM warns the vehicle driver of SRS malfunctions by controlling the "Air Bag" warning lamp.

The SDM is connected to the SRS wiring harness by a 24-pin connector. This harness connector uses a shorting clip across certain terminals in the contact area. This shorting clip connects the "AIR BAG" warning lamp to ground when the SDM harness connector is disconnected or CPA (Connector Position Assurance) is not inserted even if completely connected. This will cause the "AIR BAG" warning lamp to come "ON" steady whenever the ignition switch is at the ON or START positions with the SDM disconnected.



Legend

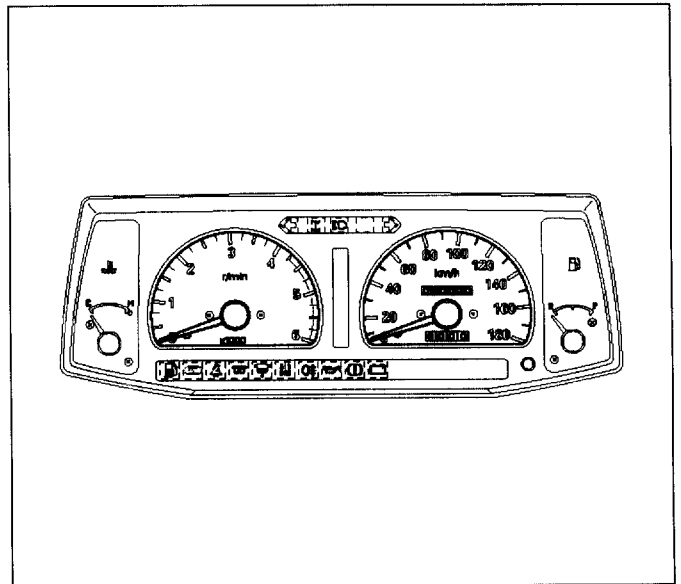
- (1) SDM
- (2) SRS Harness
- (3) Connector Position Assurance

"Air Bag" Warning Lamp

Ignition voltage is applied to the "AIR BAG" warning lamp when the ignition switch is at the ON or START positions. The SDM controls the lamp by providing ground with a lamp driver. The "AIR BAG" warning lamp is used in the SRS to do the following:

1. Verify lamp and SDM operation by flashing SEVEN (7) times when the ignition switch is first turned "ON".
2. Warn the vehicle driver of SRS electrical system malfunctions which could potentially affect the operation of the SRS. These malfunctions could result in nondeployment in case of a frontal crash or deployment for conditions less severe than intended.

The "AIR BAG" warning lamp is the key to driver notification of SRS malfunctions. For proper lamp operation, refer to the "SRS Diagnostic System Check" in this section.

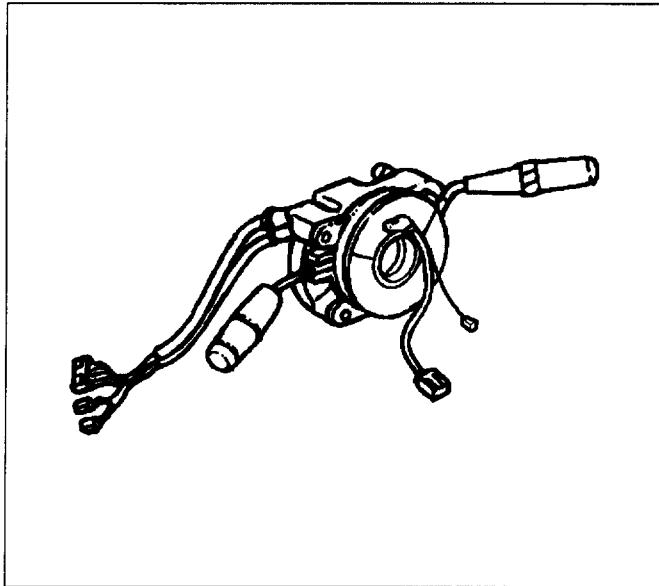


SRS Coil Assembly

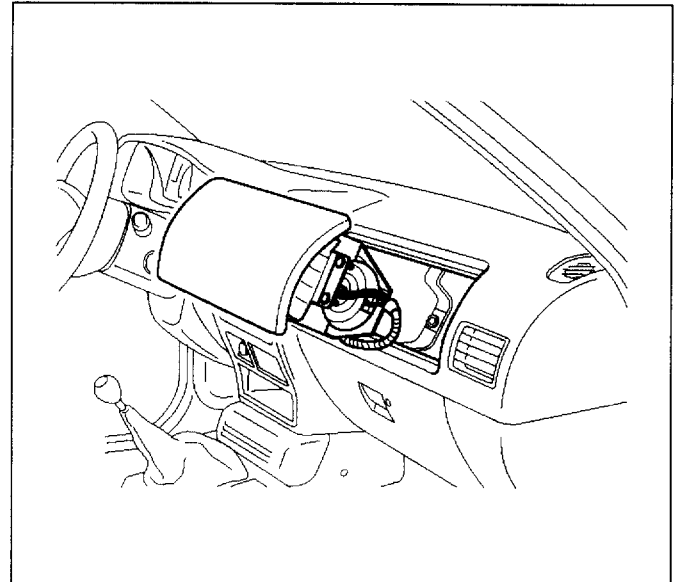
The SRS coil assembly consists of two current carrying coils. This is attached to the steering column and allow rotation of the steering wheel while maintaining continuous contact of the driver deployment loop to the driver air bag assembly.

There is a shorting clip on the yellow 2-pin connector near the base of steering column which connects the SRS coil to the SRS wiring harness.

The shorting clip shorts to the SRS coil and driver air bag assembly when the yellow 2-pin connector is disconnected. The circuit to the driver air bag assembly is shorted in this way to help prevent unwanted deployment of the air bag when servicing the steering column or other SRS components.



There is a shorting clip on the passenger air bag assembly connector which connects to the SRS harness. The shorting clip shorts across the passenger air bag assembly circuit when the passenger air bag assembly connector is disconnected. The circuit to the passenger air bag assembly is shorted in this way to help prevent unwanted deployment of the air bag when servicing the passenger air bag assembly, the instrument panel or other SRS components.



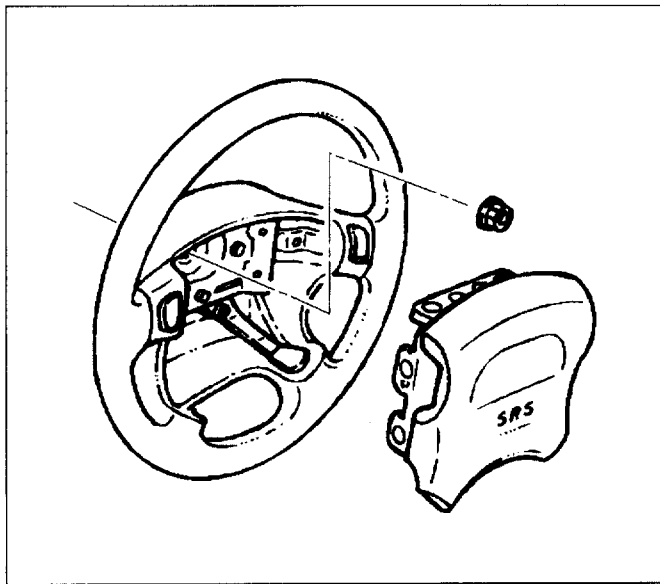
Air Bag Assemblies

The air bag assembly consist of an inflatable air bag assembly and an inflator (a canister of gas-generating material and an initiating device). When the vehicle is in a frontal crash of sufficient force.

The SDM causes current flow through the deployment loops. Current passing through the inflator ignites the material in the air bag assembly. The gas produced from this reaction rapidly inflates the air bag assembly.

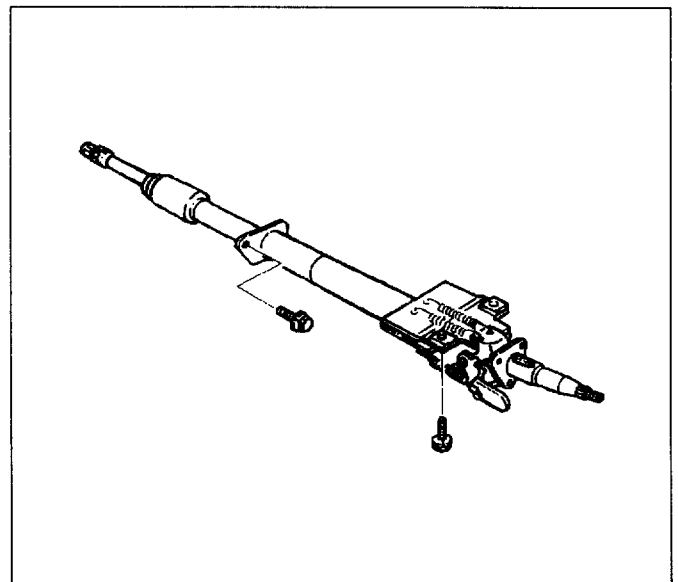
There is a shorting clip on the driver air bag assembly connector which connects the SRS coil assembly. The shorting clip shorts across the driver air bag assembly circuits when driver air bag assembly connector is disconnected.

The circuit to the driver air bag assembly is shorted in this way to help prevent unwanted deployment of the air bag when servicing the driver air bag assembly, the steering column or other SRS components.



Steering Column

The steering column absorbs energy and is designed to compress in a frontal crash to decrease the chance of injury to the driver.



Knee Bolster

The knee bolsters are used to absorb energy to protect knees and control the forward movement of the vehicle's front seat occupants during a frontal crash, by limiting

leg movement.

Definitions

Air Bag

An inflatable cloth cushion designed to deploy in certain frontal crashes. It supplements the protection offered by the seat belts by distributing the impact load more evenly over the vehicle occupant's head and torso.

Asynchronous

Performed in a nonperiodic fashion, (i.e., no defined time or interval).

B+

Battery voltage, (B+) The voltage available at the battery at the time of the indicated measurement. With the key "ON" and the engine not running, the system voltage will likely be between 12 and 12.5 volts. At idle, the voltage may be 14 to 16 volts. The voltage could be as low as 10 volts during engine cranking.

Bulb Check

The SDM will cause the "AIR BAG" warning lamp to flash seven times and then go "OFF" whenever the ignition switch transitions to the ON position from any other ignition switch position and no malfunctions are detected.

"Continuous Monitoring"

Tests performed by the SDM on the SRS every 100 milliseconds while "Ignition 1" voltage is in the normal operating voltage range at the SDM.

Data Link Connector (DLC)

Formerly "DLC" a connector which allows communication with an external computer, such as a scan tool.

Datum Line

A base line parallel to the plane of the underbody or frame from which all vertical measurements originate.

Deploy

To inflate the air bag.

Deployment Loops

The circuits which supply current to the air bag assemblies to deploy the air bag.

Diagnostic Trouble Code (DTC)

Formerly "Code", a numerical designator used by the SDM to indicate specific SRS malfunctions.

Driver Current Source

An output of the SDM which applies current into the driver air bag assembly circuit during the "Initiator Assembly Resistance Test".

Driver Air Bag Assembly

An assembly located in the steering wheel hub consisting of an inflatable bag, an inflator and an initiator.

EEPROM

Electrically Erasable Programmable Read Only

Memory. Memory which retains its contents when power is removed from the SDM.

Ignition Cycle

The voltage at the SDM "Ignition 1" inputs, with ignition switch "ON", is within the normal operating voltage range for at least ten seconds before turning ignition switch "OFF".

Ignition 1

A battery voltage (B+) circuit which is only powered with the ignition switch in the ON, or START positions.

Initiator

The electrical component inside the air bag assembly which, when sufficient current flows, sets off the chemical reaction that inflates the air bag.

"Initiator Assembly Resistance Test"

Tests performed once each ignition cycle when no malfunctions are detected during "Turn-ON" or "Continuous Monitoring". This test checks for the correct SDM configuration for the vehicle, shorts to "Ignition 1" in the deployment loops, high resistance or opens in the "Driver Side High", "Driver Side Low", "Passenger Side High" and "Passenger Side Low" circuits and measures the resistance of the inflator assembly consisting of 1) Initiators, 2) SRS coil assembly (driver side only), 3) Connectors and associated wiring.

Normal Operating Voltage Range

The voltage measured between the SDM "Ignition 1" terminals and "Ground" terminals is between 9 and 16 volts.

Passenger Current Source

An output of the SDM which applies current into the passenger air bag assembly circuit during the "Initiator Assembly Resistance Test".

Passenger Air Bag Assembly

An assembly located in the right side of the instrument panel consisting of an inflatable bag, an inflator and an initiator.

Scan Tool

An external computer used to read diagnostic information from on-board computers via the data link connector.

SDM

Sensing and Diagnostic Module which provides reserve energy to the deployment loops, deploys the air bags when required and performs diagnostic monitoring of all SRS components.

Serial Data

Information representing the status of the SRS.

SRS

Supplemental Restraint System.

SRS Coil Assembly

An assembly of two current-carrying coils in the driver deployment loop that allows the rotation of the steering wheel while maintaining the continuous contact of the driver deployment loop to the driver air bag assembly.

SRS Wiring Harness

The wires and connectors that electrically connect the components in the SRS.

"Turn-ON"

Test which the SDM performs on the SRS once during each ignition cycle immediately after "Ignition 1" voltage is applied to the SDM and before "Continuous Monitoring".

Diagnosis

WARNING: TO AVOID DEPLOYMENT WHEN TROUBLESHOOTING THE SRS, DO NOT USE ELECTRICAL TEST EQUIPMENT SUCH AS A BATTERY-POWERED OR AC-POWERED VOLTMETER, OHMMETER, ETC., OR ANY TYPE OF ELECTRICAL EQUIPMENT OTHER THAN THAT SPECIFIED IN THIS MANUAL. DO NOT USE A NONPOWERED PROBE-TYPE TESTER. INSTRUCTIONS IN THIS MANUAL MUST BE FOLLOWED CAREFULLY, OTHERWISE PERSONAL INJURY MAY RESULT.

Diagnostic Trouble Codes

The "SRS Diagnostic System Check" must always be the starting point of any SRS diagnosis. The "SRS Diagnostic System Check" checks for proper "AIR BAG" warning lamp operation and checks for SRS diagnostic trouble codes using the scan tool.

1. Current diagnostic trouble codes – Malfunctions that are presently being detected. Current diagnostic trouble codes are stored in RAM (Random Access Memory).
2. History diagnostic trouble codes – All malfunctions detected since the last time the history memory was cleared. History diagnostic trouble codes are stored in EEPROM.

Scan Tool Diagnostics

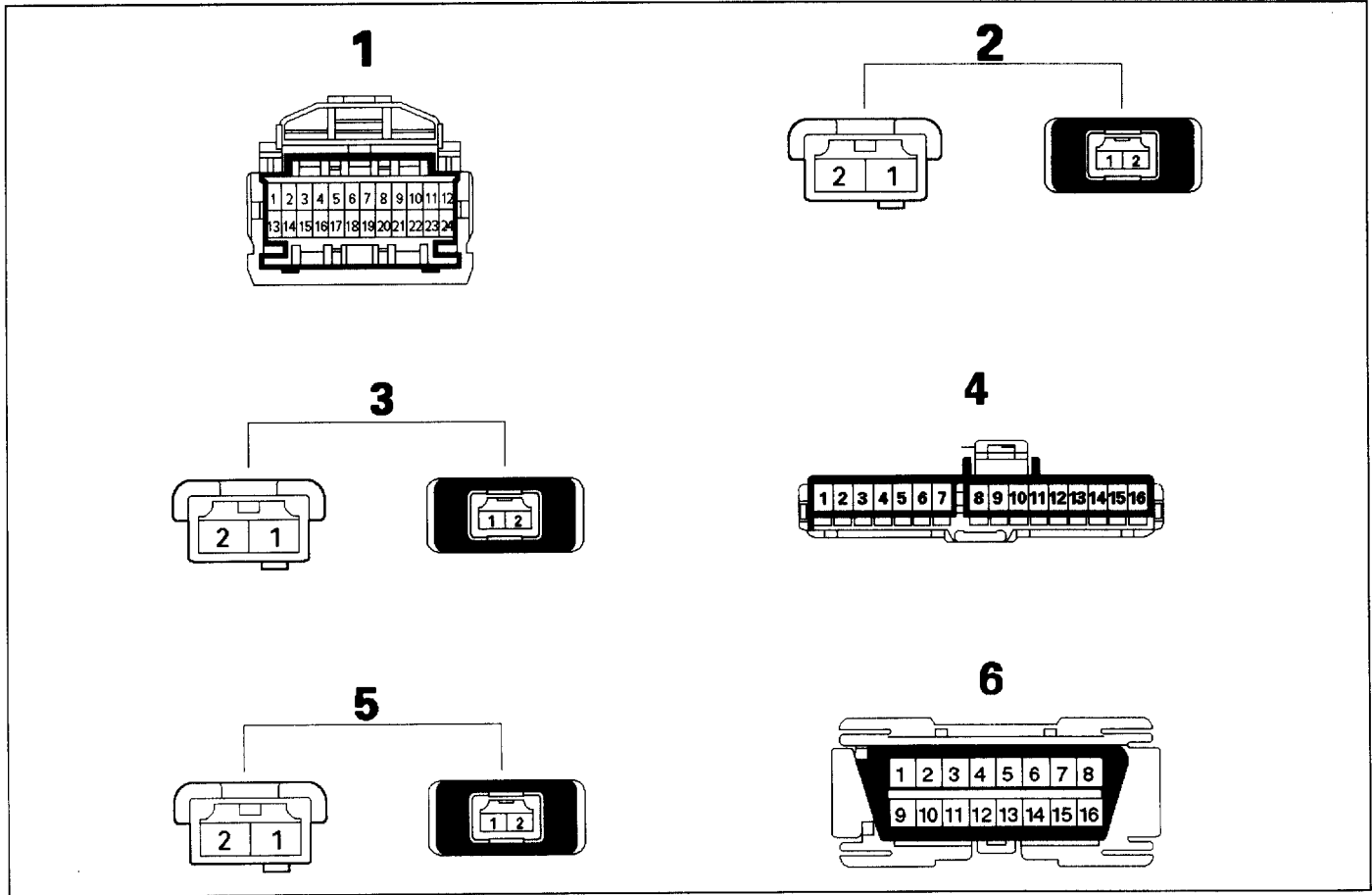
A scan tool is used to read current and history diagnostic trouble codes and to clear all diagnostic trouble codes after a repair is completed. The scan tool must be updated to communicate with the SRS through a replaceable cartridge before it can be used for SRS diagnostics. To use the scan tool, connect it to the data link connector and turn the ignition switch "ON". The scan tool reads serial data from the SDM "Serial Data" line terminal "24" to the data link connector terminal "9".

Use Of Special Tools

WARNING: TO AVOID DEPLOYMENT WHEN TROUBLESHOOTING THE SRS, DO NOT USE ELECTRICAL TEST EQUIPMENT SUCH AS A BATTERY-POWERED OR AC-POWERED VOLTMETER, OHMMETER, ETC., OR ANY TYPE OF ELECTRICAL EQUIPMENT OTHER THAN THAT SPECIFIED IN THIS MANUAL. DO NOT USE A NON POWERED PROBE-TYPE TESTER. INSTRUCTIONS IN THIS MANUAL MUST BE FOLLOWED CAREFULLY, OTHERWISE PERSONAL INJURY MAY RESULT. YOU SHOULD BE FAMILIAR WITH THE TOOLS LISTED IN THIS SECTION UNDER THE HANDLING SRS SPECIAL TOOLS.

You should be able to measure voltage and resistance. You should be familiar with proper use of a scan tool such as the Tech 2 Diagnostic Computer, SRS Driver/ Passenger Load Tool 5-8840-2421-0, Connector Test Adapter Kit 5-8840-0385-0, and the DVM (Digital Multimeter) 5-8840-0285-0.

SRS Connector Body Face Views



Legend

- (1) SDM
- (2) Driver Air Bag Assembly
- (3) Passenger Air Bag Assembly

- (4) "Air Bag" Warning Lamp
- (5) SRS Coil Assembly
- (6) DLC Connector

Repairs And Inspections Required After An Accident

NOTE: If any SRS components are damaged, they must be replaced. If SRS component mounting points are damaged, they must be replaced.

- Never use SRS parts from another vehicle. This does not include remanufactured parts purchased from an authorized dealer; they may be used for SRS repairs.
- Do not attempt to service the SDM, the SRS coil assembly, or the air bag assembly. Service of these items is by replacement only.
- Verify the part number of replacement air bag assembly.

CAUTION: Never use the air bag assembly from another vehicle and difference model year air bag assembly.

Use only new air bag assembly proper to the TFR which is being repaired.

CAUTION: Proper operation of the sensors and

supplemental restraint system (SRS) requires that any repairs to the vehicle structure return it to the original production configuration. Deployment requires, at a minimum, replacement of the SDM, air bag assembly and dimensional inspection of the steering column. Any visible damage to the SDM mounting bracket (s) requires replacement, and the steering column must be dimensionally inspected, whether deployment occurred or not.

Accident With Deployment – Component Replacement And Inspections

Certain SRS components must be replaced or inspected for damage after a frontal crash involving air bag deployment. Those components are:

- Air bag assembly
- SDM

CAUTION: Refer to “SDM Replacement Guidelines” below for important information on SDM replacement in both deployment and non deployment crashes.

- SRS coil assembly — Inspect wiring and connector for any signs of scorching, melting, or damage due to excessive heat. Replace if damaged. Refer to section “SRS Coil Assembly” in this manual.

Accident With or Without Deployment – Component Inspection

Certain SRS system components and rotation parts must be inspected after any crash, whether the air bag deployed or not. Those components are:

- Steering column — Refer to Inspection Required “After an Accident” in this manual.
- Knee bolsters and mounting points — Inspect for any distortion, bending, cracking, or other damage.
- I/P steering column reinforcement plate — Inspect for any distortion, bending, cracking, or other damage.
- I/P braces — Inspect for any distortion, bending, cracking, or other damage.
- Seat belts and mounting points — Refer to “Seat Belts” in Section “Seat Belt” of this workshop manual.

SDM Replacement Guidelines

SDM replacement policy requires replacement of SDM, after crash involving air bag deployment when “SRS Warning Lamp” turn “ON”, “SRS Diagnosis” should be done according to Section “Restraint Control System.”

Wiring Damage

If any SRS wire harness is damaged, it should be replaced. Don't repair SRS harness. It is replace only.

SRS Connector (Plastic Body And Terminal Metal Pin) Damage

If any connector or terminal in the SRS wire harness (except pigtails) is damaged, it should be replaced.

SRS Wire Pigtail Damage

If the wiring pigtail (a wire or wires attached directly to the device, not by a connector) is damaged, the entire component (with pigtail) must be replaced. Examples of “pigtail” components are the driver air bag assembly, the passenger air bag assembly, and the SRS coil assembly.

On-Vehicle Service

Service Precaution

WARNING: WHEN PERFORMING SERVICE ON OR AROUND SRS COMPONENTS OR SRS WIRING, FOLLOW THE PROCEDURES LISTED BELOW TO TEMPORARILY DISABLE THE SRS. FAILURE TO FOLLOW PROCEDURES COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY OR OTHERWISE UNNEEDED SRS REPAIRS.

The SDM in Driver–Passenger SRS can maintain sufficient voltage to cause a deployment for up to 15 seconds after the ignition switch is turned “OFF,” the battery is disconnected, or the fuse powering the SDM is removed.

Many of the service procedures require removal of the “SRS 2” fuse, and disconnection of the air bag assembly from the deployment loop to avoid an accidental deployment. If the air bag assembly is disconnected from the deployment loop as noted in the “Disabling the SRS” procedure that follows, service can begin immediately without waiting for the 15 second time period to expire.

Disabling The SRS

Removal

Turn the ignition switch to “LOCK” and remove key.

1. Remove SRS fuse SRS 2, from left dash side lower fuse block or disconnect battery.
2. Disconnect yellow 2–pin connector at the base of steering column.
3. Remove glove box assembly, refer to “Passenger Air Bag Assembly Replacement” in this manual.
4. Disconnect yellow 2–pin connector behind the glove box assembly.

CAUTION: With the “SRS 2” fuse removed and ignition switch “ON”, the “AIR BAG” warning lamp will be “ON”. This is normal operation and does not indicate an SRS malfunction.

Enabling The SRS

Installation

CAUTION: Never use the air bag assembly from another vehicle and difference model year air bag assembly.

Use only new air bag assembly proper to the Trooper which is being repaired.

Turn ignition switch to “LOCK” and remove key.

1. Connect yellow 2–pin connector passenger air bag assembly.
2. Install glove box assembly. Refer to “Passenger air bag assembly replacement” in this manual.
3. Connect yellow 2–pin connector at the base of steering column.
4. Install “AIR BAG” fuse SRS 2 to left dash side lower fuse block or connect battery.

Turn ignition switch to “ON” and verify that the “AIR BAG” warning lamp flashes seven times and then turns “OFF.” If it does not operate as described, perform the “SRS Diagnostic System Check” in this manual.

Handling / Installation / Diagnosis

1. Air bag assembly should not be subjected to temperatures above 65°C (150°F).
2. Air bag assembly, and SDM should not be used if

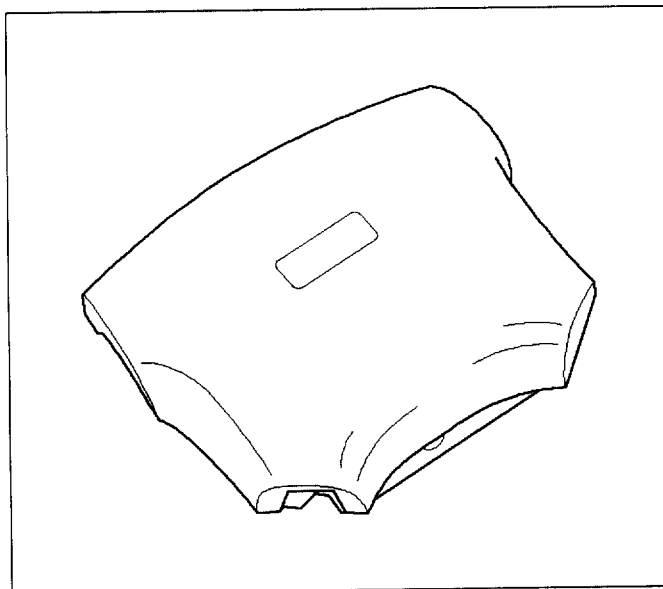
they have been dropped from a height of 100 centimeters (3.28 feet) or more.

3. When a SDM is replaced, it must be oriented with the arrow on the sensor pointing toward the front of the vehicle. It is very important for the SDM to be located flat on the mounting surface, parallel to the vehicle datum line. It is important that the SDM mounting surface is free of any dirt or other foreign material.
4. Do not apply power to the SRS unless all components are connected or a diagnostic chart requests it, as this will set a diagnostic trouble code.
5. The "SRS Diagnostic System Check" must be the starting point of any SRS diagnostics. The "SRS Diagnostic System Check" will verify proper "AIR BAG" warning lamp operation and will lead you to the correct chart to diagnose any SRS malfunctions. Bypassing these procedures may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacement.

Air Bag Assembly Handling / Shipping / Scrapping

Live (Undeployed) Air Bag Assembly

Special care is necessary when handling and storing a live (undeployed) air bag assembly. The rapid gas generation produced during deployment of the air bag could cause the air bag assembly, or an object in front of the air bag assembly, to be thrown through the air in the unlikely event of an accidental deployment.

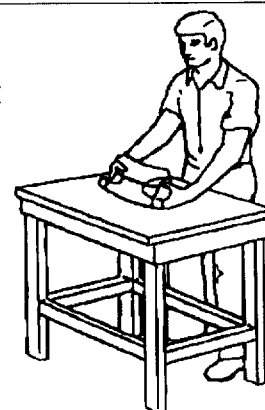


WARNING: WHEN CARRYING A LIVE AIR BAG ASSEMBLY, MAKE SURE THE BAG OPENING IS POINTED AWAY FROM YOU. IN CASE OF AN ACCIDENTAL DEPLOYMENT, THE BAG WILL THEN DEPLOY WITH MINIMAL CHANCE OF INJURY. NEVER CARRY THE AIR BAG ASSEMBLY BY THE WIRES OR CONNECTOR ON THE UNDERSIDE OF THE MODULE.



ALLWAYS CARRY
INFLATOR MODULE
WITH TRIM COVER
AWAY FROM BODY.

ALLWAYS PLACE
INFLATOR MODULE
ON WORKBENCH
UP, AWAY FROM
LOOSE OBJECTS.



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Air Bag Assembly Shipping Procedure For Live (Undeployed) Air Bag Assemblies

Service personnel should refer to the latest Service Bulletins for proper SRS air bag assembly shipping procedures.

Deployed Air Bag Assembly (Driver Side)

You should wear gloves and safety glasses. After the air bag assembly has been deployed, the surface of the air bag may contain a powdery residue. This powder consists primarily of cornstarch (used to lubricate the bag as it inflates) and by products of the chemical reaction. Sodium hydroxide dust (similar to lye soap) is produced as a by product of the deployment reaction. The sodium hydroxide then quickly reacts with atmospheric moisture and is converted to sodium carbonate and sodium bicarbonate (baking soda). Therefore, it is unlikely that sodium hydroxide will be present.

Air Bag Assembly Scrapping Procedure

During the course of a vehicle's useful life, certain situations may arise which will necessitate the disposal of a live (undeployed) air bag assembly. This information covers proper procedures for disposing of a live air bag assembly.

Before a live air bag assembly can be disposed of, it

must be deployed. A live air bag assembly must not be disposed of through normal refuse channels.

WARNING: FAILURE TO FOLLOW PROPER SUPPLEMENTAL RESTRAINT SYSTEM (SRS) AIR BAG ASSEMBLY DISPOSAL PROCEDURES CAN RESULT IN AIR BAG DEPLOYMENT WHICH MAY CAUSE PERSONAL INJURY. AN UNDEPLOYED AIR BAG ASSEMBLY MUST NOT BE DISPOSED OF THROUGH NORMAL REFUSE CHANNELS. THE UNDEPLOYED AIR BAG ASSEMBLY CONTAINS SUBSTANCES THAT CAN CAUSE SEVERE ILLNESS OR PERSONAL INJURY IF THE SEALED CONTAINER IS DAMAGED DURING DISPOSAL. DISPOSAL IN ANY MANNER INCONSISTENT WITH PROPER PROCEDURES MAY BE A VIOLATION OF FEDERAL, STATE, AND / OR LOCAL LAW.

In situations which require deployment of a live air bag assembly, deployment may be accomplished inside or outside the vehicle. The method employed depends upon the final disposition of the particular vehicle, as noted in "Deployment Outside Vehicle" and "Deployment Inside Vehicle" in this section.

Deployment Outside Vehicle (Driver Air Bag Assembly)

Deployment outside the vehicle is proper when the vehicle is to be returned to service. This includes, for example, situations in which the vehicle will be returned to useful service after a functionally or cosmetically deficient air bag assembly is replaced. Deployment and disposal of a malfunctioning air bag assembly is, of course, subject to any required retention period.

For deployment of a live (undeployed) air bag assembly outside the vehicle, the deployment procedure must be followed exactly. Always wear safety glasses during this deployment procedure until a deployed air bag assembly is scrapped or until an undeployed air bag assembly is shipped. Before performing the procedures you should be familiar with servicing the SRS and with proper handling of the air bag assembly. Procedures should be read fully before they are performed.

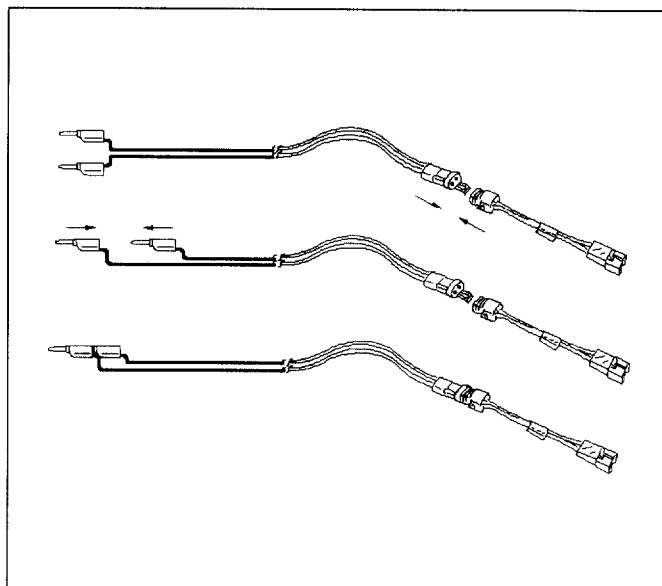
The following procedure requires use of 5-8840-2468-0 SRS deployment harness with appropriate pigtail adapter. Do not attempt procedure without 5-8840-2468-0 adapter.

WARNING: FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED MAY RESULT IN PERSONAL INJURY. NEVER CONNECT DEPLOYMENT HARNESS TO ANY POWER SOURCE BEFORE CONNECTING DEPLOYMENT HARNESS TO THE DRIVER AIR BAG ASSEMBLY. DEPLOYMENT HARNESS SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. WEAR SAFETY GLASSES THROUGHOUT THIS ENTIRE DEPLOYMENT AND DISPOSAL

PROCEDURE.

NOTE: This information applies only to driver air bag assembly. Refer to "Deployment Outside Vehicle (Passenger Air Bag assembly)" in this section for information on passenger air bag assembly scrapping.

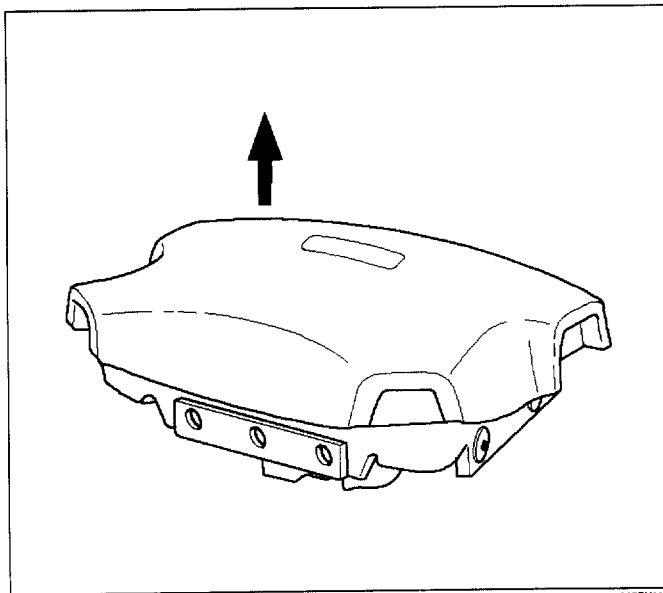
1. Turn ignition switch to "LOCK", remove key and put on safety glasses.
2. Inspect 5-8840-2468-0 SRS Deployment Harness and appropriate pigtail adapter for damage. If harness or pigtail adapter is damaged, discard and obtain a replacement.
3. Short the two SRS deployment harness leads together by fully seating one banana plug into the other. SRS deployment harness shall remain shorted and not be connected to a power source until the air bag is to be deployed.



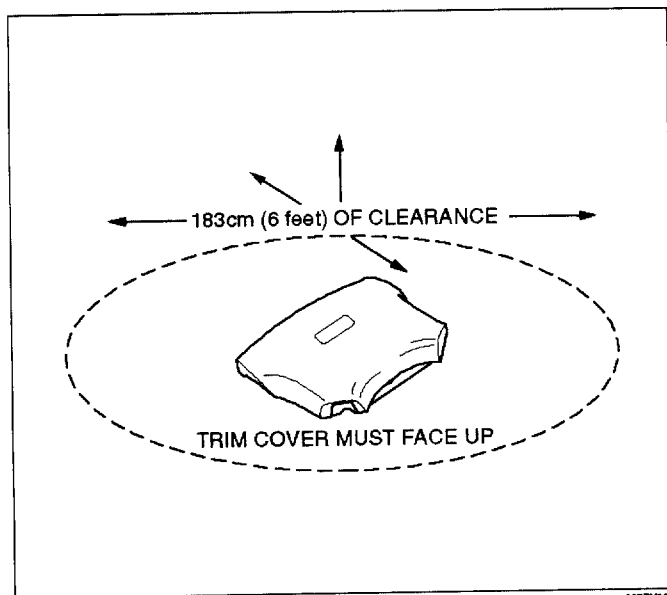
4. Connect the appropriate pigtail adapter to the SRS deployment harness.
5. Remove the driver air bag assembly from vehicle. Refer to "Inflator Module Removal" in this manual.

WARNING: WHEN STORING A LIVE AIR BAG ASSEMBLY OR WHEN LEAVING A LIVE AIR BAG ASSEMBLY UNATTENDED ON A BENCH OR OTHER SURFACE, ALWAYS FACE THE AIR BAG AND TRIM COVER UP AND AWAY FROM THE SURFACE. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. FAILURE TO FOLLOW PROCEDURES MAY RESULT IN PERSONAL INJURY.

6. Place the driver air bag assembly on a work bench or other surface away from all loose or flammable objects with its trim cover facing up, away from the surface.



7. Clear a space on the ground about 183 cm (six feet) in diameter where the driver air bag assembly is to be deployed. A paved, outdoor location where there is no activity is preferred. If an outdoor location is not available, a space on the shop floor where there is no activity and sufficient ventilation is recommended. Ensure no loose or flammable objects are within the deployment area.



8. Place the driver air bag assembly, with its trim cover facing up, on the ground in the space just cleared.
9. Stretch the SRS deployment harness and pigtail adapter from the driver air bag assembly to its full length.
10. Place a power source near the shorted end of the SRS deployment harness. Recommended application: 12 volts minimum, 2 amps minimum. A

vehicle battery is suggested.

11. Connect the driver air bag assembly to the pigtail adapter on the SRS deployment harness. Deployment harness shall remain shorted and not be connected to a power source until the air bag is to be deployed. The driver air bag assembly will immediately deploy the air bag when a power source is connected to it.

NOTE: Ensure that the pigtail adapter is firmly seated into the driver air bag assembly connector. Failure to fully seat the connectors may leave the shorting bar located in the driver air bag assembly connector functioning (shorted) and may result in nondeployment of the driver air bag assembly.

12. Verify that the area around the driver air bag assembly is clear of all people and loose or flammable objects.
13. Verify that the driver air bag assembly is resting with its trim cover facing up.
14. Notify all people in the immediate area that you intend to deploy the driver air bag. The deployment will be accompanied by a substantial noise which may startle the uninformed.
15. Separate the two banana plugs on the SRS deployment harness.

NOTE: When the air bag deploys, the driver air bag assembly may jump about 30 cm (one foot) vertically. This is a normal reaction of the driver air bag to the force of the rapid gas expansion inside the air bag.

NOTE: When the air bag deploys, the rapid gas expansion will create a substantial noise. Notify all people in the immediate area that you intend to deploy the driver air bag.

WARNING: DEPLOYMENT HARNESS SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. CONNECTING THE DEPLOYMENT HARNESS TO THE POWER SOURCE SHOULD ALWAYS BE THE LAST STEP IN THE AIR BAG ASSEMBLY DEPLOYMENT PROCEDURE. FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED MAY RESULT IN PERSONAL INJURY.

16. Connect the SRS deployment harness wires to the power source to immediately deploy the driver air bag. Recommended application: 12 volts minimum, 2 amps minimum. A vehicle battery is suggested.
17. Disconnect the SRS deployment harness from the power source.
18. Short the two SRS deployment harness leads together by fully seating one banana plug into the other.

19. In the unlikely event that the driver air bag assembly did not deploy after following these procedures, proceed immediately with Steps 24 through 26. If the driver air bag assembly did deploy, proceed with Steps 20 through 23.
20. Put on a pair of shop gloves and safety glasses to protect your hands and eyes from possible irritation and heat when handling the deployed driver air bag assembly. After the air bag assembly has been deployed, the surface of the air bag may contain a powdery residue. This powder consists primarily of cornstarch (used to lubricate the bag as it inflates) and by products of the chemical reaction. Sodium hydroxide dust (similar to lye soap) is produced as a by product of the deployment reaction. The sodium hydroxide then quickly reacts with the atmospheric moisture and is converted to sodium carbonate and sodium bicarbonate (baking soda). Therefore, it is unlikely that sodium hydroxide will be present after deployment.

WARNING: SAFETY PRECAUTIONS MUST BE OBSERVED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE METAL SURFACES OF THE AIR BAG ASSEMBLY WILL BE VERY HOT. ALLOW THE INFLATOR MODULE TO COOL BEFORE HANDLING ANY METAL PORTION OF IT. DO NOT PLACE THE DEPLOYED AIR BAG ASSEMBLY NEAR ANY FLAMMABLE OBJECTS. FAILURE TO FOLLOW PROCEDURES MAY RESULT IN FIRE OR PERSONAL INJURY.

AFTER A DRIVER AIR BAG ASSEMBLY HAS BEEN DEPLOYED, THE METAL CANISTER AND SURROUNDING AREAS OF THE DRIVER AIR BAG ASSEMBLY WILL BE VERY HOT. DO NOT TOUCH THE METAL AREAS OF THE DRIVER AIR BAG ASSEMBLY FOR ABOUT TEN MINUTES AFTER DEPLOYMENT. IF THE DEPLOYED DRIVER AIR BAG ASSEMBLY MUST BE MOVED BEFORE IT IS COOL, WEAR GLOVES AND HANDLE BY THE AIR BAG OR TRIM COVER.

21. Disconnect the pigtail adapter from the driver air bag assembly as soon after deployment as possible. This will prevent damage to the pigtail adapter or SRS deployment harness due to possible contact with the hot driver air bag assembly canister. The pigtail adapter can be reused. They should, however, be inspected for damage after each deployment and replaced if necessary.
22. Dispose of the deployed driver air bag assembly through normal refuse channels after it has cooled for at least 30 minutes.
23. Wash your hands with mild soap and water afterward.

NOTE: The remaining steps are to be followed in the unlikely event that the driver air bag assembly did not deploy after following these procedures.

24. Ensure that the SRS deployment harness has been

disconnected from the power source and that its two banana plugs have been shorted together by fully seating one banana plug into the other.

25. Disconnect the pigtail adapter from the driver air bag assembly.

WARNING: WHEN STORING A LIVE AIR BAG ASSEMBLY OR WHEN LEAVING A LIVE INFLATOR MODULE UNATTENDED ON A BENCH OR OTHER SURFACE, ALWAYS FACE THE BAG AND TRIM COVER UP AND AWAY FROM THE SURFACE. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. FAILURE TO FOLLOW PROCEDURES MAY RESULT IN PERSONAL INJURY.

26. Temporarily store the driver air bag assembly with its trim cover facing up, away from the surface upon which it rests.

Deployment Outside Vehicle (Passenger Air Bag Assembly)

WARNING: FAILURE TO FOLLOW PROPER SRS AIR BAG ASSEMBLY DISPOSAL PROCEDURES CAN RESULT IN AIR BAG DEPLOYMENT WHICH MAY CAUSE PERSONAL INJURY. UNDEPLOYED AIR BAG ASSEMBLIES MUST NOT BE DISPOSED OF THROUGH NORMAL REFUSE CHANNELS. THE UNDEPLOYED AIR BAG ASSEMBLY CONTAINS SUBSTANCES THAT CAN CAUSE SEVERE ILLNESS OR PERSONAL INJURY IF THE SEALED CONTAINER IS DAMAGED DURING DISPOSAL. DISPOSAL IN ANY MANNER INCONSISTENT WITH PROPER PROCEDURES MAY BE A VIOLATION OF FEDERAL, STATE AND/OR LOCAL LAWS.

Deployment out of the vehicle is proper when the vehicle is to be returned to service. This includes, for example, situations in which a functionally or cosmetically deficient air bag assembly is replaced. Deployment and disposal of an air bag assembly is, of course, subject to any required retention period.

For deployment of a live air bag assembly out of the vehicle, the deployment procedure must be followed exactly. Always wear safety glasses during this deployment procedure until the deployed air bag assembly is scrapped. Before performing the procedures, you should be familiar with servicing the SRS system and with proper handling of the air bag assembly. Procedures should be read fully before they are performed.

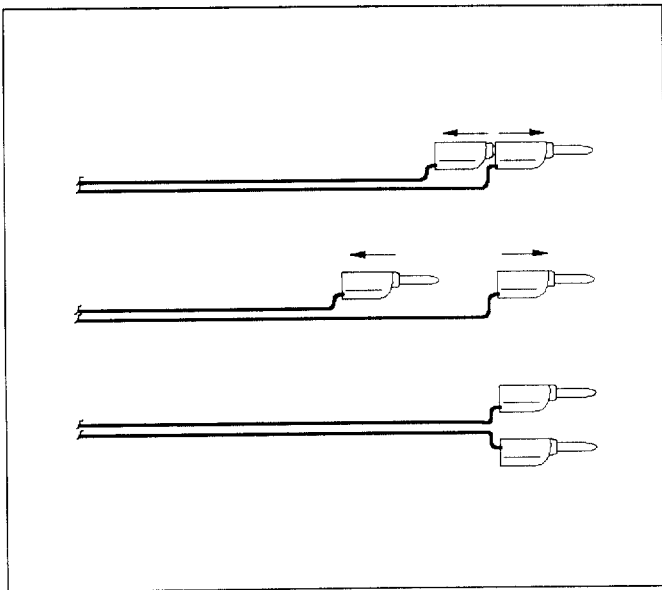
The following procedure requires use of 5-8840-2468-0 SRS Deployment Harness with the appropriate pigtail adapter. The procedure also requires the use of 5-8840-2420-0 Passenger Side SRS Module Deployment Fixture. Do not attempt this procedure without 5-8840-2468-0 and adapter, and 5-8840-2420-0.

WARNING: FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED MAY RESULT IN PERSONAL

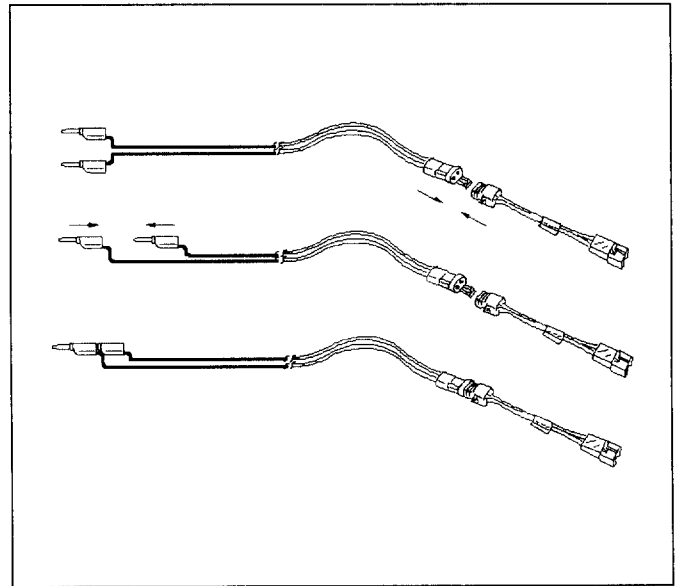
INJURY. NEVER CONNECT DEPLOYMENT HARNESS TO ANY POWER SOURCE BEFORE CONNECTING DEPLOYMENT HARNESS TO THE AIR BAG ASSEMBLY. DEPLOYMENT HARNESS SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. WEAR SAFETY GLASSES THROUGHOUT THIS ENTIRE DEPLOYMENT AND DISPOSAL PROCEDURE.

NOTE: This information applies only to passenger air bag assembly. Information for disposing of a live driver air bag assembly can be found in "Deployment Outside Vehicle" (Driver Air Bag Assembly) in this section.

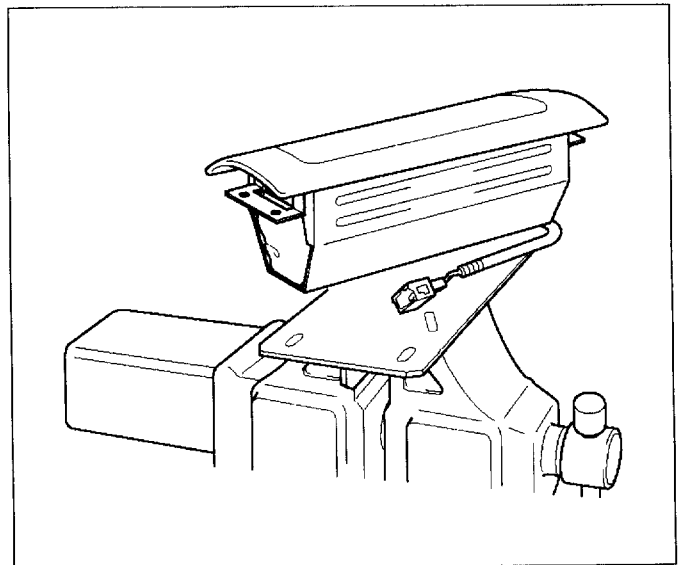
1. Turn ignition switch to "LOCK" remove key, and put on safety glasses.
2. Inspect 5-8840-2468-0 SRS Deployment Harness and appropriate pigtail adapter for damage. If harness or pigtail is damaged, discard and obtain a replacement.
3. Short the two SRS Deployment Harness leads together by fully seating one banana plug into the other. The SRS Deployment Harness shall remain shorted and not be connected to a power source until the air bag is to be deployed.



4. Connect the appropriate pigtail adapter to the SRS Deployment Harness



5. Remove passenger air bag assembly from vehicle. Refer to "Passenger Air Bag Assembly Removal".
6. Clear a space on the ground approximately 183 cm (six feet) in diameter where the fixture with attached air bag assembly is to be placed for deployment. A paved outdoor location where there is no activity is preferred. If an outdoor location is not available, a space on the shop floor where there is no activity and sufficient ventilation is recommended. Ensure that no loose or flammable objects are within the deployment area.
7. Place the 5-8840-2420-0 on the bench vice. This is necessary to provide sufficient stabilization of the fixture during deployment.
8. Attach the passenger air bag assembly in the 5-8840-2420-0. An air bag assembly must be mounted such that the bag will deploy upward. **SECURELY HAND-TIGHTEN ALL FASTENERS PRIOR TO DEPLOYMENT.**



9. Stretch the SRS Deployment Harness and pigtail adapter from the air bag assembly to its full length.
10. Place a power source near the shorted end of the SRS deployment harness. (Recommended application: 12 volts minimum, 2 amps minimum. A vehicle battery is suggested.)
11. Connect the air bag assembly to the pigtail adapter on the SRS deployment harness. The SRS Deployment Harness shall remain shorted and not be connected to a power source until the air bag is to be deployed. The air bag assembly will immediately deploy the air bag when a power source is connected to it.

NOTE: Ensure that the pigtail adapter is firmly seated into the air bag assembly connector. Failure to fully seat the connectors may leave the shorting bar located in the air bag assembly connector functioning (shorting the deployment circuit) and may result in nondeployment of the air bag assembly.

12. Verify that the area around the passenger air bag assembly is clear of all people and loose or flammable objects.
13. Verify that the passenger air bag assembly is firmly and properly in 5-8840-2420-0.
14. Notify all people in the immediate area of your intention to deploy the passenger air bag assembly. The deployment will be accompanied by a substantial noise which may startle the uninformed.
15. Separate the two banana plugs on the SRS deployment harness.

NOTE: When air bag deploys, the rapid gas expansion will create a substantial noise. Notify all people in the immediate area that you intend to deploy the air bag assembly.

WARNING: DEPLOYMENT HARNESS SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. CONNECTING THE DEPLOYMENT HARNESS TO THE POWER SOURCE SHOULD ALWAYS BE THE LAST STEP IN THE AIR BAG ASSEMBLY DEPLOYMENT PROCEDURE. FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED MAY RESULT IN PERSONAL INJURY.

16. Connect the SRS deployment harness wires to the power source to immediately deploy the air bag assembly. Recommended application : 12 volts minimum, 2 amps minimum. A vehicle battery is suggested.
17. Disconnect the SRS deployment harness from the power source.
18. Short the two SRS deployment harness leads together by fully seating one banana plug into the other.

19. In the unlikely event that the passenger air bag assembly did not deploy after following these procedures, proceed immediately with Steps 24 through 26. If the passenger air bag assembly deployed as intended, proceed with Steps 20 through 23.
20. The passenger inflator requires no special precaution after deployment. 95% of the particulate emission are potassium chloride (KLC), which is commonly sold as an edible salt-substitutes. even if water is applied. Post deployment products are relatively pH neutral. Disposing the inflator by burying it in a landfill will not produce any hazardous products. As with any dusty environment, safety goggles, dust mask and gloves should be worn.

WARNING: SAFETY PRECAUTIONS MUST BE OBSERVED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE METAL SURFACES OF THE AIR BAG ASSEMBLY WILL BE HOT. ALLOW THE AIR BAG ASSEMBLY TO COOL BEFORE HANDLING ANY METAL PORTION OF IT. DO NOT PLACE THE DEPLOYED INFLATOR MODULE NEAR ANY FLAMMABLE OBJECTS. FAILURE TO FOLLOW PROCEDURES MAY RESULT IN FIRE OR PERSONAL INJURY. AFTER AN AIR BAG ASSEMBLY HAS BEEN DEPLOYED, THE METAL CANISTER AND SURROUNDING AREAS OF THE AIR BAG ASSEMBLY WILL BE HOT. DO NOT TOUCH THE METAL AREAS OF THE AIR BAG ASSEMBLY FOR ABOUT THIRTY MINUTES AFTER DEPLOYMENT. IF THE DEPLOYED AIR BAG ASSEMBLY MUST BE MOVED BEFORE IT IS COOL, WEAR GLOVES AND HANDLE BY THE AIR BAG ITSELF.

21. Disconnect the pigtail adapter from the air bag assembly as soon after deployment as possible to avoid damage to the pigtail adapter or SRS deployment harness from contacting the hot air bag assembly canister. The pigtail adapter and SRS deployment harness are designed to be reused. They should, however, be inspected for damage after each deployment and replaced if necessary.
22. Dispose of the deployed air bag assembly through normal refuse channels after it has cooled for at least 30 minutes.
23. Wash your hands with mild soap and water afterward.

NOTE: The remaining steps are to be followed in the unlikely event that the air bag assembly did not deploy after following the above procedures.

24. Ensure that the SRS deployment harness has been disconnected from the power source and that its two banana plugs have been shorted together by fully seating one banana plug into the other.
25. Disconnect the pigtail adapter from the air bag assembly.

WARNING: WHEN STORING A LIVE AIR BAG ASSEMBLY OR WHEN LEAVING A LIVE AIR BAG ASSEMBLY UNATTENDED ON A BENCH OR OTHER SURFACE, ALWAYS FACE THE BAG UP AND AWAY FROM THE SURFACE. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. FAILURE TO FOLLOW PROCEDURES MAY RESULT IN PERSONAL INJURY.

26. Temporarily store the air bag assembly with the bag facing up, away from the surface upon which it rests.

Deployment Inside Vehicle (Vehicle Scrapping Procedure)

Deployment inside vehicle is proper when the vehicle is to be destroyed or salvaged for component parts. This includes, but is not limited to, the following situations:

1. The vehicle has completed its useful life.
2. The vehicle has been damaged beyond repair in a nondeployment type accident.
3. The vehicle has been stripped or damaged beyond repair in a theft.
4. The vehicle will be salvaged for component parts to be used on a vehicle with a different Vehicle Identification Number (VIN) as opposed to being rebuilt as same VIN. Never use SRS components from another vehicle.

WARNING: FAILURE TO FOLLOW PROPER SRS AIR BAG ASSEMBLY DISPOSAL PROCEDURES CAN RESULT IN AIR BAG DEPLOYMENT WHICH MAY CAUSE PERSONAL INJURY. UNDEPLOYED AIR BAG ASSEMBLIES MUST NOT BE DISPOSED OF THROUGH NORMAL REFUSE CHANNELS. THE UNDEPLOYED AIR BAG ASSEMBLY CONTAINS SUBSTANCES THAT CAN CAUSE SEVERE ILLNESS OR PERSONAL INJURY IF THE SEALED CONTAINER IS DAMAGED DURING DISPOSAL. DISPOSAL IN ANY MANNER INCONSISTENT WITH PROPER PROCEDURES MAY BE A VIOLATION OF FEDERAL, STATE AND/OR LOCAL LAWS.

1. Turn ignition switch to "LOCK," remove key and put on safety glasses.
2. Remove all loose objects from front seats.
3. Disconnect driver air bag assembly, yellow 2-pin connector located at the base of the steering column.
4. Cut the driver air bag assembly yellow 2-pin harness connector from the vehicle leaving at least 15 cm (six inches) of wire at the connector.
5. Strip 13 mm (1/2 inch) of insulation from yellow – green and yellow – black wire lead of the connector.
6. Cut two 900 cm (30 feet) deployment wires from 0.8 mm² (18 gauge) or thicker multi-strand wire. These wires will be used to fabricate the driver deployment harness.

7. Strip 13 mm (1/2 inch) of insulation from both ends of the wires cut in the previous step.
8. Short the wires by twisting together one end from each. Deployment wires shall remain shorted and not be connected to a power source until the air bag is to be deployed.

WARNING: FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED COULD RESULT IN PERSONAL INJURY. NEVER CONNECT DEPLOYMENT WIRES TO ANY POWER SOURCE BEFORE CONNECTING DEPLOYMENT WIRES TO THE AIR BAG ASSEMBLY LEADS. DEPLOYMENT WIRES SHALL REMAIN SHORTED AND BE NOT CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. WEAR SAFETY GLASSES THROUGHOUT THIS ENTIRE DEPLOYMENT AND DISPOSAL PROCEDURE.

9. Twist together one connector wire lead to one deployment wire. The connection should be mechanically secure.
10. Bend twisted connection made in the previous step flat and wrap tightly with electrical tape to insulate and secure.
11. Twist together, bend and tape the remaining connector wire lead to the remaining deployment wire.
12. Connect the deployment harness to the driver air bag assembly, yellow 2-pin connector at the base of the steering column. Route deployment harness out the driver side of the vehicle.

WARNING: DEPLOYMENT WIRES SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT.

Connecting the deployment wires to the power source should always be the final step in the air bag assembly deployment procedure.

Failure to follow procedures in the order listed could result in personal injury.

13. Disconnect passenger air bag assembly, yellow 2-pin connector located behind glove box assembly.
14. Cut the passenger air bag assembly harness connector from the vehicle leaving at least 15 cm (six inches) of wire at the connector.
15. Strip 13 mm (1/2 inch) of insulation from blue-white and pink-blue wire lead of the connector.
16. Cut two 900 cm (30 feet) deployment wires from 0.8 mm² (18 gauge) or thicker multi-strand wire. These wires will be used to fabricate the passenger deployment harness.
17. Strip 13 mm (1/2 inch) of insulation from both ends of the wires cut in the previous step.

18. Short the wires by twisting together one end from each. Deployment wires shall remain shorted and not be connected to a power source until the air bag is to be deployed.

WARNING: FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED COULD RESULT IN PERSONAL INJURY. NEVER CONNECT DEPLOYMENT WIRES TO ANY POWER SOURCE BEFORE CONNECTING DEPLOYMENT WIRES TO THE AIR BAG ASSEMBLY LEADS. DEPLOYMENT WIRES SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. WEAR SAFETY GLASSES THROUGHOUT THIS ENTIRE DEPLOYMENT AND DISPOSAL PROCEDURE.

19. Twist together one connector wire lead to one deployment wire. The connection should be mechanically secure.
20. Bend twisted connection made in the previous step flat and wrap tightly with electrical tape to insulate and secure.
21. Twist together, bend and tape the remaining connector wire lead to the remaining deployment wire.
22. Connect the deployment harness to the passenger air bag assembly, yellow 2-pin connector located behind the glove box assembly. Route deployment harness out the passenger side of the vehicle.

WARNING: DEPLOYMENT WIRES SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. CONNECTING THE DEPLOYMENT WIRES SHOULD ALWAYS BE THE FINAL STEP IN THE AIR BAG ASSEMBLY DEPLOYMENT PROCEDURE. FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED COULD RESULT IN PERSONAL INJURY.

23. Verify that the inside of the vehicle and the area surrounding the vehicle are clear of all people and loose or flammable objects.
24. Stretch the driver and passenger deployment harness to their full length.
25. Completely cover windshield area and front door window openings with a drop cloth, blanket or similar item. This reduces the possibility of injury due to possible fragmentation of the vehicle's glass or interior.
26. Notify all people in the immediate area that you intend to deploy the air bags. The deployment will be accompanied by a substantial noise which may startle the uninformed.
27. Separate the two ends of the driver deployment harness wires.

WARNING: DEPLOYMENT WIRES SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. CONNECTING THE DEPLOYMENT WIRES TO THE POWER SOURCE SHOULD ALWAYS BE THE FINAL STEP IN THE AIR BAG ASSEMBLY DEPLOYMENT PROCEDURE. FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED COULD RESULT IN PERSONAL INJURY.

NOTE: When the air bag deploys, the rapid gas expansion will create a substantial noise. Notify all people in the immediate area that you intend to deploy the air bags.

28. Connect the driver deployment harness wires to a power source to immediately deploy the driver air bag assembly. Recommended application: 12 volts minimum, 2 amps minimum. A vehicle battery is suggested.
29. Separate the two ends of the passenger deployment harness wires.

WARNING: DEPLOYMENT WIRES SHALL REMAIN SHORTED AND NOT BE CONNECTED TO A POWER SOURCE UNTIL THE AIR BAG IS TO A POWER SOURCE UNTIL THE AIR BAG IS TO BE DEPLOYED. THE AIR BAG ASSEMBLY WILL IMMEDIATELY DEPLOY THE AIR BAG WHEN A POWER SOURCE IS CONNECTED TO IT. CONNECTING THE DEPLOYMENT WIRES TO THE POWER SOURCE SHOULD ALWAYS BE THE FINAL STEP IN THE AIR BAG ASSEMBLY DEPLOYMENT PROCEDURE. FAILURE TO FOLLOW PROCEDURES IN THE ORDER LISTED COULD RESULT IN PERSONAL INJURY.

30. Connect the passenger deployment harness wires to a power source to immediately deploy the passenger air bag assembly. Recommended application: 12 volts minimum, 2 amps minimum. A vehicle battery is suggested. (Driver air bag assembly) Put on a pair of shop gloves and safety glasses to protect your hands and eyes from possible irritation and heat when handling the deployed air bag assembly. After an air bag assembly has been deployed, the surface of the air bag may contain a powdery residue. This powder consists primarily of cornstarch (used to lubricate the bag as it inflates) and by products of the chemical reaction. Sodium hydroxide dust (similar to lye soap) is produced as a by product of the deployment reaction. The sodium hydroxide then quickly reacts with atmospheric moisture and is converted to sodium carbonate and sodium bicarbonate (baking soda). Therefore, it is unlikely that sodium hydroxide will be present after deployment. (Passenger air bag assembly) The

passenger inflator requires no special precaution after deployment. 95% of the particulate emission are potassium chloride (KLC), which is commonly sold as an edible salt-substitutes. even if water is applied. Post deployment products are relatively pH neutral. Disposing the inflator by burying it in a landfill will not products any hazardous products. As with any dusty environment, safety goggles, dust mask and gloves should be worn.

WARNING: SAFETY PRECAUTIONS MUST BE OBSERVED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE METAL SURFACES OF THE AIR BAG ASSEMBLY WILL BE VERY HOT. ALLOW THE AIR BAG ASSEMBLY TO COOL BEFORE HANDLING ANY METAL PORTION OF IT. DO NOT PLACE THE HOT DEPLOYED AIR BAG ASSEMBLY NEAR ANY FLAMMABLE OBJECTS. FAILURE TO FOLLOW PROCEDURES COULD RESULT IN FIRE OR PERSONAL INJURY.

After an air bag assembly has been deployed, the metal canister and surrounding areas of the air bag assembly will be very hot. Do not touch the metal areas of the air bag assembly for about 30 minutes after deployment. If the deployed air bag assembly must be moved before it is cool, wear gloves and handle by the air bag or trim cover.

31. Short the driver deployment harness wires by twisting together one end from each. Repeat this procedure for the passenger deployment harness.
32. Carefully remove drop cloth from vehicle and clean off any fragments or discard drop cloth entirely.
33. Disconnect driver deployment harness and passenger deployment harness from vehicle and discard.
34. In the unlikely event that either or both of the air bag assemblies did not deploy after following these procedures, proceed immediately with Steps 36 through 37. If the air bag assembly deployed, proceed to step 35.
35. With both air bags deployed, the vehicle may be scrapped in the same manner as a non-SRS equipped vehicle.

NOTE: The remaining steps are to be followed in the unlikely event that the air bag assembly did not deploy after following these procedures.

36. Remove the undeployed air bag assembly (s) from the vehicle. For driver air bag assembly refer to in the "Passenger Air Bag Assembly Removal" in this manual.

WARNING: WHEN STORING A LIVE AIR BAG ASSEMBLY OR WHEN LEAVING A LIVE AIR BAG ASSEMBLY UNATTENDED ON A BENCH OR OTHER SURFACE, ALWAYS FACE THE BAG AND TRIM COVER UP, AWAY FROM THE SURFACE. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG TO EXPAND IN THE

UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. FAILURE TO FOLLOW PROCEDURES COULD RESULT IN PERSONAL INJURY.

37. Temporarily store the air bag assembly with the air bag opening facing up, away from the surface upon which it rests.

Deployed Air Bag Assembly Handling

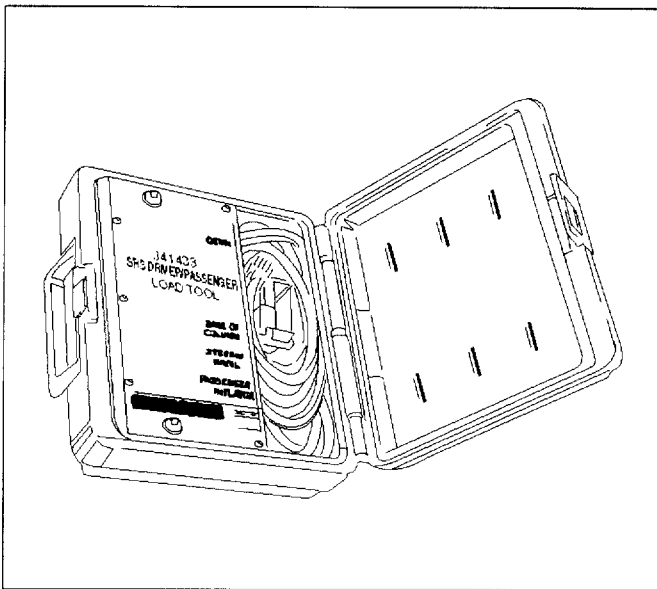
Put on a pair of shop gloves and safety glasses to protect your hands and eyes from possible irritation and heat when handling the deployed air bag assembly.

After the air bag assembly has been deployed, the surface of the air bag may contain a powdery residue. This powder consists primarily of cornstarch (used to lubricate the bag as it inflates) and by products of the chemical reaction. Sodium hydroxide dust (similar to lye soap) is produced as a by product of the deployment reaction. The sodium hydroxide then quickly reacts with atmospheric moisture and is converted to sodium carbonate and sodium bicarbonate (baking soda). Therefore, it is unlikely that sodium hydroxide will be present after deployment.

Special Tools

WARNING: TO AVOID DEPLOYMENT WHEN TROUBLESHOOTING THE SRS, DO NOT USE ELECTRICAL TEST EQUIPMENT SUCH AS A BATTERY-POWERED OR AC-POWERED VOLTMETER, OHMMETER, ETC., OR ANY TYPE OF ELECTRICAL EQUIPMENT OTHER THAN THAT SPECIFIED IN THIS MANUAL. DO NOT USE A NONPOWERED PROBE-TYPE TESTER. INSTRUCTIONS IN THIS MANUAL MUST BE FOLLOWED CAREFULLY, OTHERWISE PERSONAL INJURY MAY RESULT.

5-8840-2421-0 SRS Driver/Passenger Load Tool



The SRS Driver/Passenger Load Tool 5-8840-2421-0 is used only when called for in this section. It is used as a diagnostic aid and safety device to prevent inadvertent air bag assembly deployment.

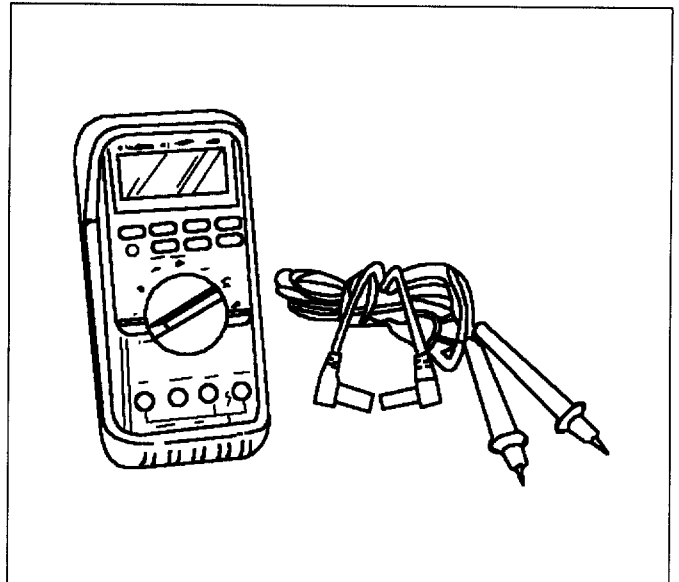
The load tool has three yellow connectors attached to its case.

The three small connectors are electrically functional and serve as resistive load substitutions.

No more than two connectors are used at any time. One of the small connectors is used to substitute for the load of the driver air bag assembly when it is connected at the top of the column to the SRS coil assembly. Another small connector is used to substitute for the load of the driver air bag assembly and the SRS coil assembly when it is connected at the base of the column to the SRS wiring harness. The third small connector is used to substitute for the load of the passenger air bag assembly when connected to the passenger air bag assembly harness connector.

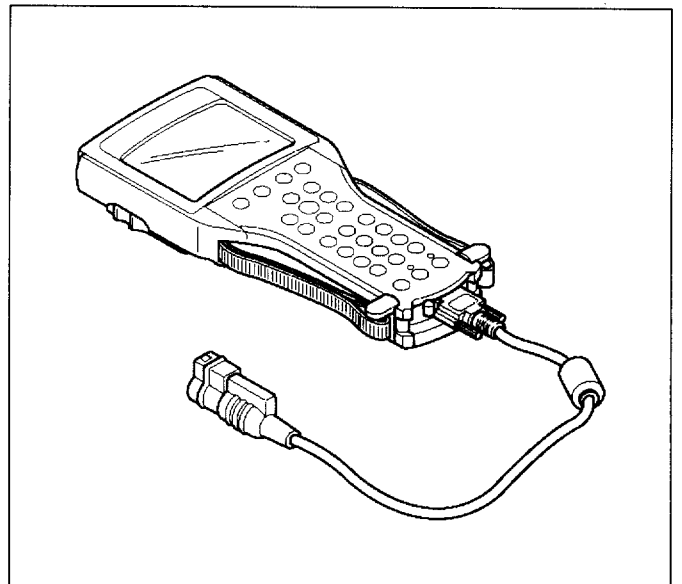
By substituting the resistance of the load tool when called for, a determination can be made as to whether an inflator circuit component is causing system malfunction and which component is causing the malfunction. The load tool should be used only when specifically called for in the diagnostic procedures.

5-8840-0285-0 DVM

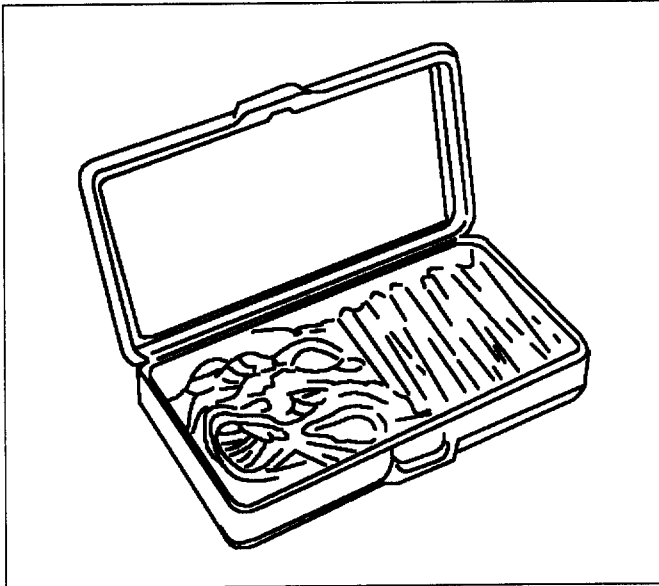


The 5-8840-0285-0 DVM is the preferred DVM for use in SRS diagnosis and repair. However, 5-8840-0366-0 may be used if 5-8840-0285-0 is not available. No other DVMs are approved for SRS diagnosis and repair.

Scan Tool

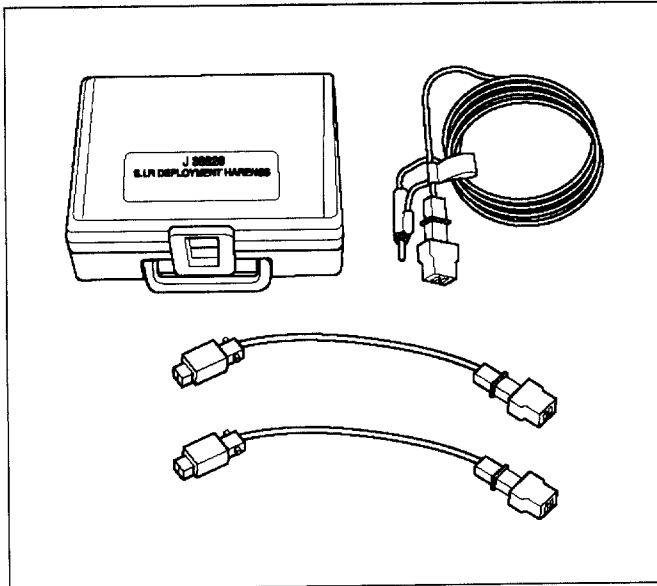


The Tech 2 is used to read and clear SRS Diagnostic Trouble Codes (DTCs). Refer to the Tech 2 Operators, Manual for specific information on how to use the Tech 2.

5-8840-0385-0 Connector Test Adapter Kit

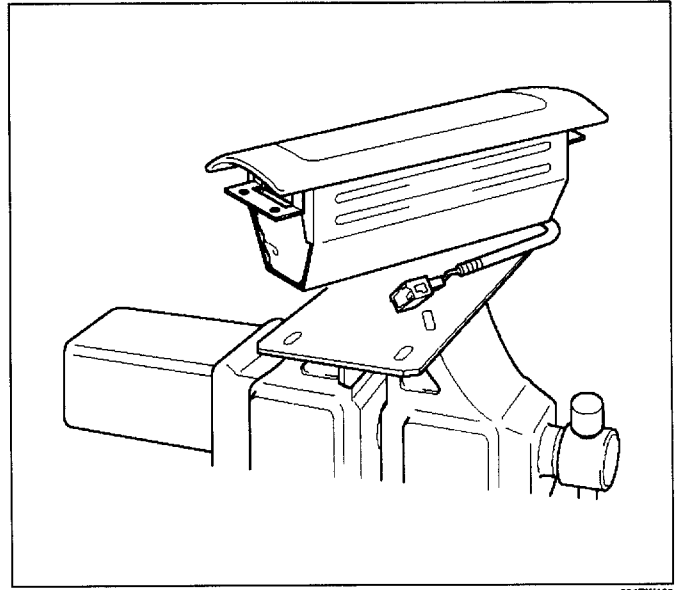
901RB151

The 5-8840-0385-0 Connector Test Adapter Kit must be used whenever a diagnostic procedure requests checking or probing a terminal. Using the appropriate adapter will ensure that no damage to the terminal will occur from the DVM probe, such as spreading or bending. The adapter will also give an idea of whether contact tension is sufficient, helping to find an open or intermittent open due to poor terminal contact.

5-8840-2468-0 SRS Deployment Harness

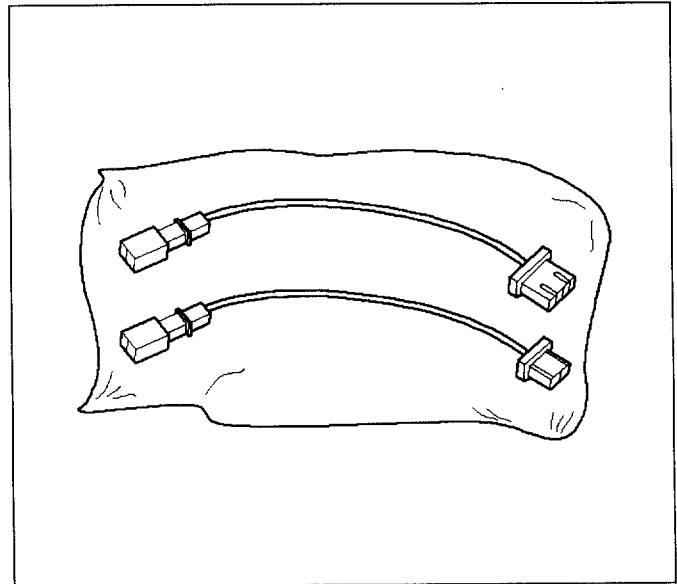
901RW106

The 5-8840-2468-0 SRS Deployment Tool must be used for deployment of the undeployed air bag.

5-8840-2420-0 SRS Deployment Fixture

901RW199

The 5-8840-2420-0 SRS Deployment Fixture must be used for deployment of the undeployed passenger side air bag.

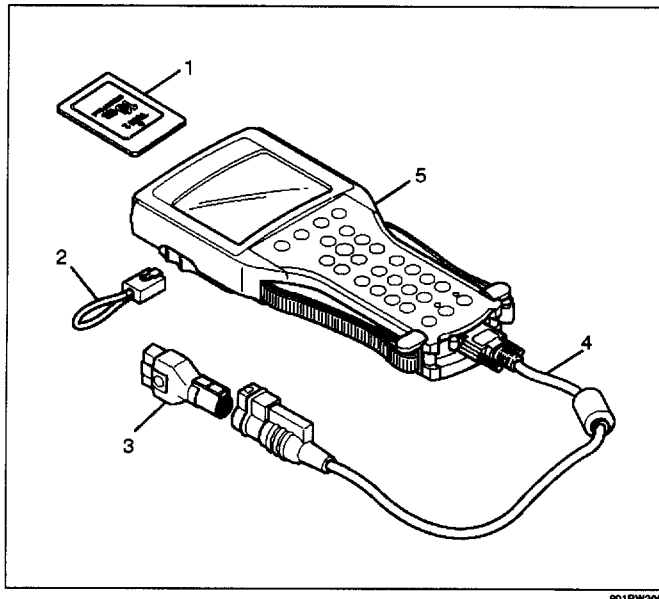
5-8840-2469-0 SRS Adapter for Load Tool.

901RW107

The 5-8840-2469-0 SRS Adapter for Load Tool must be used with 5-8840-2421-0 SRS Driver/Passenger Load Tool.

Tech 2 Scan Tool

From 98 MY, Isuzu dealer service departments are recommended to use Tech 2. Please refer to Tech 2 scan tool user guide.

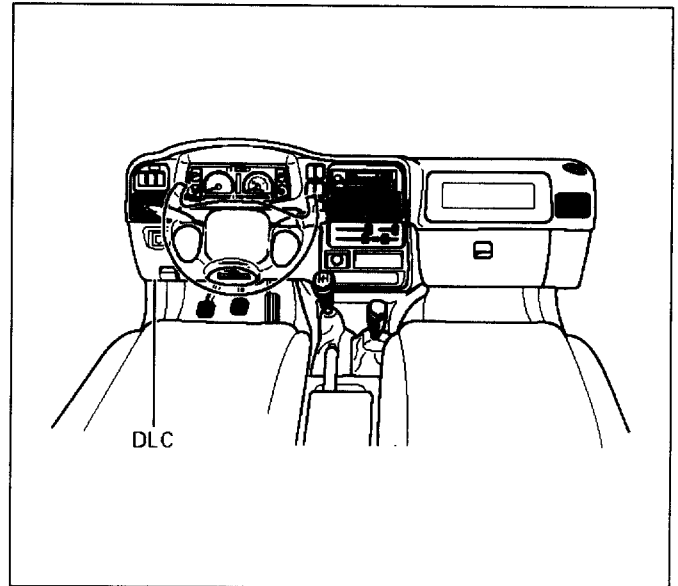


Legend

- (1) PCMCIA Card
- (2) RS 232 Loop Back Connector
- (3) SAE 16/19 Adaptor
- (4) DLC Cable
- (5) Tech-2

Getting Started

- Before operating the Isuzu PCMCIA card with the Tech 2, the following steps must be performed:
 1. Insert the Isuzu 98 System PCMCIA card (1) into the Tech 2 (5).
 2. Connect the SAE 16/19 adaptor (3) to the DLC cable (4).
 3. Connect the DLC cable to the Tech 2 (5)
 4. Make sure of the vehicle ignition is off.
 5. Connect the Tech 2 SAE 16/19 adaptor to the vehicle DLC connector.



6. Turn on the vehicle ignition switch.
7. Verify the Tech 2 power up display.



NOTE: The RS232 Loop back connector is only used to diagnosis Tech 2. Refer to user guide of the Tech 2.

Service Precautions for SRS Component Service

CAUTION: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

WARNING: WHEN PERFORMING SERVICE ON OR AROUND SRS COMPONENTS OR SRS WIRING, FOLLOW THE PROCEDURES LISTED BELOW TO TEMPORARILY DISABLE THE SRS. FAILURE TO FOLLOW PROCEDURES COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY OR OTHERWISE UNNEEDED SRS REPAIRS.

The SDM in Driver-Passenger SRS can maintain sufficient voltage to cause a deployment for up to 15 seconds after the ignition switch is turned "OFF," the battery is disconnected, or the fuse powering the SDM is removed.

Many of the service procedures require removal of the "SRS 2" fuse, and disconnection of the air bag assembly from the deployment loop to avoid an accidental deployment. If the air bag assembly is disconnected from the deployment loop as noted in the "Disabling the SRS" procedure that follows, service can begin immediately without waiting for the 15 second time period to expire.

Disabling The SRS

Removal

Turn the ignition switch to "OFF" and turn the steering wheel so that the vehicle's wheels are pointing straight ahead.

1. Remove SRS fuse "SRS 2" from left dash side lower fuse block or disconnect battery.
2. Disconnect yellow 2-pin connector at the base of steering column.
3. Remove glove box assembly; Refer to "Passenger air bag assembly replacement" in this section.
4. Disconnect passenger air bag assembly yellow 2-pin connector behind the glove box assembly.

CAUTION: With the "SRS 2" fuse removed and ignition switch "ON," the "AIR BAG" warning lamp will be "ON." This is normal operation and does not indicate an SRS malfunction.

Enabling The SRS

Installation

Turn ignition switch to "LOCK" and remove key.

1. Connect yellow 2-pin connector passenger air bag assembly.
2. Install glove box assembly. Refer to "Passenger Air Bag Assembly Replacement" in this section.
3. Connect yellow 2-pin connector at the base of the steering column.
4. Install "AIR BAG" fuse "SRS 2" to left dash side lower fuse block or connect battery.

Turn ignition switch to "ON" and verify that the "AIR BAG" warning lamp flashes seven times and then turns "OFF." If it does not operate as described, perform the "SRS Diagnostic System Check" in this section.

Handling / Installation / Diagnosis

1. Air bag assembly should not be subjected to temperatures above 65°C (150°F).
2. Air bag assembly, and SDM should not be used if they have been dropped from a height of 100 centimeters (3.28 feet) or more.
3. When a SDM is replaced, it must be oriented with the arrow on the SDM pointing toward the front of the vehicle. It is very important for the SDM to be located flat on the mounting surface, parallel to the vehicle datum line. It is important that the SDM mounting surface is free of any dirt or other foreign material.
4. Do not apply power to the SRS unless all components are connected or a diagnostic chart requests it, as this will set a diagnostic trouble code.
5. The "SRS Diagnostic System Check" must be the starting point of any SRS diagnostics. The "SRS Diagnostic System Check" will verify proper "AIR BAG" warning lamp operation and will lead you to the correct chart to diagnose any SRS malfunctions. Bypassing these procedures may result in extended diagnostic time, incorrect diagnosis, and incorrect parts replacements.

Inspections Required After An Accident

CAUTION: Certain SRS components must be replaced after a frontal crash involving air bag deployment.

In all types of accidents regardless of "Air Bag" deployment, visually inspect all of the following components and replace as required:

- Driver air bag assembly
- Passenger air bag assembly
- Steering wheel
- SRS coil assembly
- Steering column
- Knee bolster and instrument panel mounting attachments
- Driver seat and belt
- Passenger seat and belt
- SDM

SDM always should be checked according to "SDM Replacement Guidelines."

CAUTION: Refer to "SDM Replacement Guidelines" below for important information on SDM replacement in both deployment and non-deployment crashes.

Inspect SRS coil assembly wiring and steering wheel for any sign of scorching, melting, or damage due to excessive heat. If coil assembly wire or steering wheel is damaged, replace them. The steering column and wheel must be dimensionally checked to determine if they are damaged. Refer to steering wheel of in this manual.

Never use SRS parts from another vehicle. This does not include remanufactured parts purchased from an authorized Isuzu Retailer; they may be used for SRS repairs.

Do not attempt to repair the SDM, the SRS harness, the SRS coil assembly, the air bag assembly, the steering wheel, or the steering column. Service of these items is replacement only. Verify replacement part numbers.

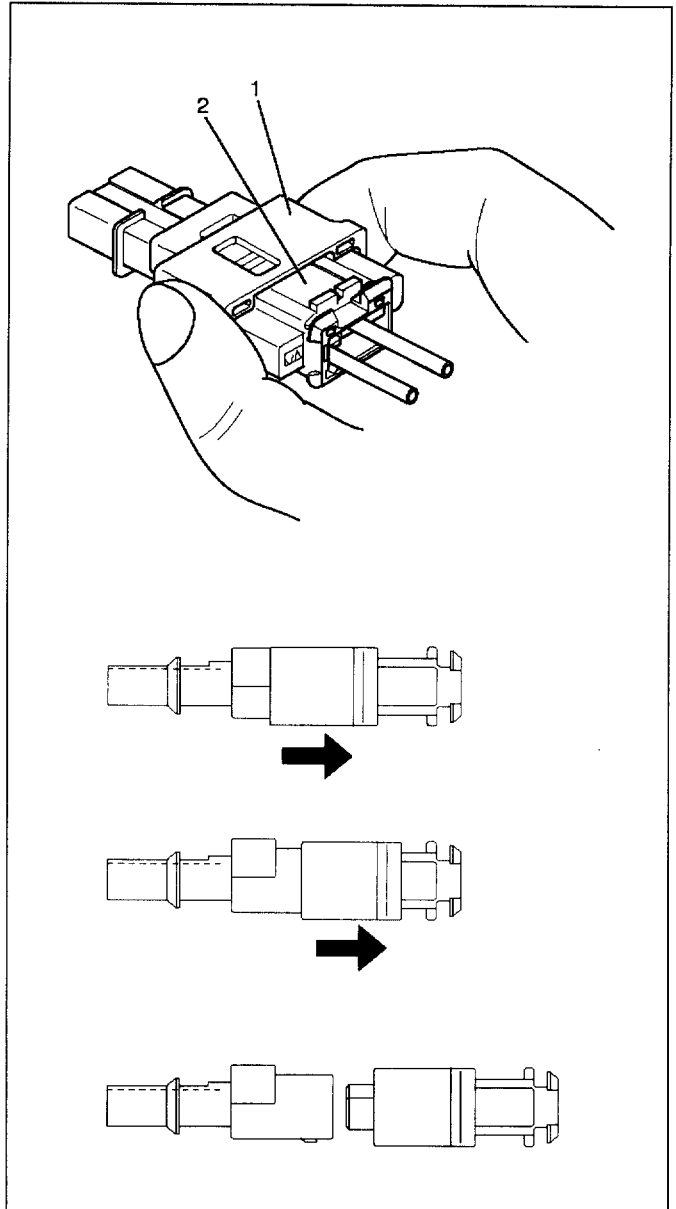
CAUTION: Proper operation of the SDM and supplemental restraint system (SRS) requires that any repairs to the vehicle structure return it to its original production configuration.

SRS Connectors

CAUTION: The special yellow color connectors are used for supplemental restraint system-air bag circuit. When removing the cable harness, do not pull the cables otherwise, cable disconnection may occur. When connect the SRS connector, insert the connector completely. Imperfect locking may cause malfunction of SRS circuit.

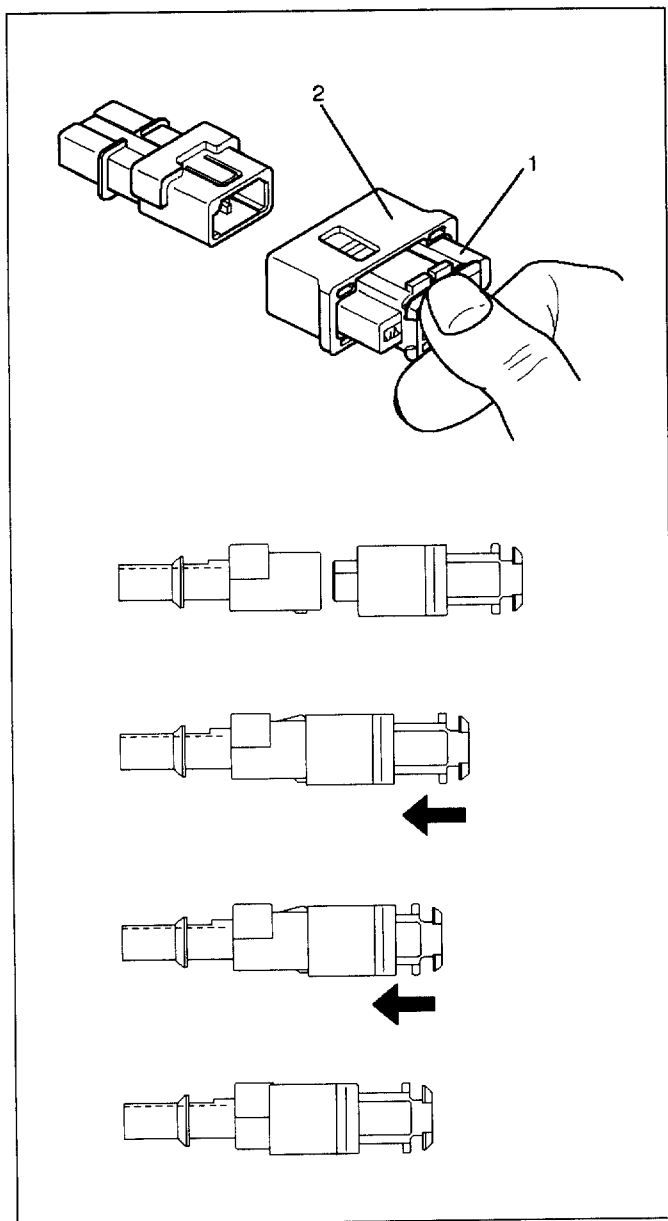
Removal

To remove the connector, hold the cover insulator (1) and pull it. The cover insulator slides and lock will be released. Do not hold the socket insulator (2).



Installation

To install the connector, hold the socket insulator (1) and insert it. The cover insulator slides and connector will be locked. Do not hold the cover insulator (2).



627RW027

Sensing And Diagnostic Module (SDM)

Service Precautions

WARNING: DURING SERVICE PROCEDURES, BE VERY CAREFUL WHEN HANDLING SDM. NEVER STRIKE OR JAR SDM. UNDER SOME CIRCUMSTANCES, IT COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY OR IMPROPER OPERATION OF THE SUPPLEMENTAL RESTRAINT SYSTEM (SRS). SDM MOUNTING BRACKET BOLTS MUST BE CAREFULLY TORQUED TO ASSURE PROPER OPERATION. NEVER POWER UP THE SRS WHEN SDM IS NOT RIGIDLY ATTACHED TO THE VEHICLE. THE SDM COULD BE ACTIVATED WHEN POWERED WHILE NOT RIGIDLY ATTACHED TO THE VEHICLE WHICH COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY.

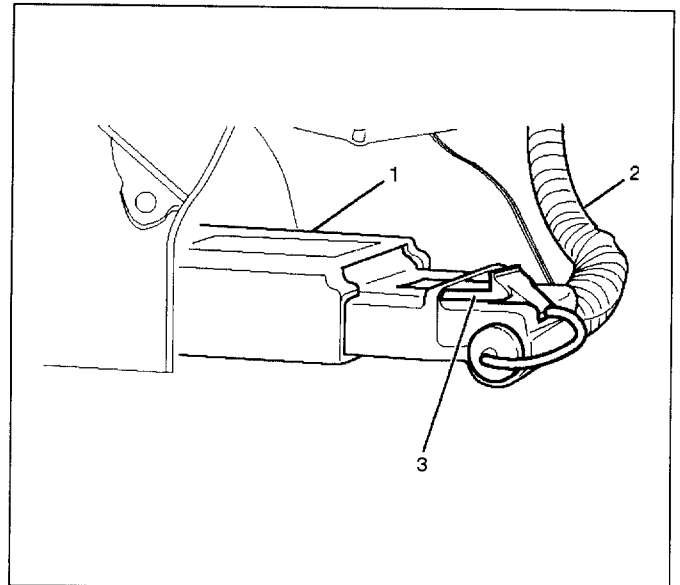
WARNING: PROPER OPERATION OF THE SENSING AND DIAGNOSTIC MODULE (SDM) REQUIRES THE SDM TO BE RIGIDLY ATTACHED TO THE VEHICLE STRUCTURE AND THAT THE ARROW ON THE SENSOR BE POINTING TOWARD THE FRONT OF THE VEHICLE.

SDM is specifically calibrated and is keyed to the SDM location SRS wiring harness. Caution should be used to ensure proper location of the SDM. The keying of the SDM to its location and wiring harness connectors should never be modified in the field.

Removal

1. Disable the SRS (Refer to "Disabling the SRS" in this section).
2. Remove the transmission knob (for M/T) and transfer lever knob.
3. Remove the front console assembly and disconnect wiring harness connector.
4. Pull CPA (Connector Position Assurance) out and push connector lock down to disconnect the SDM harness connector.

5. Remove the three SDM fixing bolts and remove SDM.



Legend

- (1) SDM
- (2) SRS Harness
- (3) Connector Position Assurance

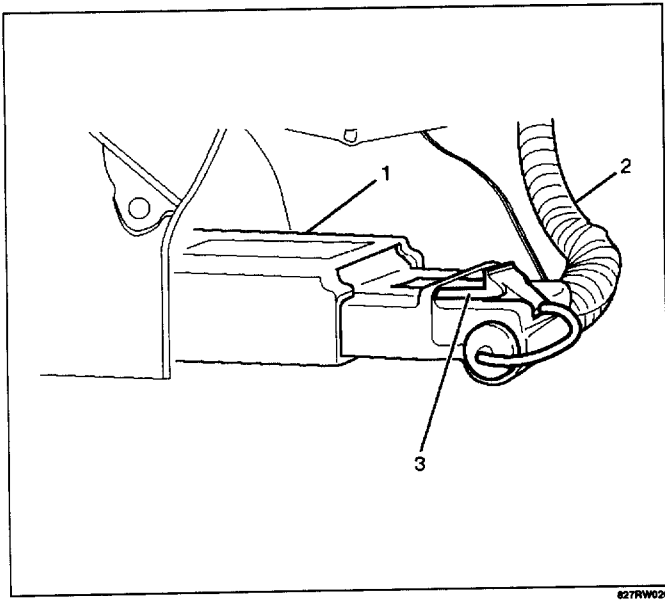
Installation

1. Install the SDM on bracket and fixing bolts and tighten the fixing bolts to the specified torque.

Torque: 10 N·m (100 kg·cm/89 lb in)

2. Connect the SDM harness connector and after that, put CPA into connector.
3. Install the front console.
4. Install the transmission knob (for M/T) and transfer lever knob.

5. Enable the SRS (Refer to "Enabling the SRS" in this section).

**Legend**

- (1) SDM
- (2) SRS Harness
- (3) Connector Position Assurance

Driver Air Bag Assembly

Service Precautions

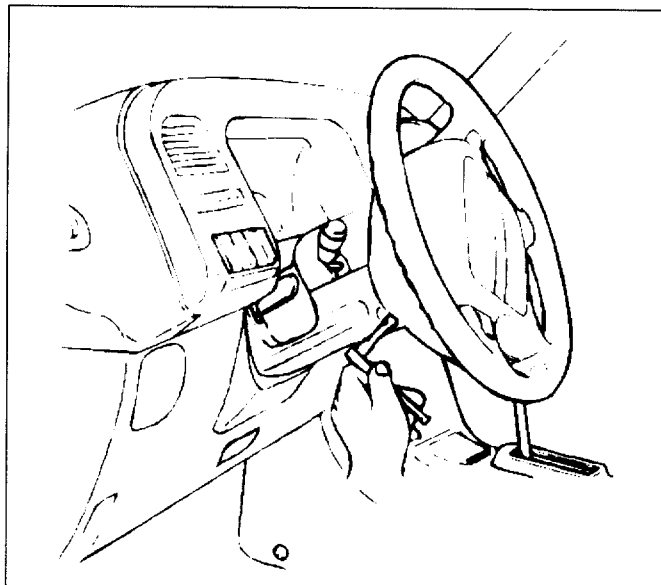
WARNING: SAFETY PRECAUTIONS MUST BE FOLLOWED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE AIR BAG ASSEMBLY SURFACE MAY CONTAIN A SMALL AMOUNT OF SODIUM HYDROXIDE, A BY-PRODUCT OF THE DEPLOYMENT REACTION, THAT IS IRRITATING TO THE SKIN AND EYES. MOST OF THE POWER ON THE AIR BAG ASSEMBLY IS HARMLESS. AS A PRECAUTION, WEAR GLOVES AND SAFETY GLASSES WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY, AND WASH YOUR HANDS WITH MILD SOAP AND WATER AFTERWARDS.

WARNING: WHEN CARRYING A LIVE AIR BAG ASSEMBLY, MAKE SURE THE BAG AND TRIM COVER ARE POINTED AWAY FROM YOU. NEVER CARRY AIR BAG ASSEMBLY BY THE WIRES OR CONNECTOR ON THE UNDERSIDE OF MODULE. IN THE CASE OF AN ACCIDENTAL DEPLOYMENT, THE BAG WILL THEN DEPLOY WITH MINIMAL CHANCE OF INJURY. WHEN PLACING ALIVE AIR BAG ASSEMBLY ON A BENCH OR OTHER SURFACE, ALWAYS FACE BAG AND TRIM COVER UP, AWAY FROM THE SURFACE. NEVER REST A STEERING COLUMN ASSEMBLY ON THE STEERING WHEEL WITH THE AIR BAG ASSEMBLY FACE DOWN AND COLUMN VERTICAL. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG ASSEMBLY TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. OTHERWISE, PERSONAL INJURY COULD RESULT.

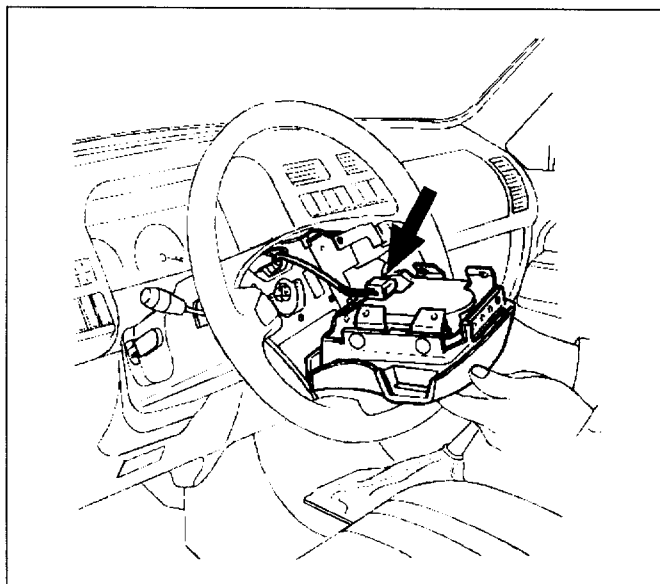
NOTE: In the event deployment has occurred, inspect coil assembly wire for any signs of scorching, melting or any other damage due to excessive heat. If the coil has been damaged, replace it.

Removal

1. Disable the SRS (Refer to "Disabling the SRS" in this section).
2. Loosen the air bag assembly fixing bolts from behind the steering wheel assembly using a TORX® driver or equivalent until the air bag assembly can be released from steering wheel.



3. Disconnect the yellow 2-pin connector located behind the air bag assembly and remove air bag assembly. Refer to "SRS Connectors" in this section for removal and installation.

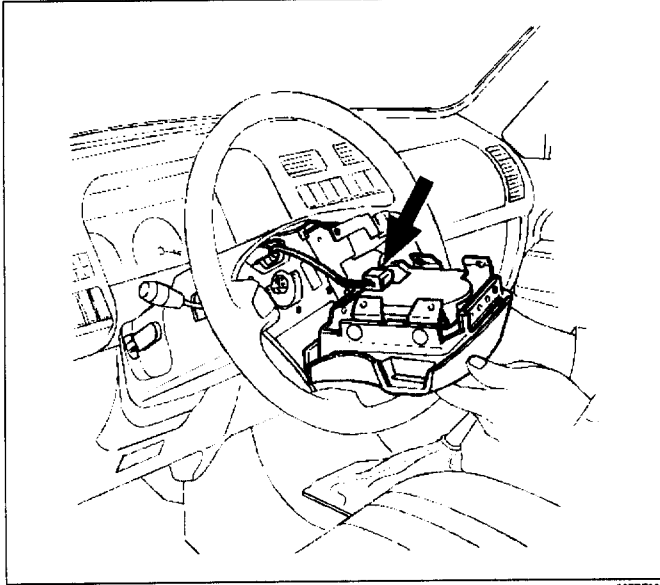


Installation

1. Connect air bag to wiring harness connector.

NOTE: Pass the lead wire through the tabs on the plastic cover (wire protector) of air bag to prevent lead wire from being pinched.

3. Enable the SRS (Refer to "Enabling the SRS" in this section).



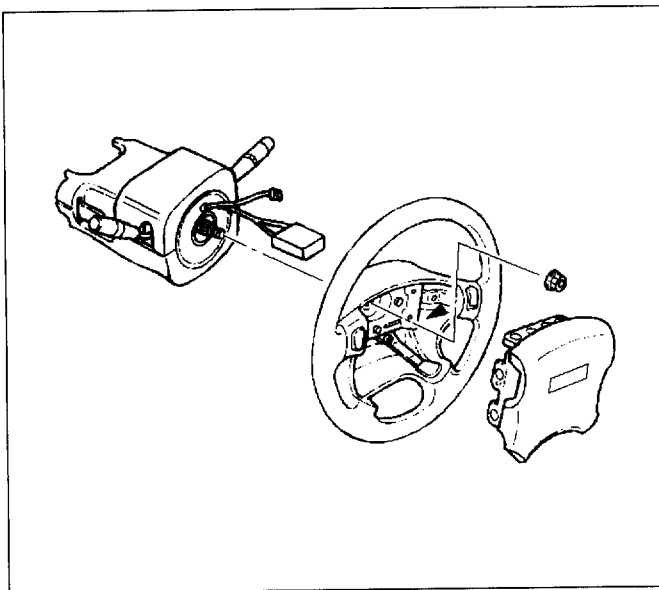
827RT009

2. Install air bag into steering wheel and tighten bolts to specified sequence as shown in figure.

Torque: 8 N·m (81 kg·cm/69 lb in)

CAUTION: Never use the air bag assembly from another vehicle and difference model year air bag assembly.

Use only new air bag assembly proper to the TFR which is being repaired.



827RW007

Steering Wheel

Service Precautions

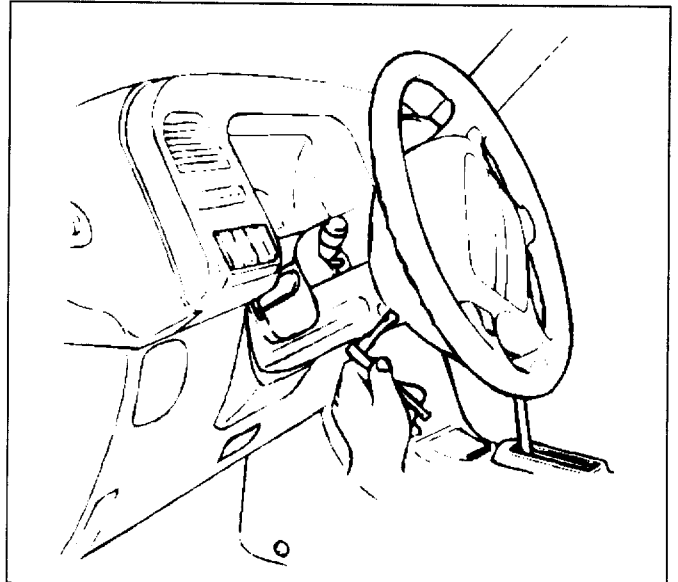
WARNING: SAFETY PRECAUTIONS MUST BE FOLLOWED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE AIR BAG ASSEMBLY SURFACE MAY CONTAIN A SMALL AMOUNT OF SODIUM HYDROXIDE, A BY-PRODUCT OF THE DEPLOYMENT REACTION, THAT IS IRRITATING TO THE SKIN AND EYES. MOST OF THE POWER ON THE AIR BAG ASSEMBLY IS HARMLESS. AS A PRECAUTION, WEAR GLOVES AND SAFETY GLASSES WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY, AND WASH YOUR HANDS WITH MILD SOAP AND WATER AFTERWARDS.

WARNING: WHEN CARRYING A LIVE AIR BAG ASSEMBLY, MAKE SURE THE BAG AND TRIM COVER ARE POINTED AWAY FROM YOU. NEVER CARRY AIR BAG ASSEMBLY BY THE WIRES OR CONNECTOR ON THE UNDERSIDE OF MODULE. IN THE CASE OF AN ACCIDENTAL DEPLOYMENT, THE BAG WILL THEN DEPLOY WITH MINIMAL CHANCE OF INJURY. WHEN PLACING ALIVE AIR BAG ASSEMBLY ON A BENCH OR OTHER SURFACE, ALWAYS FACE BAG AND RIM COVER UP, AWAY FROM THE SURFACE. NEVER REST A STEERING COLUMN ASSEMBLY ON THE STEERING WHEEL WITH THE AIR BAG ASSEMBLY FACE DOWN AND COLUMN VERTICAL. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG ASSEMBLY TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. OTHERWISE, PERSONAL INJURY COULD RESULT.

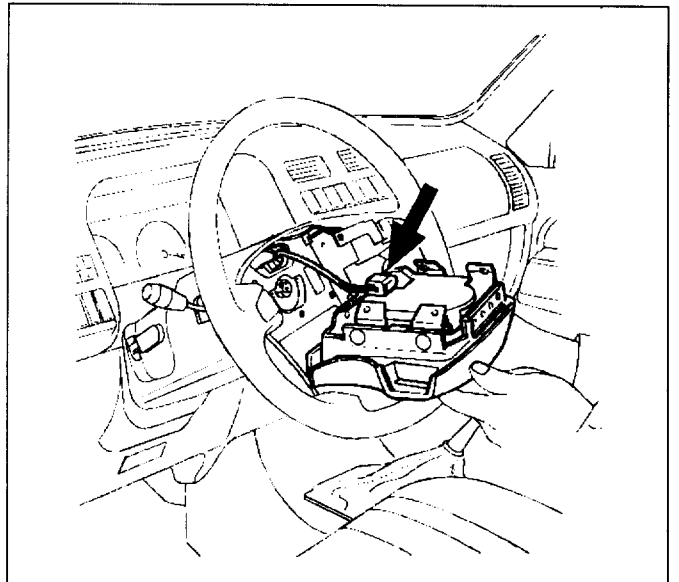
NOTE: In the event deployment has occurred, inspect coil assembly wire for any signs of scorching, melting or any other damage due to excessive heat. If the coil has been damaged, replace it.

Removal

1. Disable the SRS (Refer to "Disabling the SRS" in this section).
2. Loosen the air bag assembly fixing bolts from behind the steering wheel assembly using a TORX® driver or equivalent until the air bag assembly can be released from steering wheel.

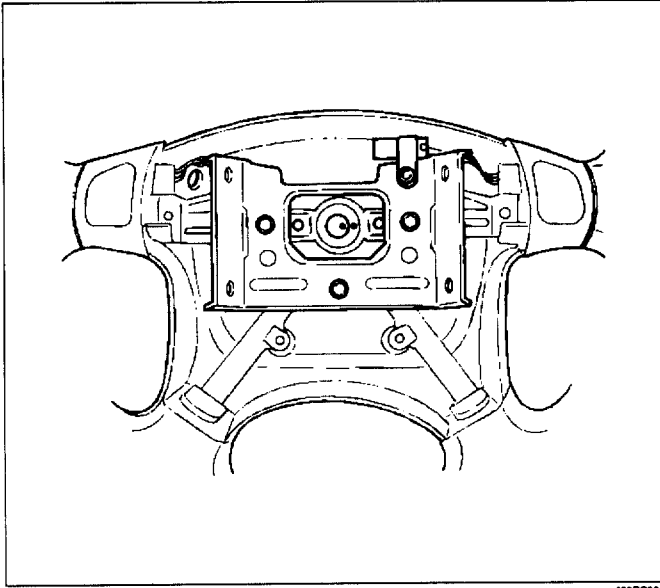


3. Disconnect the yellow 2-pin connector located behind the air bag assembly and remove air bag assembly. Refer to "SRS Connectors" in this section for removal and installation.
4. Disconnect horn lead.

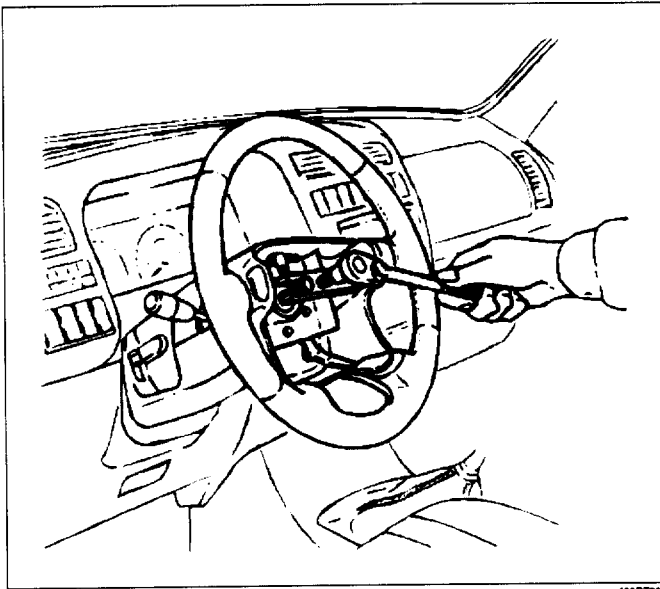


5. Remove steering wheel attachment nut.

6. Apply a setting mark across the steering wheel and shaft so parts can be reassembled in their original position.



7. Move the tires to the straight ahead position before removing the steering wheel. Install steering wheel puller onto steering wheel and remove steering wheel with 5-8521-0016-0.

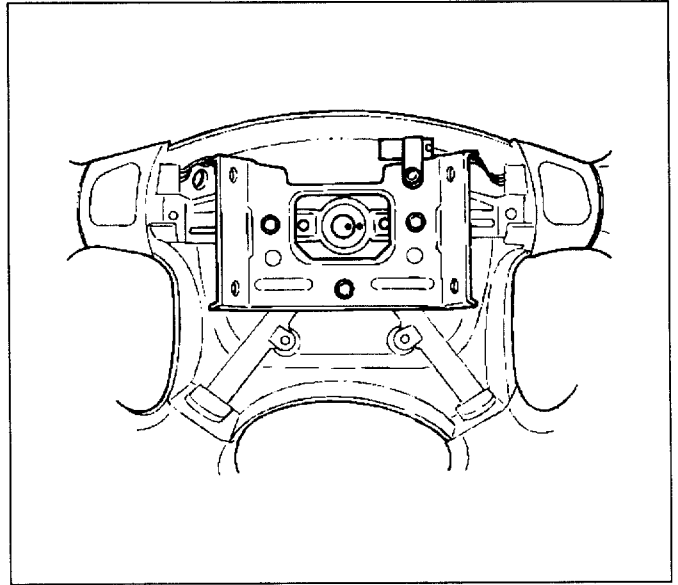


8. Feed wiring through the wheel and remove wheel.

CAUTION: Never apply force to the steering wheel in direction of the shaft by using a hammer or other impact tools in an attempt to remove the steering wheel. The steering shaft is designed as an energy absorbing unit.

Installation

1. Install the steering wheel and align the setting marks.

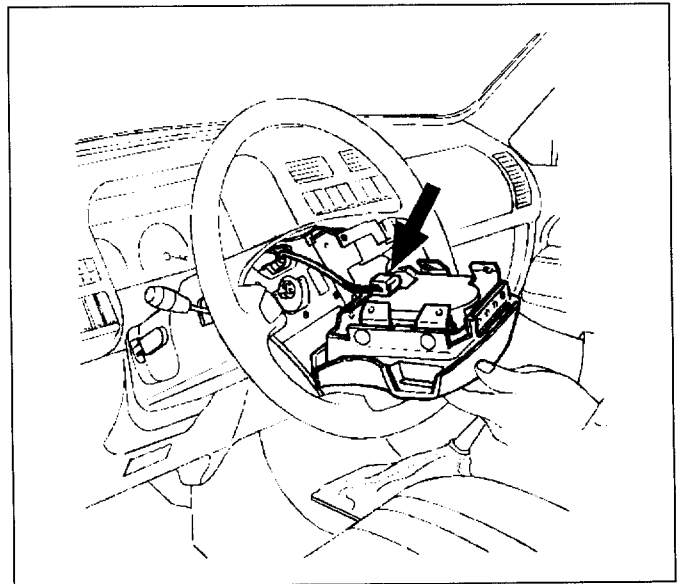


2. Tighten the steering wheel fixing nut to the specified torque.

Torque : 34 N·m (3.5 kg·m/25 lb ft)

3. Connect horn lead.
4. Connect air bag to wiring harness connector.

NOTE: Pass the lead wire through the tabs on the plastic cover (wire protector) of air bag to prevent lead wire from being pinched.

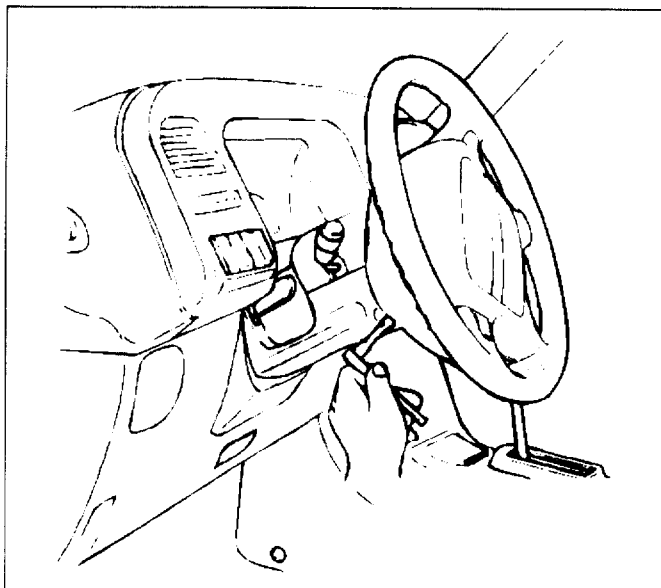


5. Install air bag into steering wheel and tighten bolts to specified sequence as show in figure.

Torque: 8 N·m (81 kg·cm/69 lb in)

CAUTION: Never use the air bag assembly from another vehicle and difference model year air bag assembly.

Use only new air bag assembly proper to the TFR which is being repaired.



6. Enable the SRS (Refer to "Enabling the SRS" in this section).

SRS Coil Assembly

Service Precautions

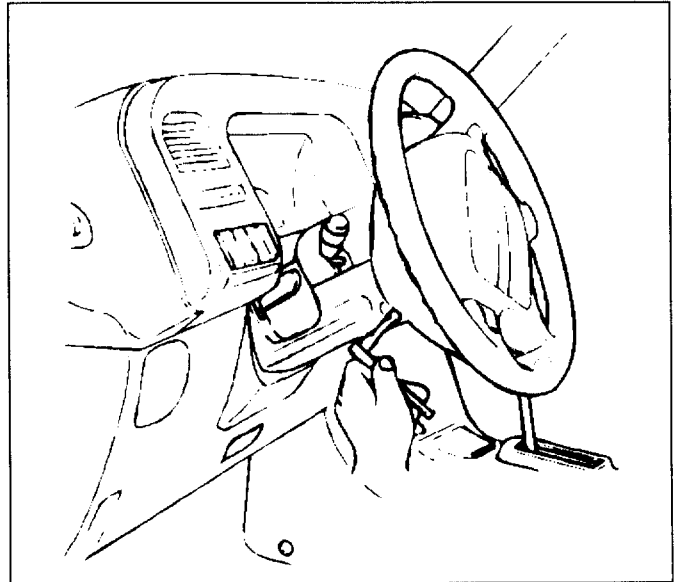
WARNING: SAFETY PRECAUTIONS MUST BE FOLLOWED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE AIR BAG ASSEMBLY SURFACE MAY CONTAIN A SMALL AMOUNT OF SODIUM HYDROXIDE, A BY-PRODUCT OF THE DEPLOYMENT REACTION, THAT IS IRRITATING TO THE SKIN AND EYES. MOST OF THE POWER ON THE AIR BAG ASSEMBLY IS HARMLESS. AS A PRECAUTION, WEAR GLOVES AND SAFETY GLASSES WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY, AND WASH YOUR HANDS WITH MILD SOAP AND WATER AFTERWARDS.

WARNING: WHEN CARRYING A LIVE AIR BAG ASSEMBLY, MAKE SURE THE BAG AND TRIM COVER ARE POINTED AWAY FROM YOU. NEVER CARRY AIR BAG ASSEMBLY BY THE WIRES OR CONNECTOR ON THE UNDERSIDE OF MODULE. IN THE CASE OF AN ACCIDENTAL DEPLOYMENT, THE BAG WILL THEN DEPLOY WITH MINIMAL CHANCE OF INJURY. WHEN PLACING ALIVE AIR BAG ASSEMBLY ON A BENCH OR OTHER SURFACE, ALWAYS FACE BAG AND RIM COVER UP, AWAY FROM THE SURFACE. NEVER REST A STEERING COLUMN ASSEMBLY ON THE STEERING WHEEL WITH THE AIR BAG ASSEMBLY FACE DOWN AND COLUMN VERTICAL. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG ASSEMBLY TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. OTHERWISE, PERSONAL INJURY COULD RESULT.

NOTE: In the event deployment has occurred, inspect coil assembly wire for any signs of scorching, melting or any other damage due to excessive heat. If the coil has been damaged, replace it.

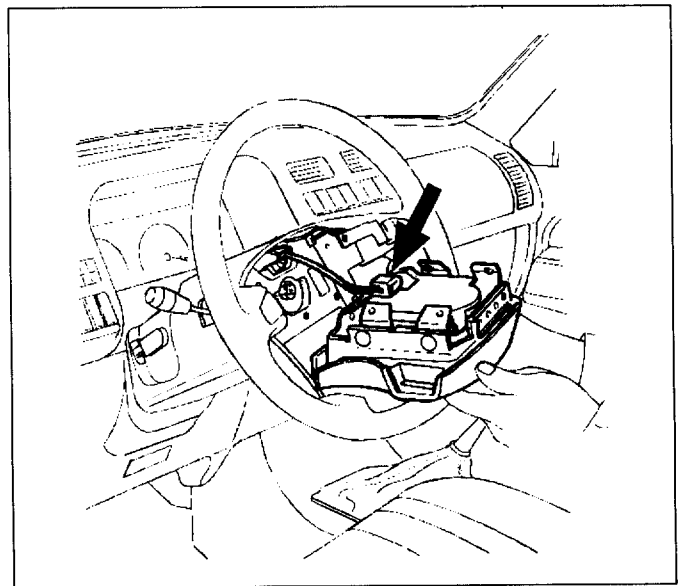
Removal

1. Disable the SRS (Refer to "Disabling the SRS" in this section).
2. Loosen the air bag assembly fixing bolts from behind the steering wheel assembly using a TORX® driver or equivalent until the air bag assembly can be released from steering wheel.



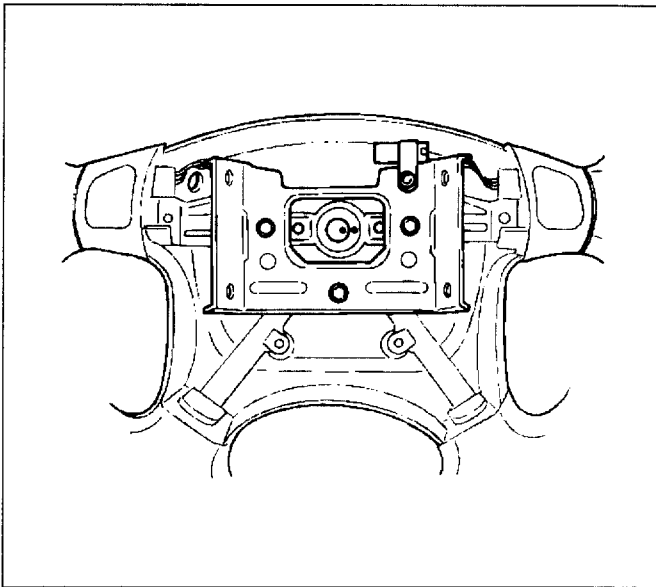
827RT008

3. Disconnect the yellow 2-pin connector located behind the air bag assembly and remove air bag assembly. Refer to "SRS Connectors" in this section for removal and installation.
4. Disconnect horn lead connector.

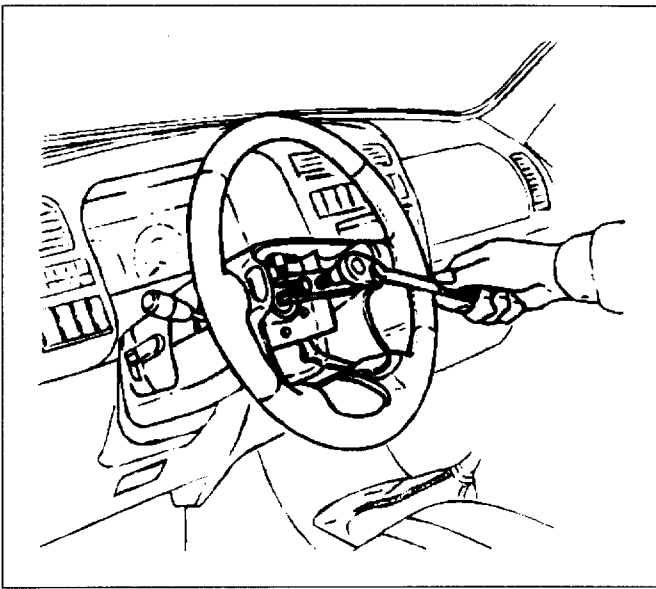


827RT008

5. Remove the steering wheel attachment nut.
6. Apply a setting mark across the steering wheel and shaft so parts can be reassembled in their original position.



7. Move the tires to the straight ahead position before removing the steering wheel and remove wheel with 5-8521-0016-0.



8. Feed wiring through the wheel and remove wheel.
9. Remove the steering lower cover and engine hood opening lever.
10. Remove the driver knee bolster assembly.
11. Remove the steering column cover.

12. Remove air conditioning lower duct.
13. Disconnect the 2-pin wiring harness connectors located at the base of steering column.

CAUTION: Never apply force to the steering wheel in the direction of the shaft by using a hammer or other impact tools in an attempt to remove the steering wheel. The steering shaft is designed as an energy absorbing unit.

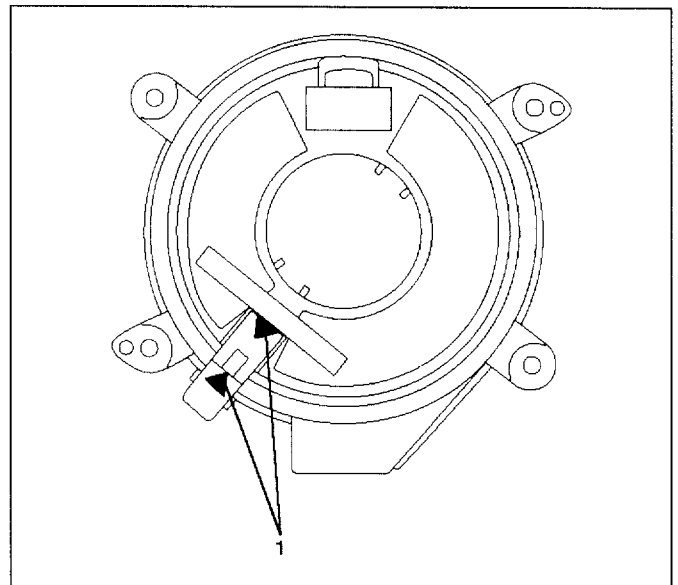
14. Remove the combination switch assembly with SRS coil.

NOTE: SRS coil is a part of combination switch assembly, which cannot be replaced separately. Therefore, be sure not to remove the SRS coil from the combination switch assembly.

Installation

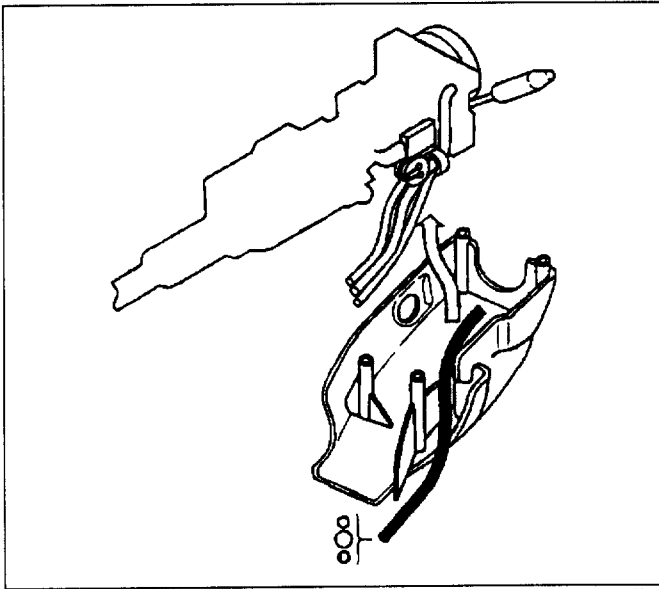
1. Install the combination switch assembly with SRS coil.
2. Turn the SRS coil counterclockwise to full, return about 3 turns and align the neutral mark (1).

CAUTION: When turning the SRS coil counterclockwise to full, stop turning if resistance is felt. Forced further turning may damage the cable in the SRS coil.

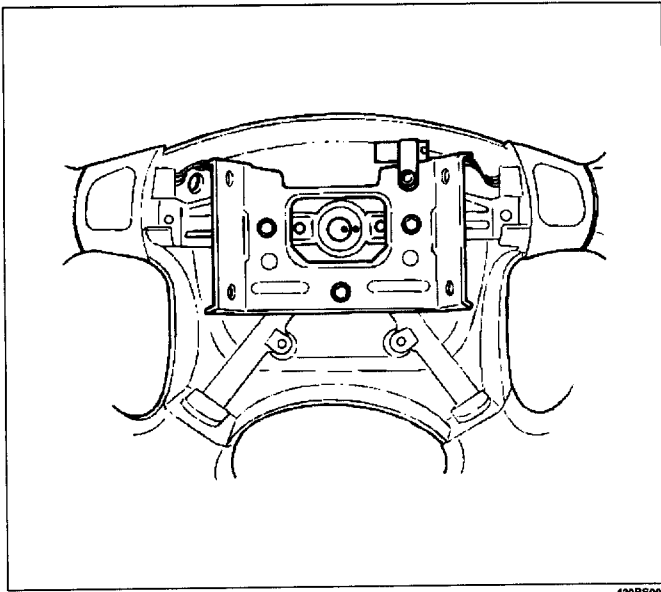


3. Connect the wiring harness connectors located at the base of steering column.
4. Install the air conditioning lower duct.
5. Install the steering column cover.

CAUTION: When installing the steering column cover, be sure to wire (through each harness) as illustrated so that the harness starter switch, combination switch and SRS coil may not catch wiring.



6. Install the driver knee bolster assembly.
7. Install the steering lower cover and engine hood opening lever.
8. Install the steering wheel and align the setting marks.



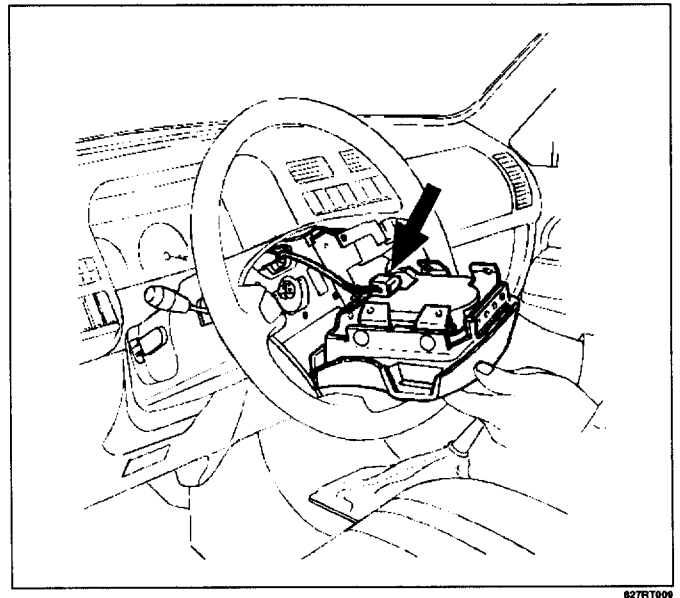
9. Tighten the steering wheel fixing nut to the specified torque.

Torque: 34 N·m (3.5 kg·m/25 lb ft)

10. Connect horn lead.

11. Connect air bag to wiring harness connector.

NOTE: Pass the lead wire through the tabs on the plastic cover (wire protector) of air to prevent lead wire from being pinches.

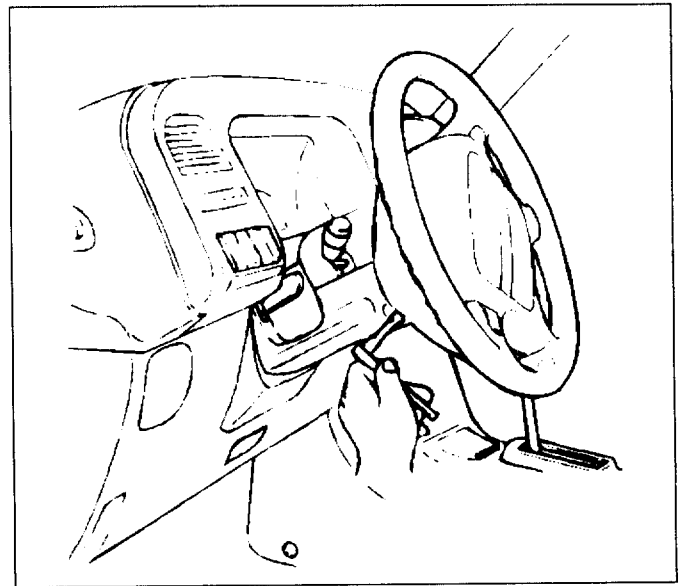


12. Install air bag into steering wheel and tighten bolts to specified sequence as shown in figure.

Torque: 8 N·m (81 kg·cm/69 lb in)

CAUTION: Never use the air bag assembly from another vehicle and difference model year air bag assembly.

Use only new air bag assembly proper to the TFR which is being repaired.



13. Enable the SRS (Refer to "Enabling the SRS" in this section).

Steering Column

Service Precautions

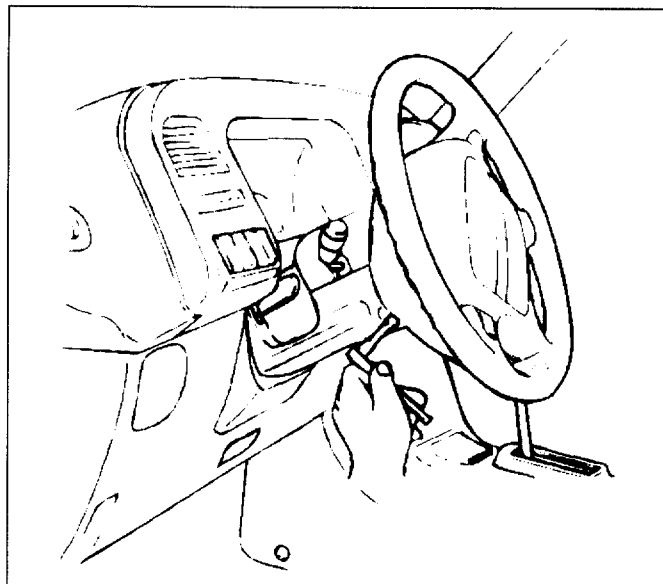
WARNING: SAFETY PRECAUTIONS MUST BE FOLLOWED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE AIR BAG ASSEMBLY SURFACE MAY CONTAIN A SMALL AMOUNT OF SODIUM HYDROXIDE, A BY-PRODUCT OF THE DEPLOYMENT REACTION, THAT IS IRRITATING TO THE SKIN AND EYES. MOST OF THE POWER ON THE AIR BAG ASSEMBLY IS HARMLESS. AS A PRECAUTION, WEAR GLOVES AND SAFETY GLASSES WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY, AND WASH YOUR HANDS WITH MILD SOAP AND WATER AFTERWARDS.

WARNING: WHEN CARRYING A LIVE AIR BAG ASSEMBLY, MAKE SURE THE BAG AND TRIM COVER ARE POINTED AWAY FROM YOU. NEVER CARRY AIR BAG ASSEMBLY BY THE WIRES OR CONNECTOR ON THE UNDERSIDE OF MODULE. IN THE CASE OF AN ACCIDENTAL DEPLOYMENT, THE BAG WILL THEN DEPLOY WITH MINIMAL CHANCE OF INJURY. WHEN PLACING ALIVE AIR BAG ASSEMBLY ON A BENCH OR OTHER SURFACE, ALWAYS FACE BAG AND RIM COVER UP, AWAY FROM THE SURFACE. NEVER REST A STEERING COLUMN ASSEMBLY ON THE STEERING WHEEL WITH THE AIR BAG ASSEMBLY FACE DOWN AND COLUMN VERTICAL. THIS IS NECESSARY SO THAT A FREE SPACE IS PROVIDED TO ALLOW THE AIR BAG ASSEMBLY TO EXPAND IN THE UNLIKELY EVENT OF ACCIDENTAL DEPLOYMENT. OTHERWISE, PERSONAL INJURY COULD RESULT.

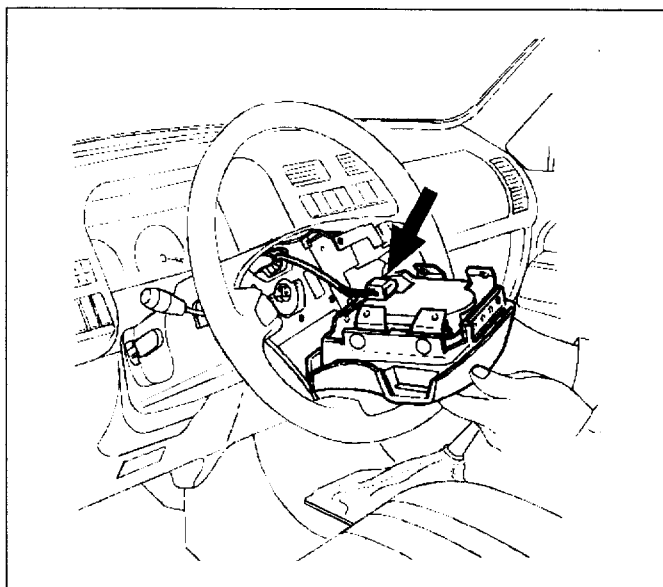
NOTE: In the event deployment has occurred, inspect coil assembly wire for any signs of scorching, melting or any other damage due to excessive heat. If the coil has been damaged, replace it.

Removal

1. Disable the SRS (Refer to "Disabling the SRS " in this section).
2. Loosen the air bag assembly fixing bolts from behind the steering wheel assembly using a TORX® driver or equivalent until the air bag assembly can be released from steering wheel.

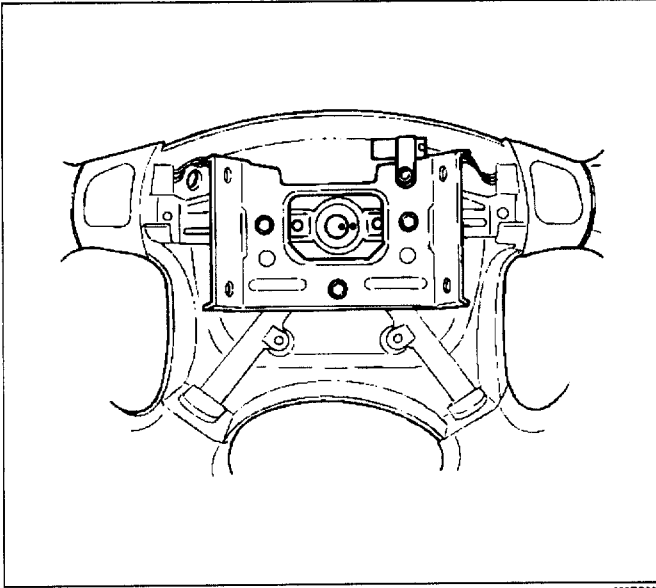


3. Disconnect the yellow 2-pin connector located behind the air bag assembly and remove air bag assembly. Refer to "SRS Connectors" in this section for removal and installation.

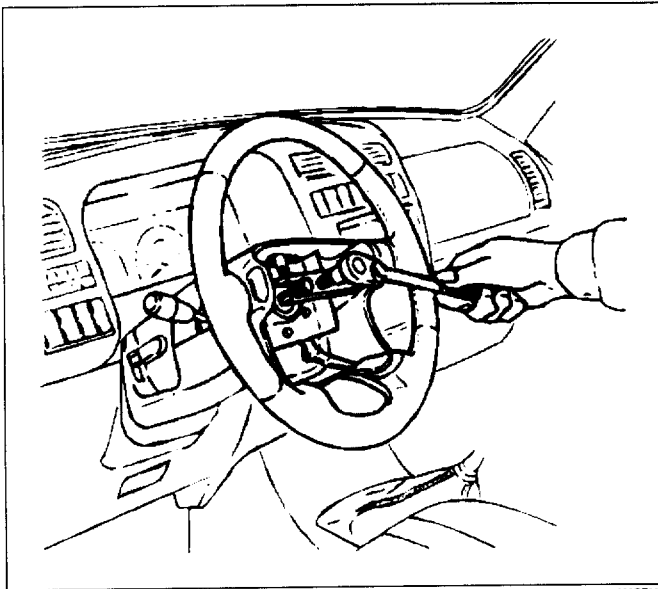


4. Disconnect horn lead connector.
5. Remove the steering wheel attachment nut.

6. Apply a setting mark across the steering wheel and shaft so parts can be reassembled in their original position.



7. Move the tires to the straight ahead position before removing the steering wheel and removing wheel with 5-8521-0016-0.



8. Feed wiring through the wheel and remove wheel.

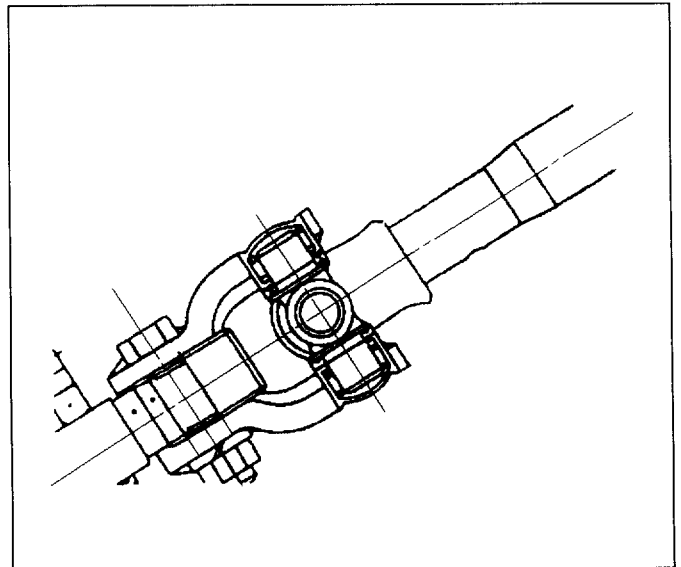
9. Remove the steering lower cover and engine hood opening lever.
 10. Remove the driver knee bolster assembly.
 11. Remove the steering column cover.
 12. Remove air conditioning lower duct.
 13. Disconnect the wiring harness connectors located at the base of steering column.

CAUTION: Never apply force to the steering wheel in direction of the shaft by using a hammer or other impact tools in an attempt to remove the steering wheel. The steering shaft is designed as an energy absorbing unit.

14. Remove the combination switch assembly with SRS coil.

NOTE: SRS coil is a part of combination switch assembly, which cannot be replaced separately. Therefore, be sure not to remove the SRS coil from the combination switch assembly.

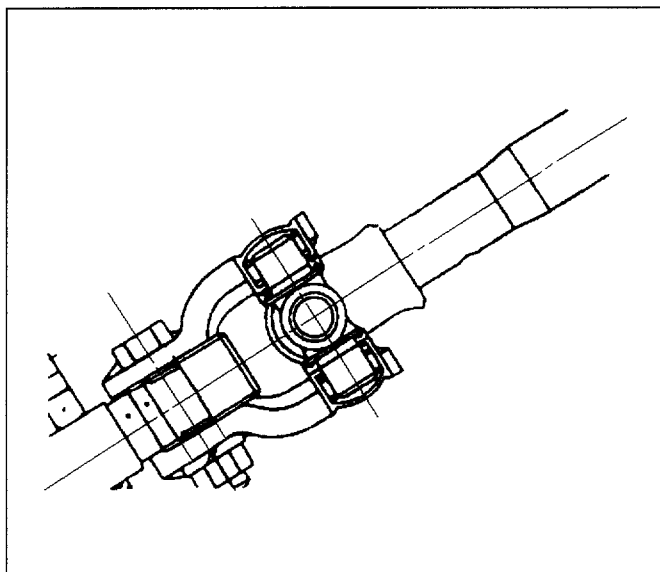
15. Remove the snap ring.
 16. Remove the cushion rubber.
 17. Disconnect shift lock cable (A/T only).
 18. Disconnect the starter switch harness connector located base of steering column.
 19. Remove steering lock cylinder assembly.
 20. Apply a setting mark across the universal joint and steering shaft to reassemble the parts in their original position.



21. Remove steering column assembly.

Installation

1. Install the steering column assembly and align the setting marks on the universal joint and steering shaft made during removal.



2. Tighten the steering column fixing bolts (dash panel side) to the specified torque.

Torque: 20 N·m (2.0 kg·m/14 lb ft)

3. Tighten the steering column fixing bolts (Pedal bracket) to the specified torque.

Torque: 20 N·m (2.0 kg·m/14 lb ft)

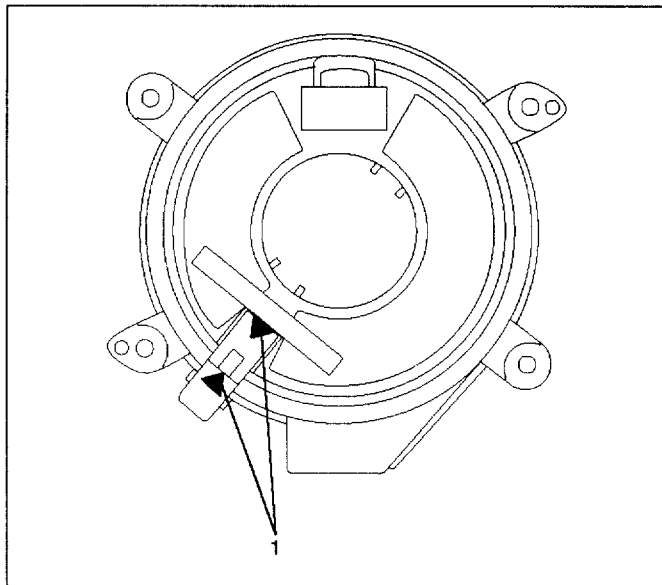
4. Tighten the universal joint to the specified torque.

Torque: 31 N·m (3.2 kg·m/23 lb ft)

5. Install steering lock cylinder assembly.
6. Connect shift lock cable (For A/T)
7. Install cushion rubber.
8. Install snap ring.
9. Install the combination switch assembly with SRS coil.
10. Connect the wiring harness connector located on the base of steering column.

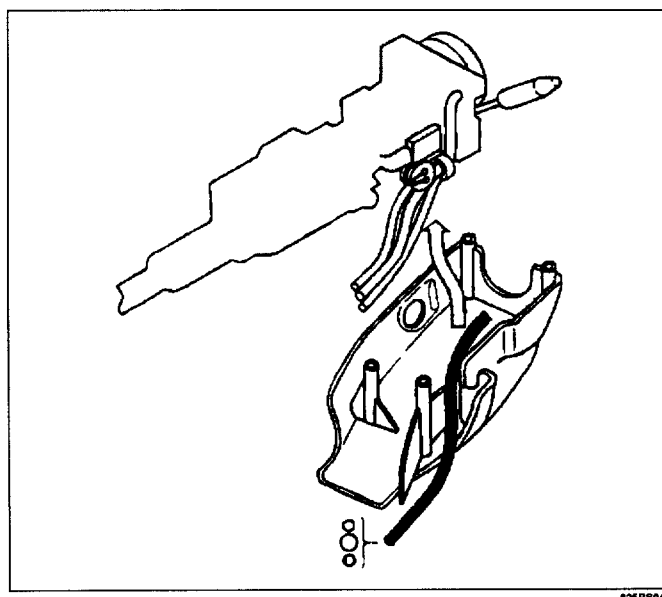
11. Turn the SRS coil counterclockwise to full, return about 3 turns and align the neutral mark (1).

CAUTION: When turning the SRS coil counterclockwise to full, stop turning if resistance is felt. Forced further turning may damage to the cable in the SRS coil.

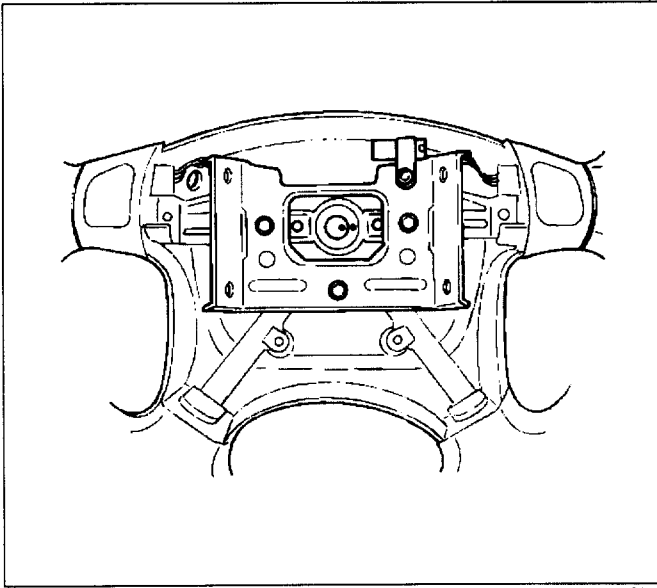


12. Install steering column cover.

CAUTION: When installing the steering column cover, be sure to wire (through each harness) as illustrated so that the harness starter switch, combination switch and SRS coil may not catch wiring.



13. Install the steering wheel and align the setting marks.

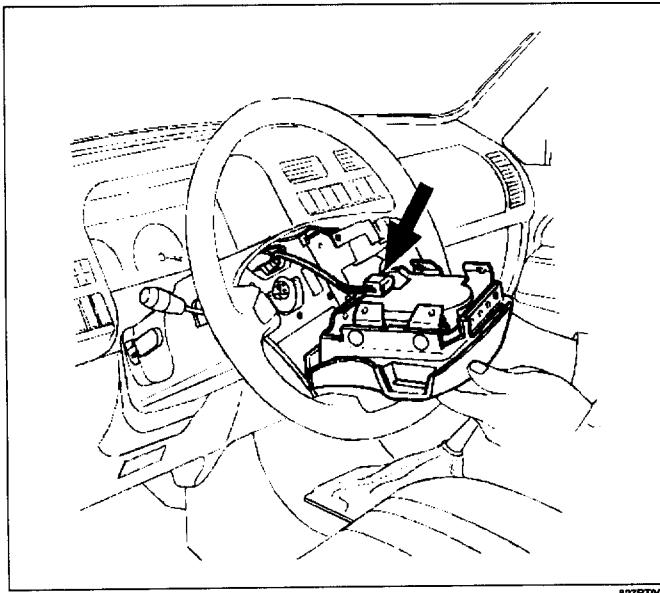


14. Tighten the steering wheel fixing nut to the specified torque.

Torque: 34 N·m (3.5 kg·m/25 lb ft)

15. Connect horn lead.
16. Connect air bag wiring harness connector.

NOTE: Pass the lead wire through the tabs on the plastic cover (wire protector) of air bag to prevent lead wire from being pinched.

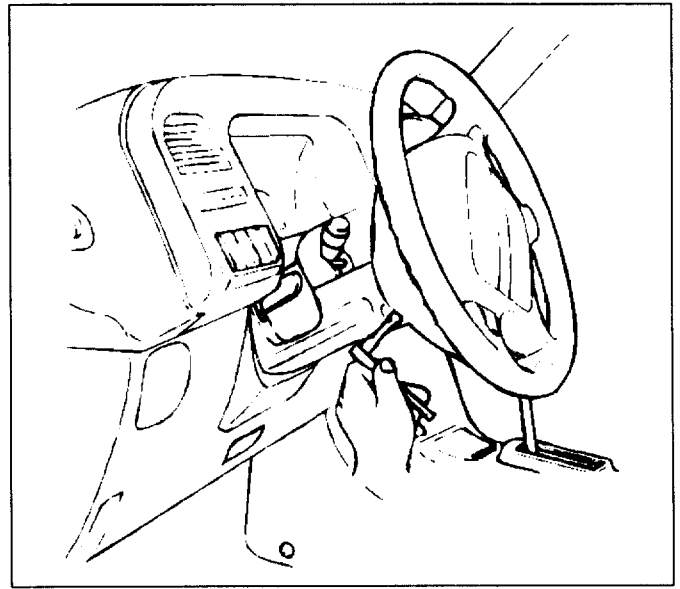


17. Install air bag into steering wheel and tighten bolts to specified sequence as shown in figure.

Torque: 8 N·m (81 kg·cm/69 lb in)

CAUTION: Never use the air bag assembly from another vehicle and difference model year air bag assembly.

Use only new air bag assembly proper to the TFR which is being repaired.



18. Enable the SRS (Refer to "Enabling the SRS" in this section).

Passenger Air Bag Assembly

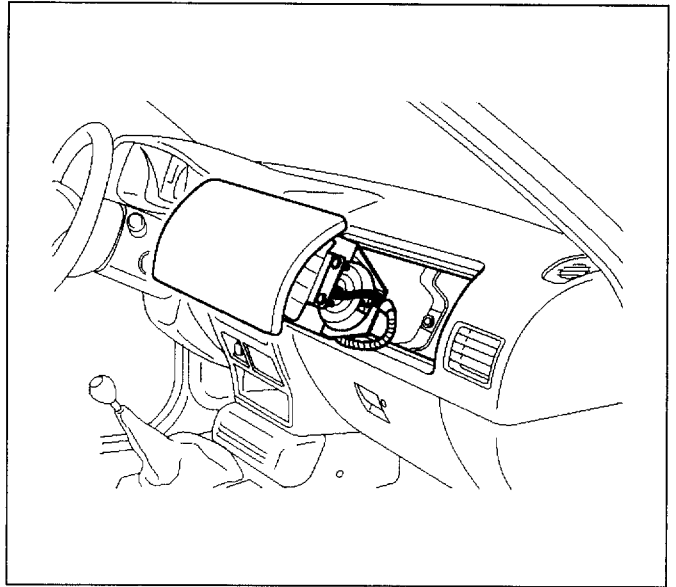
Service Precautions

WARNING: SAFETY PRECAUTIONS MUST BE FOLLOWED WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY. AFTER DEPLOYMENT, THE AIR BAG ASSEMBLY SURFACE MAY CONTAIN A SMALL AMOUNT OF SODIUM HYDROXIDE, A BY-PRODUCT OF THE DEPLOYMENT REACTION, THAT IS IRRITATING TO THE SKIN AND EYES. MOST OF THE POWER ON THE AIR BAG ASSEMBLY IS HARMLESS. AS A PRECAUTION, WEAR GLOVES AND SAFETY GLASSES WHEN HANDLING A DEPLOYED AIR BAG ASSEMBLY, AND WASH YOUR HANDS WITH MILD SOAP AND WATER AFTERWARDS.

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WARNING: In the event deployment has occurred, inspect coil assembly wire for any signs of scorching, melting or any other damage due to excessive heat. If the coil has been damaged, replace it.

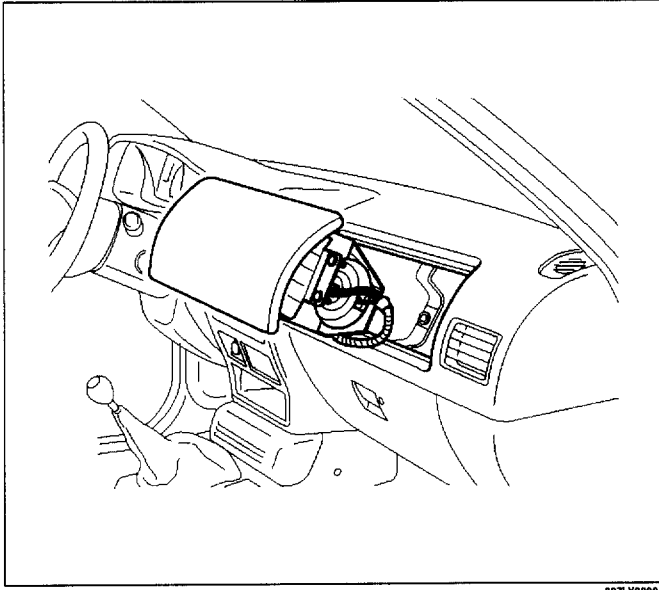
Removal



827LY00001

1. Disable the SRS (Refer to "Disabling the SRS " in this section).
2. Remove gear control knob.
3. Remove front console assembly.
4. Remove rear console assembly and disconnect harness connector.
5. Remove ECM and SDM cover.
6. Remove glove box assembly with lid.
7. Remove glove box cover.
8. Remove instrument panel assist side lower cover.
9. Disconnect engine hood opener lever.
10. Remove instrument panel door side lower cover.
11. Remove lower cluster with ashtray.
12. Remove meter cluster assembly and disconnect harness connector.
13. Remove instrument panel lower center cover.
14. Disconnect passenger air bag assembly harness connector.
15. Remove air bag assembly fixing bolts and nuts.
16. Remove passenger air bag assembly.

Installation



1. Install passenger air bag assembly.

2. Install air bag assembly fixing nuts and tighten to specified torque.

Torque: 6 N·m (61 kg·cm/52 lb in)

3. Connect air bag assembly harness connector.
4. Install instrument panel lower center cover.
5. Install meter cluster assembly and connect harness connector.
6. Install lower cluster with ashtray.
7. Install instrument panel door side lower cover.
8. Connect engine hood opener lever.
9. Install instrument panel assist side lower cover.
10. Install glove box cover.
11. Install glove box assembly with lid.
12. Install ECM and SDM cover.
13. Install rear console assembly and connect harness connector.
14. Install front console assembly.
15. Install gear control knob.
16. Enable the SRS (Refer to "Enabling the SRS" in this section).

Main Data and Specifications

Fastener Tightening Specification

Application	N·m	kg·m (kg·cm)	Lb Ft (Lb in)
SDM	10	(100)	(87)
Driver air bag fixing bolt	8	(81)	(78)
Steering wheel fixing bolt	34	3.5	25
Steering column (dash panel side fixing bolts)	20	2.0	14
Steering column (Pedal bracket fixing bolt)	20	2.0	14
Steering column (Universal joint fixing bolt)	31	3.2	23
Passenger Air Bag fixing nuts	6	(61)	(52)

SECTION 9J1

RESTRAINT CONTROL SYSTEM

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Service Precaution

WARNING: THIS VEHICLE HAS A SUPPLEMENTAL RESTRAINT SYSTEM (SRS). REFER TO THE SRS COMPONENT AND WIRING LOCATION VIEW IN ORDER TO DETERMINE WHETHER YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING. WHEN YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING, REFER TO THE SRS SERVICE INFORMATION. FAILURE TO FOLLOW WARNINGS COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY, OR OTHERWISE UNNEEDED SRS SYSTEM REPAIRS.

CAUTION: Always use the correct fastener in the proper location. When you replace a fastener, use ONLY the exact part number for that application. ISUZU will call out those fasteners that require a replacement after removal. ISUZU will also call out the fasteners that require thread lockers or thread sealant. UNLESS OTHERWISE SPECIFIED, do not use supplemental coatings (Paints, greases, or other corrosion inhibitors) on threaded fasteners or fastener joint interfaces. Generally, such coatings adversely affect the fastener torque and the joint clamping force, and may damage the fastener. When you install fasteners, use the correct tightening sequence and specifications. Following these instructions can help you avoid damage to parts and systems.

Diagnostic Information

CAUTION: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not reused, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

Diagnostic Procedures

WARNING: TO AVOID DEPLOYMENT WHEN TROUBLESHOOTING THE SRS, DO NOT USE ELECTRICAL TEST EQUIPMENT SUCH AS A BATTERY-POWERED OR AC-POWERED VOLTMETER, OHMMETER, ETC., OR ANY TYPE OF ELECTRICAL EQUIPMENT OTHER THAN THAT SPECIFIED IN THIS MANUAL. DO NOT USE A NON POWERED, PROBE-TYPE TESTER. INSTRUCTIONS IN THIS MANUAL MUST BE FOLLOWED CAREFULLY, OTHERWISE PERSONAL INJURY MAY RESULT.

The diagnostic procedures used in this section are designed to aid in finding and repairing SRS problems. Outlined below are the steps to find and repair SRS problems quickly and effectively. Failure to carefully follow these procedures may result in extended diagnostic time, incorrect diagnosis and incorrect parts replacement.

1. Perform The "SRS Diagnostic System Check".

The "SRS Diagnostic System Check" should always be the starting point of any SRS diagnostics. The "SRS Diagnostic System Check" checks for proper "AIR BAG" warning lamp operation and checks for SRS trouble codes using both "Flash Code" and "Scan Tool" Methods.

2. Refer To The Proper Diagnostic Chart As Directed By The "SRS Diagnostic System Check".

The "SRS Diagnostic System Check" will lead you to the correct chart to diagnose any SRS problems. Bypassing these procedures may result in extended diagnostic time, incorrect diagnosis and incorrect parts replacement.

3. Repeat The "SRS Diagnostic System Check" After Any Repair Or Diagnostic Procedures Have Been Performed.

Performing the "SRS Diagnostic System Check" after all repair or diagnostic procedures will assure that the repair has been made correctly and that no other conditions exist.

Diagnostic Codes

The Sensing and Diagnostic Module (SDM) maintains a history record of all diagnostic codes that have been detected since the SRS codes were last cleared during service.

1. Active Codes — Faults that are presently detected this ignition cycle. Active codes are stored in RAM (Random Access Memory).
2. History Codes — All faults detected since the last time the history fault memory was cleared. History codes are stored in EEPROM. (Electrically Erasable Programmable Read only Memory)

How To Read Trouble Codes

All codes (Active and history) can be read (or cleared) by using a scan tool or equivalent.

If a PDT is not available, have the vehicle serviced by ISUZU dealer.

How To Clear Trouble Codes

Trouble codes can only be cleared by using a Scan Tool. If a "scan tool" is not available then inform the owner of the stored codes and suggest that the codes are cleared upon the next visit to an Isuzu dealership.

Scan Tool Diagnostics

A scan tool can be used to read current and history codes and to clear all history codes after a repair is complete. The scan tool must be updated to communicate with the SRS through a replaceable cartridge or a manufacturer's update before it can be used for SRS diagnostics. To use the scan tool, connect it to the DLC connector and turn the ignition switch "ON". Then follow the manufacturer's directions for communication with the SRS. The scan tool reads serial data from the SDM "Serial Data" output (terminal 24) to the DLC connector (terminal 9).

Basic Knowledge Required

Before using this section of the Service Manual, there is some basic knowledge which will be required. Without this knowledge, you will have trouble using the diagnostic procedures in this section. Use care to prevent harm or unwanted deployment. Read all cautions in the service manual and on warning labels attached to SRS components.

Basic Electrical Circuits

You should understand the basic theory of electricity including series and parallel circuits, and understand the voltage drops across series resistors. You should know the meaning of voltage (volts), current (amps), and resistance (ohms). You should understand what happens in a circuit with an open or a shorted wire. You should be able to read and understand a wiring diagram.

“Flash Code” Diagnostics

Flash code diagnostics can be used to read active codes and to determine if history codes are present but cannot be used to clear codes or read history codes. Flash code diagnostics is enabled by grounding by terminal 4 shorting to terminal 13 of the DLC connector with the ignition switch “ON”. Grounding terminal 4 of the DLC connector pulls the “Diagnostics Request” input (Terminal 1) of the SDM low and signals the SDM to enter the flash code diagnostic display mode.

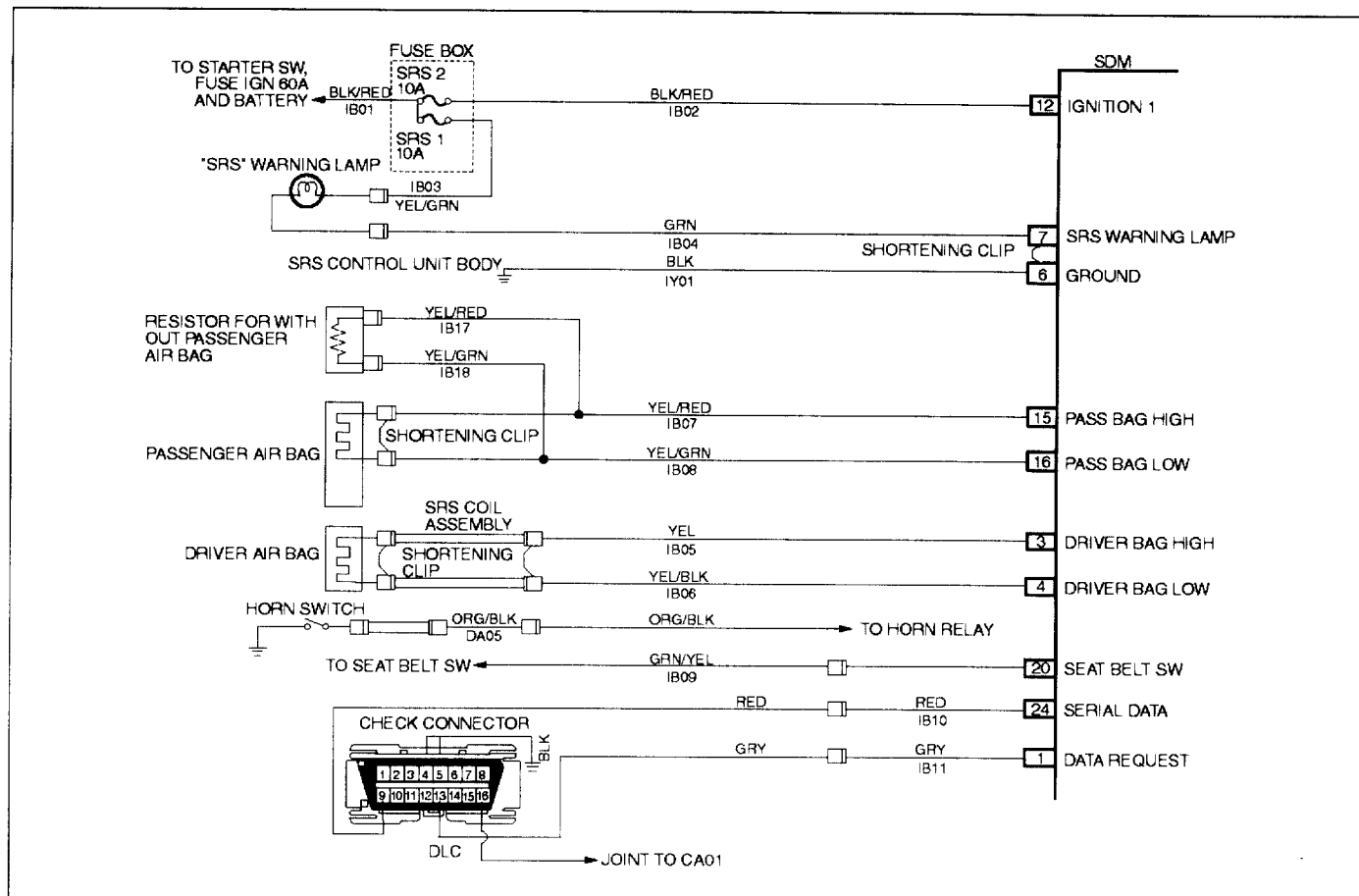
The SDM displays the trouble codes by flashing the warning lamp. Each code that is displayed will consist of a number of flashes which represents the tens digit, a 1.2 second pause, following by a number of flashes which represents the ones digit of the code. Each code is displayed one time before moving on to the next code. After all of the codes have been displayed, the entire code sequence will continually be repeated until ground is removed from terminal 4 of the DLC connector.

Two special codes exist when reading in the flash code mode (Flash Code 12 and Flash Code 13). “Flash Code 12” will always be the first code displayed when the flash code mode is enable Code 12 is not an indication of a SRS problem but an indication that the flash code mode has been enabled. If there are no active or history codes present, the SDM will display code 12 until ground is removed from the DLC connector at terminal 4. “flash Code 13” will be displayed if history codes are present. To read the history codes a scan tool must be used.

TECH 2 Tool Data

DISPLY on TECH 2	UNIT	VALUE
IGNITION	V	12.0
WARNING LAMP	ON/OFF	ON
DRIV. SENSELO	V	2.5
PASS. SENSELO	V	2.5
DRIVER RESIST	OHMS	3.1
PASS. RESIST	OHMS	3.1
DRIV. ENERGY	V	22.3
PASS. ENERGY	V	22.3
WARN LAMP ON	HRS	
WARNING LAMP CYCLES	ON	
DRV LPS		NOT PRES
PASS LPS		PRESENCE
SYSTEM TYPE		DRIV/PASS
WARNING LAMP		ON
LAMP DRIVER FBK		ON
DRIVER SEATBELT		BACKUPED
DRIVER SBELT FBK		BACKUPED

System Schematic



D09LX001

SRS Diagnostic System Check

The diagnostic procedures used in this section are designed to find and repair SRS malfunctions. To get the best results, it is important to use the diagnostic charts and follow the sequence listed below:

- A Perform the "SRS Diagnostic System Check."

The "SRS Diagnostic System Check" must be the starting point of any SRS diagnostics. The "SRS Diagnostic System Check" checks for proper "AIR BAG" warning lamp operation, the ability of the SDM to communicate through the "Serial Data" line and whether SRS diagnostic trouble codes exist.
- B Refer to the proper diagnostic chart as directed by the "SRS Diagnostic System Check."

The "SRS Diagnostic System Check" will lead you to the correct chart to diagnose any SRS malfunctions. Bypassing these procedures may result in extended diagnostic time, incorrect diagnosis and incorrect parts replacement.
- C Repeat the "SRS Diagnostic System Check" after any repair or diagnostic procedures have been performed.

Performing the "SRS Diagnostic System Check" after all repair or diagnostic procedures will ensure that the repair has been made correctly and that no other malfunctions exist

Circuit Description

When the ignition switch is first turned "ON", "Ignition 1" voltage is applied from the "SRS 2" fuse to the SDM at the "Ignition 1" input terminals "12". The SDM responds by flashing the "AIR BAG" warning lamp seven times, while performing tests on the SRS.

Notes On System Check Chart:

1. The "AIR BAG" warning lamp should flash seven times after ignition is first turned "ON".
2. After the "AIR BAG" warning lamp flashes seven times, it should turn "OFF".
3. This test checks for the proper operation of the "Serial Data" line. This test will also determine whether history diagnostic trouble codes are stored and, if so, identify them.
4. Improper operation of the "AIR BAG" warning lamp is indicated. This test differentiates a warning lamp stays "ON" condition from a warning lamp does not come "ON" condition.
5. This test checks for proper operation of the "Serial Data" line. This test will also identify the stored diagnostic trouble codes and whether they are current or history.

Diagnostic Aids:

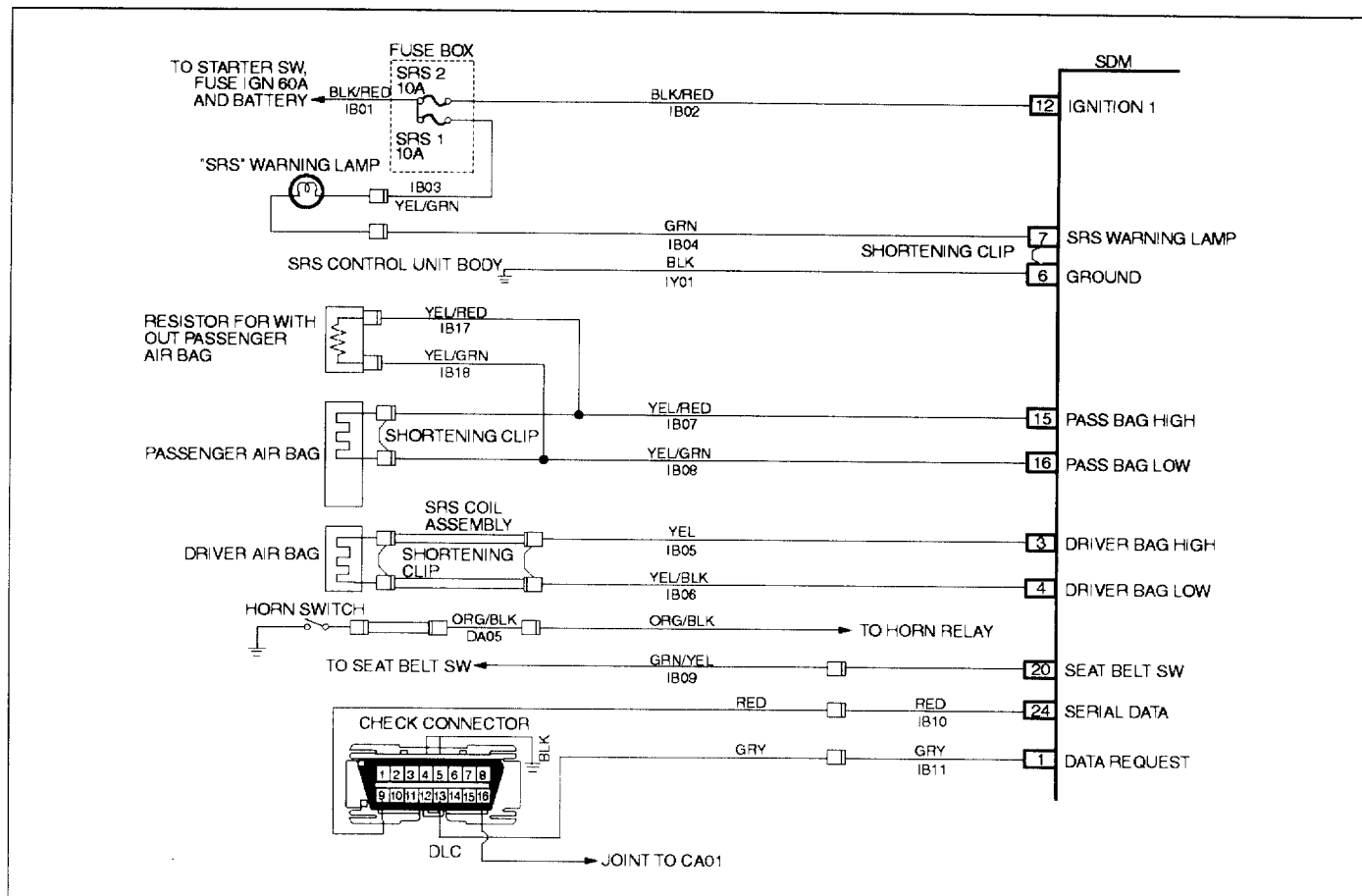
The order in which diagnostic trouble codes are diagnosed is very important. Failure to diagnose the

diagnostic trouble codes in the order specified may result in extended diagnostic time, incorrect diagnosis and incorrect parts replacement.

SRS Diagnostic System Check

Step	Action	Yes	No
1	Note the "Air Bag" warning lamp as ignition switch is turned "ON." Does the "AIR BAG" warning lamp flash seven (7) times?	Go to Step 2	Go to Step 3
2	Note the "AIR BAG" warning lamp after it flashed 7 times. Does the "AIR BAG" warning lamp go "OFF"?	Go to Step 4	Go to Step 5
3	Note the "AIR BAG" warning lamp as ignition switch is turned "ON". Does the "AIR BAG" warning lamp come "ON" steady?	Go to Chart B.	Go to Chart C.
4	1. Note the "AIR BAG" warning lamp as that ignition switch is turned "ON." Ignition switch "OFF." 2. Connect a scan tool to data link connector. 3. Follow direction given in the scan tool instruction manual. Ignition switch "ON." 4. Request the SRS diagnostic trouble code display, recode all history diagnostic trouble code(s). specify as such, on repair order Is (are) diagnostic trouble code(s) displayed?	Ignition switch "OFF." When DTC 71 is set, go to DTC 71 Chart. For all other history codes refer to "Diagnostic Aids" For that specific DTC. A history DTC indicates the malfunction has been repaired or is intermittent.	SRS is functional and free of malfunctions, no further diagnosis is required. If scan tool indicated "NO DATA RECEIVED," refer to chassis electrical section8.
5	1. Ignition switch "OFF." 2. Connect a scan tool to data link connector. 3. Follow directions as given in the scan tool instruction manual. 4. Ignition switch "ON." 5. Request the SRS diagnostic trouble code display, Recode all diagnostic trouble code(s), specifying as current or history on repair order. Is (are) diagnostic trouble code (s) displayed?	Ignition switch "OFF". When DTC 53 is set, go to DTC 53 chart. When DTC 51 is set, go to DTC 51 chart. When DTC 19 is set, go to DTC 19 chart. When DTC 25 is set, go to DTC 25 chart. Diagnose remaining current DTCs from lowest to highest. When only history DTCs exist, refer to "Diagnostics Aids" for that specific DTC. A history DTC indicates the malfunction has been repaired or is intermittent.	If scan tool indicates "No Data Received," refer to chassis electrical section8.

Chart A SDM Integrity Check



DOI: 10.1002/for

Circuit Description:

When the SDM recognizes "Ignition 1" voltage, applied to terminals "12", is greater than 9 volts, the "AIR BAG" warning lamp is flashed 7 times to verify operation. At this time the SDM performs "Turn-ON" tests followed by "Continuous Monitoring" tests. When a malfunction is detected, the SDM sets a current diagnostic trouble code and illuminates the "AIR BAG" warning lamp. The SDM will clear current diagnostic trouble codes and move them to a history file when the malfunction is no longer detected and/or the ignition switch is cycled, except for DTCs 19, 25, 51, 53 and 71. DTC 71 can only be cleared using a scan tool "Clear Codes" command. If DTCs 51, 53 are not indicated then DTC 71 is not existing. DTCs 51, 53 and 71 can not be cleared after a "Clear Codes" command is issued.

Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

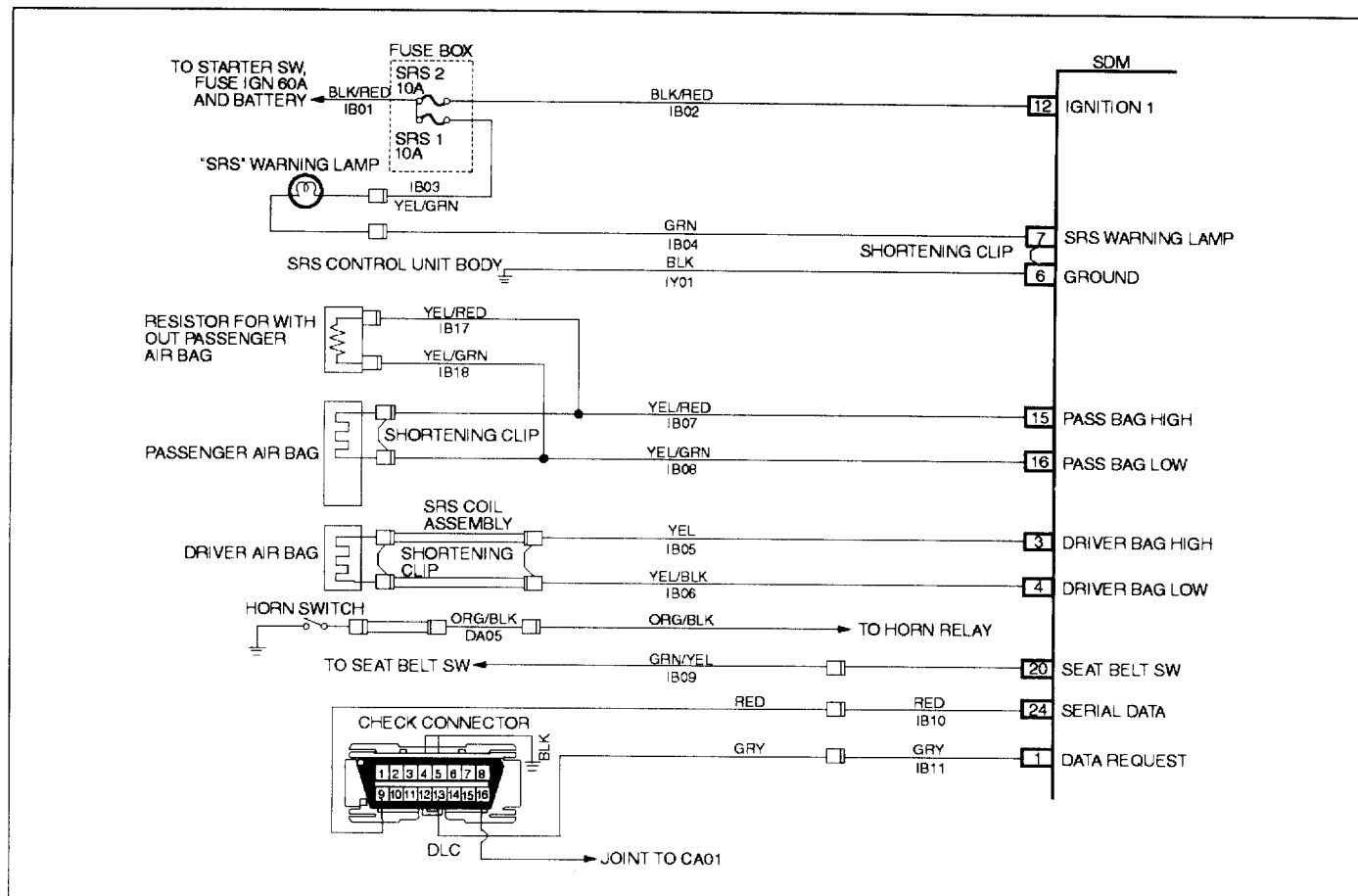
1. This test confirms a current malfunction. If no current malfunction is occurring (history DTC set) the "Diagnostic Aids" for the appropriate diagnostic trouble code should be referenced. The SDM should not be replaced for a history diagnostic trouble code.
2. This test checks for a malfunction introduced into the SRS during the diagnostic process. It is extremely unlikely that a malfunctioning SDM would cause a new malfunction to occur during the diagnostic process.
3. When all circuitry outside the SDM has been found to operate properly, as indicated by the appropriate diagnostic chart, then and only then should the SDM be replaced.

Chart A SDM Integrity Check

WARNING: DURING SERVICE PROCEDURES. BE VERY CAREFUL WHEN HANDLING A SENSING AND DIAGNOSTIC MODULE (SDM). NEVER STRIKE OR JAR THE SDM. NEVER POWER UP THE SRS WHEN THE SDM IS NOT RIGIDLY ATTACHED TO THE VEHICLE. ALL SDM AND MOUNTING BRACKET FASTENERS MUST BE CAREFULLY TORQUED AND THE ARROW MUST BE POINTING TOWARD THE FRONT OF THE VEHICLE TO ENSURE PROPER OPERATION OF THE SRS. THE SDM COULD BE ACTIVATED WHEN POWERED WHILE NOT RIGIDLY ATTACHED TO THE VEHICLE WHICH COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY.

Step	Action	Yes	No
1	1. This chart assumes that the "SRS Diagnostic System Check" and either a symptom chart or a diagnostic trouble code chart diagnosis have been performed. When all circuitry outside the SDM has been found to operate properly, as indicated by the appropriate diagnostic chart, and the symptom or DTC remains current, the following 2. Diagnostic procedures must be performed to verify the need for SDM replacement. 3. Ignition switch "OFF". 4. Reconnect all SRS components, ensure all components are properly mounted. 5. Ensure the ignition switch has been "OFF" for at least 15 seconds. 6. Note "AIR BAG" warning lamp as ignition switch is turned "ON." Does warning lamp flash 7 times then go "OFF"?	The symptom or DTC is no longer occurring. Clear SRS diagnostic trouble codes. Repeat "SRS Diagnostic System Check"	Go to Step 2
2	Using a scan tool request diagnostic trouble code display. Is the same symptom or DTC occurring as was when the "SRS Diagnostic System Check" was first performed?	Go to Step 3	Ignition switch "OFF". Go to the appropriate chart for the indicated malfunction.
3	1. Clear "SRS Diagnostic Trouble Codes". 2. Ignition switch "OFF" for at least two minutes. 3. Note "AIR BAG" warning lamp as ignition switch is turned "ON." Does warning lamp flash 7 times then go "OFF"?	SRS is functional and free of malfunctions. No further diagnosis is required. Go to Step 4	Ignition switch "OFF". Replace SDM. Go to Step 4
4	Reconnect all SRS components, ensure all components are properly mounted. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 4

Chart B "AIR BAG" Warning Lamp Comes "ON" Steady



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Circuit Description:

When the ignition switch is first turned "ON", "Ignition 1" voltage is applied from the "SRS 1" fuse to "AIR BAG", warning lamp which is connected to "SRS Warning Lamp", terminal "7". The "SRS 2" fuses apply system voltage to the "Ignition 1" inputs, terminals "12". The SDM responds by flashing the "AIR BAG" warning lamp 7 times. If "Ignition 1" is less than 9 volts, the "AIR BAG" warning lamp will come "ON" solid with no DTCs set.

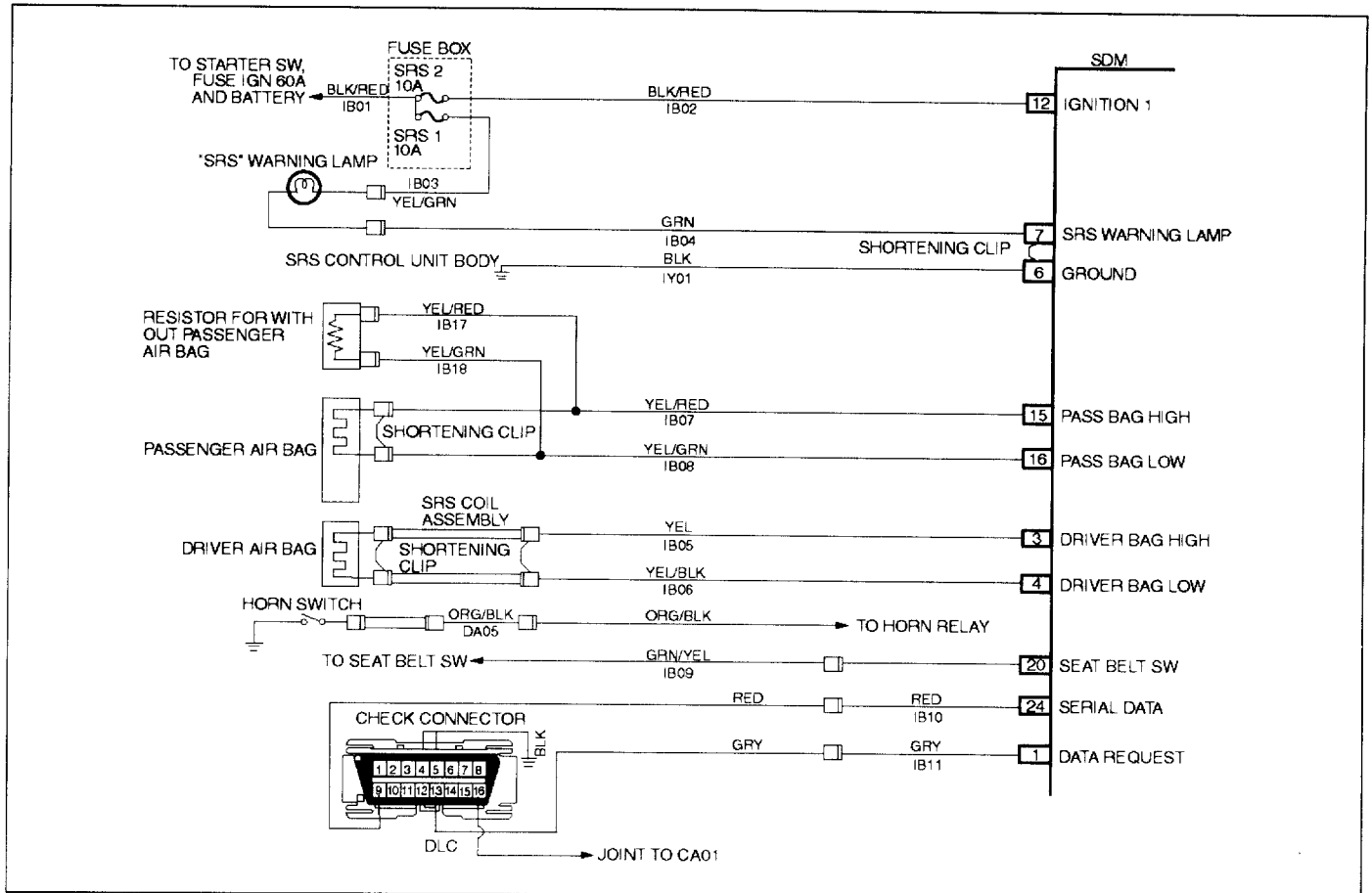
Chart Test Description:

- Number(s) below refer to step number(s) on the diagnostic chart.
2. This test checks for an open in the "Ignition 1" circuit to the SDM.
 3. This test checks for the voltage of "IGNITION 1".
 4. This test determines whether the malfunction is a short to ground in circuit IB04-GRN.

Chart B "AIR BAG" warning lamp comes "ON" Steady

Step	Action	Yes	No
1	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Ignition switch "OFF." 3. Connect scan tool to data link connector, follow directions as given in the scan tool instruction MANUAL. 4. Ignition switch "ON." 5. Request SRS diagnostic trouble code display. Dose scan tool indicate "No Data Received"?	Go to Step 2	Go to Step 3
2	1. Ignition switch "OFF". 2. Inspect SDM harness connector connection to SDM. Is it securely connected to the SDM?	Ignition switch "OFF." Replace SDM. Go to Step 5	Connect SDM securely to deactivate shorting clip in SDM harness connector. Go to Step 5
3	Using scan tool, request SRS data list. Is "ignition" more than 9 volts?	Go to Step 4	Ignition switch "OFF." Replace SDM. Go to Step 5
4	1. Ignition switch "OFF." 2. Disconnect SRS coil and passenger air bag assemblies. yellow 2-pin connector located at base of steering column and behind the glove box assembly. Disconnect SDM. 3. Disconnect the connector of "SRS Warning Lamp" of instrument cluster. 4. Measure resistance from SDM harness connector terminal "6" to ground. Does J-39200 display "OL" (Infinite)?	Go to Chart A	Replace SRS harness. Go to Step 5
5	Reconnect all SRS components, ensure all components are properly mounted. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 5

Chart C "AIR BAG" Warning Lamp Does Not Come "ON" Steady



D09LX001

Circuit Description:

When the ignition switch is first turned "ON", "Ignition 1" voltage is applied from the "SRS 1" fuse to the "AIR BAG" warning lamp which is connected to "SRS Warning Lamp", terminal "7". The "SRS 2" fuse apply system voltage to the "Ignition 1" inputs, terminals "12". The SDM responds by flashing the "AIR BAG" warning lamp seven times. If "Ignition 1" is more than 16 volts, the "AIR BAG" warning lamp will be still "OFF" solid with no DTCs set.

Chart Test description:

Number(s) below refer to step number(s) on the diagnostic chart:

1. This test decides whether power is available to SDM warning lamp power feed circuit.
2. This test determines whether the voltage is present in the warning lamp circuit.
3. This test determines if the malfunction is in the instrument cluster.
4. This test checks for open in the warning lamp circuitry.
5. This test isolates the IB04-GRN circuit and checks for a short in the IB04-GRN circuit to B+.
8. This test checks for a short from the SDM warning lamp power feed circuit to ground.
9. This test determines whether the short to ground is due to a short in the wiring.

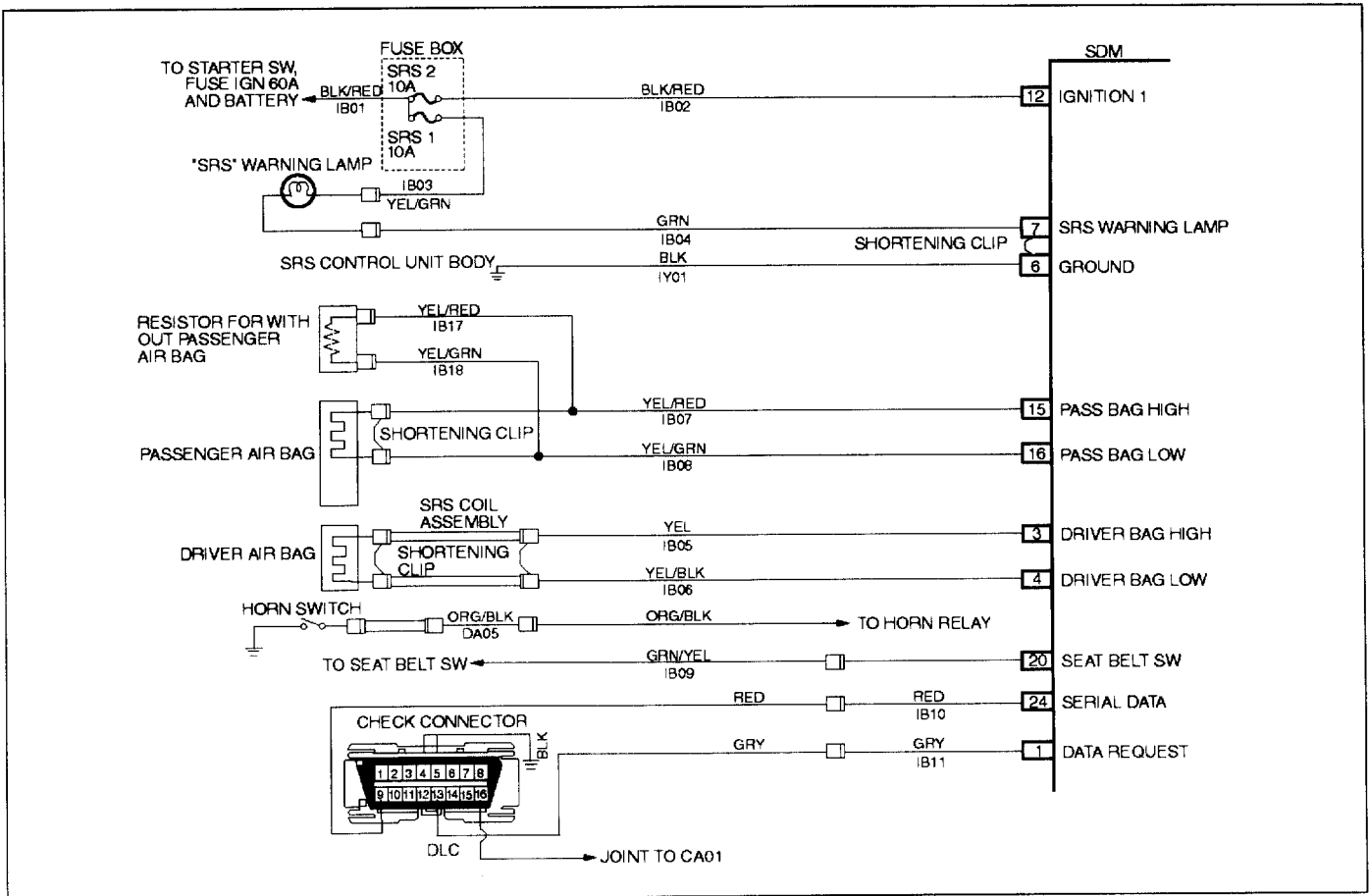
Chart C "AIR BAG" Warning Lamp Does Not Come "ON" Steady

Step	Action	Yes	No
1	1. When measurements are requested in this chart, use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Ignition switch "OFF." 3. Remove and inspect "SRS 1" fuse to the "AIR BAG" warning lamp. Is fuse good?	Go to Step 2	Go to Step 7
2	1. Ignition switch "OFF." 2. Disconnect SRS coil and passenger air bag assemblies. Yellow 2-pin connector located at base of steering column and behind the glove box assembly. 3. Disconnect SDM. 4. Ignition switch "ON." 5. Measure voltage on SDM harness connector from terminal "7" to terminal "6" (ground). Is system voltage present on terminal "7"?	Go to Step 4	Go to Step 3
3	1. Ignition switch "OFF." 2. Remove instrument meter cluster. 3. Check for proper connection to instrument cluster at IB04-GRN terminal. 4. If ok, then remove and inspect "AIR BAG" bulb. Is bulb good?	Go to Step 5	Replace bulb. Go to Step 6
4	1. Ignition switch "OFF." 2. Disconnect instrument meter cluster harness connector. 3. Ignition switch "ON." 4. Measure voltage on SDM harness connector from terminal "7" to terminal "6" (GROUND). Is voltage 1 volt or less?	Go to Chart A	Replace SRS harness. Go to Step 6
5	1. Install bulb. 2. Measure resistance from instrument meter cluster harness connector IB04-GRN terminal to SDM harness connector terminal "7". Is resistance 5.0 ohms or less?	Service instrument meter cluster. Install instrument meter cluster. Go to Step 6	Replace SRS harness. Go to Step 6
6	Reconnect all SRS components, ensure all components are properly mounted. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 6
7	Perform chart C. Was this step finished?	Go to Step 8	Go to Step 1
8	1. Replace "SRS 1" fuse. 2. Ignition switch "ON" wait 10 Seconds then ignition switch "Off. " 3. Remove and inspect "SRS 1" fuse. Is fuse good?	Install "SRS 1" fuse. Go to Step 10	Go to Step 9

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Step	Action	Yes	No
9	1. Disconnect SRS coil and passenger air bag assemblies. Yellow 2-pin connectors located at base of steering column and behind the glove box assembly. 2. Disconnect SDM. 3. Replace "SRS 1" fuse. 4. Ignition switch "ON" wait 10 seconds. 5. Ignition switch "OFF". 6. Remove and inspection "SRS 1" fuse. Is fuse good?	Install "SRS 1" fuse. Go to Chart A	Replace SRS harness. Replace "SRS 1" fuse. Go to Step 10
10	Reconnect all SRS components, ensure all components are properly mounted. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 10

DTC 15 Passenger Deployment Loop Resistance High



D09LX001

Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. The SDM then proceeds with the "Resistance Measurement Test". "Passenger Bag Low" terminal "16" is grounded through a resistor and the passenger current source connected to "Passenger Bag High" terminal "15" allows a known amount of current to flow. By monitoring the voltage difference between "Passenger Bag High" and "Passenger Bag Low" the SDM calculates the combined resistance of the passenger air bag assembly, harness wiring circuits IB07-YEL/RED and IB08-YEL/GRN connector terminal contact.

DTC Will Set When:

The combined resistance of the passenger air bag assembly, harness wiring circuits IB07-YEL/RED and IB08-YEL/GRN, and connector terminal contact is above a specified value. This test is run once each ignition cycle during the "Resistance Measurement Test" when:

1. No "higher priority faults" are detected during "Turn-ON",

2. "Ignition 1" voltage is in the specified value.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

The ignition switch is turned "OFF."

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the malfunction is in the SDM.
3. This test verifies proper connection of the yellow 2-pin connector.
4. This test checks for proper contact and/or corrosion of the yellow 2-pin connector terminals.
5. The test checks for a malfunctioning passenger air bag assembly.
6. This test determines whether the malfunction is due to high resistance in the wiring.

Diagnostic Aids:

An intermittent condition is likely to be caused by a poor connection at the passenger air bag assembly harness

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connector terminals "1" and "2", SDM terminal "15" and "16", or a poor wire to terminal connection in CKTs IB07-YEL/RED and IB08-YEL/GRN. This test for this diagnostic trouble code is only run while the "AIR BAG" warning lamp is performing the bulb check, unless

DTC 17 or DTC 26 is detected. When a scan tool "Clear Codes" command is issued and the malfunction is still present, the DTC will not reappear until the next ignition cycle.

DTC 15 Passenger Deployment loop Resistance High

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" Performed?	Go to Step 2	Go to The "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Use scan tool data list function, read and record the passenger deployment loop resistance. Is passenger resist. more than 2.9 ohms?	Go to Step 3	Go to Chart A
3	1. Ignition switch "Off." 2. Make sure the passenger air bag assembly yellow 2-pin connector located behind the glove box assembly is seated properly. Is the yellow 2-pin connector connected properly?	Go to Step 4	Seat passenger Air Bag assembly yellow 2-pin connector properly. Go to Step 7
4	1. Disconnect and inspect the passenger air bag assembly yellow 2-pin connector located behind the glove box assembly. 2. If ok, reconnect the passenger air bag assembly 2-pin connector. 3. Ignition switch "ON." Is DTC 15 current?	Go to Step 5	Go to Step 7
5	1. Ignition switch "Off." 2. Disconnect SRS coil and passenger air bag assembly, yellow 2-pin connector located at the base of the steering column and behind the glove box assembly. 3. Connect 5-8840-2421-0 SRS driver / passenger load tool and appropriate adapters to SRS coil and passenger air bag assembly harness connectors. 4. Ignition switch "ON." Is DTC 15 Current?	Go to Step 6	Ignition switch "Off." Replace the passenger air bag assembly. Go to Step 7
6	1. Ignition switch "Off." 2. There has been an increase in the total circuit resistance of the passenger inflator deployment loop. 3. Use the high resolution ohmmeter mode of the DVM while checking circuits IB07-YEL/RED and IB08-YEL/GRN, and SDM connector terminal "15" and "16" to locate the root cause. Was a fault found?	Replace SRS harness. Go to Step 7	Go to Chart A
7	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was This step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 7

An intermittent condition is likely to be caused by a short between circuits IB07-YEL/RED and IB08-YEL/GRN,

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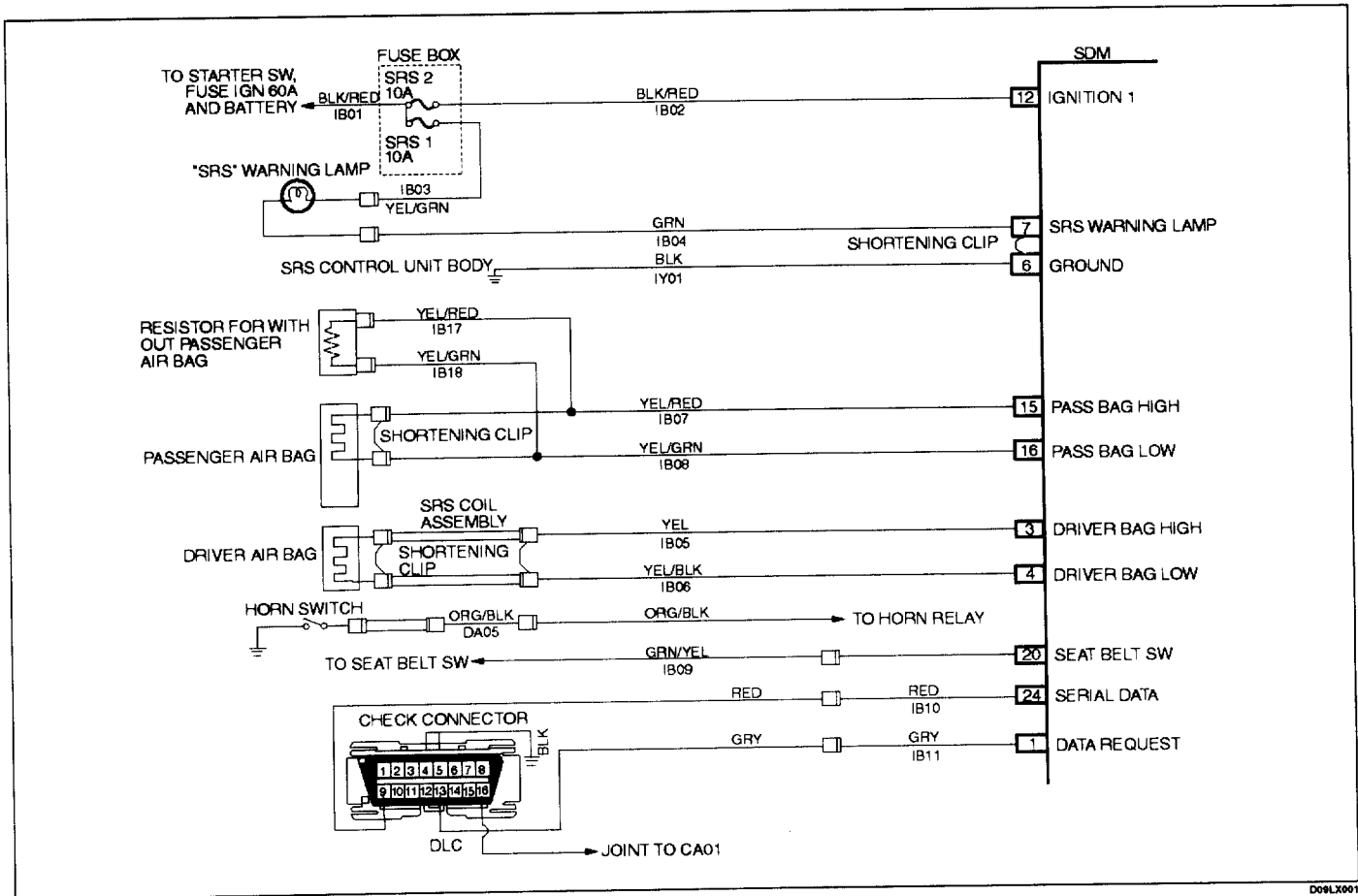
or a malfunctioning shorting clip on the passenger air bag assembly which would require replacement of the air bag assembly. The test for this diagnostic trouble code is only run while "AIR BAG" warning lamp is

performing the bulb check, unless DTC 17 or DTC 26 is detected. When a scan tool "Clear Codes" command is issued and the malfunction is still present, the DTC will not reappear until the next ignition cycle.

DTC 16 Passenger Deployment loop Resistance Low

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Repeat the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Using scan tool data list function, read and record the passenger deployment loop resistance. Is passenger resist. less than 1.4 ohms?	Go to Step 3	Go to Chart A
3	1. Ignition switch "Off." 2. Make sure the passenger air bag assembly yellow 2-pin connector located behind the glove box assembly is seated properly. Is the yellow 2-pin connector connected properly?	Go to Step 4	Seat passenger air bag assembly yellow 2-pin connector properly. Go to Step 7
4	1. Disconnect and inspect the passenger air bag assembly yellow 2-pin connector located behind the glove box assembly. 2. If ok, reconnect the passenger air bag assembly 2-pin connector. 3. Ignition switch "ON." Is DTC 16 Current?	Go to Step 5	Go to Step 7
5	1. Ignition switch "Off." 2. Disconnect SRS coil and passenger air bag assembly, yellow 2-pin connector located at the base of the steering column and behind the glove box assembly. 3. Connect 5-8840-2421-0 SRS driver/passenger load tool and appropriate adapters to SRS coil and passenger air bag assembly harness connectors. 4. Ignition switch "ON." Is DTC 16 current?	Go to Step 6	Ignition switch "Off." Replace the passenger air bag assembly. Go to Step 7
6	1. Ignition switch "Off." 2. There has been a decrease in the total circuit resistance of the passenger inflator deployment loop. 3. Use the high resolution ohmmeter mode of the DVM while checking circuits IB07-YEL/RED and IB08-YEL/GRN, and SDM connector terminal "15" and "16" to locate the root cause. Was a fault found?	Replace SRS harness. Go to Step 7	Go to Chart A
7	1. Reconnect all components, ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 7

DTC 17 Passenger Deployment Loop Open



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Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. During "Continuous Monitoring" diagnostics, a fixed amount of current is flowing in the deployment loop. This produces proportional voltage drops in the loop. By monitoring the voltage difference between "Passenger Bag High" and "Passenger Bag Low", the SDM calculates the combined resistance of the passenger air bag assembly, harness wiring circuits IB07-YEL/RED AND IB08-YEL/GRN, and connector terminal contact.

DTC Will Set When:

The voltage difference between "Passenger Bag High" terminal "15" and "Passenger Bag Low" terminal "16" is above or equal to a specified value for 500 milliseconds during "Continuous Monitoring".

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

The voltage difference between "Passenger Bag High" terminal "15" and "Passenger Bag Low" terminal "16" is below a specified value for 500 milliseconds during "Continuous Monitoring".

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the malfunction is in the SDM.
3. This test verifies proper connection of the yellow 2-pin connector.
4. This test checks for proper contact and/or corrosion of the shorting clip in the yellow 2-pin connector terminals.
5. The test checks for a malfunctioning passenger air bag assembly.
6. This test determines whether the open in the wiring.

Diagnostic Aids:

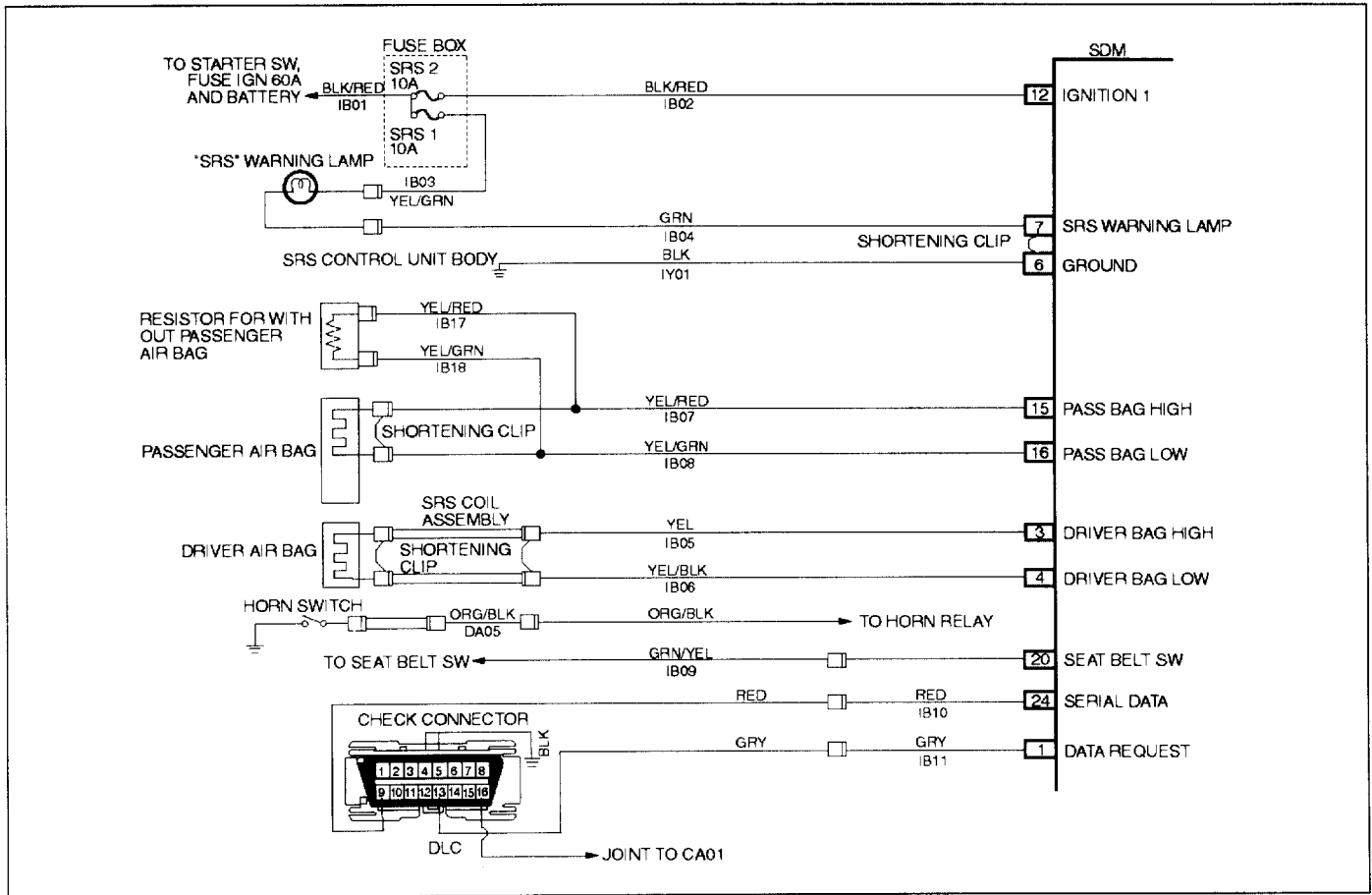
An intermittent condition is likely to be caused by a poor connection at the passenger air bag assembly harness connector terminals "1" and "2", SDM terminals "15" and "16", or an open in circuits IB07-YEL/RED and IB08-YEL/GRN.

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DTC 17 Passenger Deployment Loop Open

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Using scan tool data list function, read and record the passenger differential voltage. Is passenger VDIF 0.4 volts or more?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF". 2. Make sure the passenger air bag assembly yellow 2-pin connector located behind the glove box assembly is seated properly. Is the yellow 2-pin connector connected properly?	Go to Step 4	Seat passenger air bag assembly yellow 2-pin connector properly. Go to Step 7
4	1. Disconnect and inspect the passenger air bag assembly yellow 2-pin connector located behind the glove box assembly. 2. If ok, reconnect the passenger air bag assembly 2-pin connector. 3. Ignition switch "ON". Is DTC 17 current?	Go to Step 5	Go to Step 7
5	1. Ignition switch "Off." 2. Disconnect SRS coil and passenger air bag assembly, yellow 2-pin connector located at the base of the steering column and behind the glove box assembly. 3. Connect 5-8840-2421-0 SRS driver / passenger load tool and appropriate adapters to SRS coil and passenger air bag assembly harness connectors. 4. Ignition switch "ON." Is DTC 17 current?	Go to Step 6	Ignition switch "Off." Replace the passenger air bag assembly. Go to Step 7
6	1. Ignition switch "Off." 2. There has been an open circuit resistance in the passenger deployment loop. 3. Use the high resolution ohmmeter mode of the DVM while checking circuits IB07-YEL/RED and IB08-YEL/GRN, and SDM connector terminal "15" and "16" to locate the root cause. Was a fault found?	Replace SRS harness. Go to Step 7	Go to Chart A
7	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Go to the "SRS Diagnostic System Check"	Go to Step 7

DTC 18 Passenger Deployment Loop Short To Ground



Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. The SDM monitors the voltages at "Driver Bag Low" terminal "4" and "Passenger Bag Low" terminal "16" to detect short to ground in the air bag assembly circuits.

DTC Will Set When:

Neither of the two air bag assemblies is open.
 "Ignition 1" is within the normal operating voltage range.
 Once these conditions are met and the voltage at
 "Passenger Bag Low" is below a specified value, DTC
 18 will set. This test is run once each ignition cycle and
 "Continuous Monitoring".

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

This malfunction is no longer occurring and the ignition switch is turned "OFF".

DTC Chart Test Description:

Number(s) below refer to circled number(s) on the diagnostic chart.

2. This test determines whether the SDM is malfunctioning.
3. This test isolates the malfunction to one side of the passenger air bag assembly yellow 2-pin connector behind glove box compartment.
4. This test determines whether the malfunction is in circuit IB07-YEL/RED.
5. This test determines whether the malfunction is in CKT IB08-YEL/GRN.

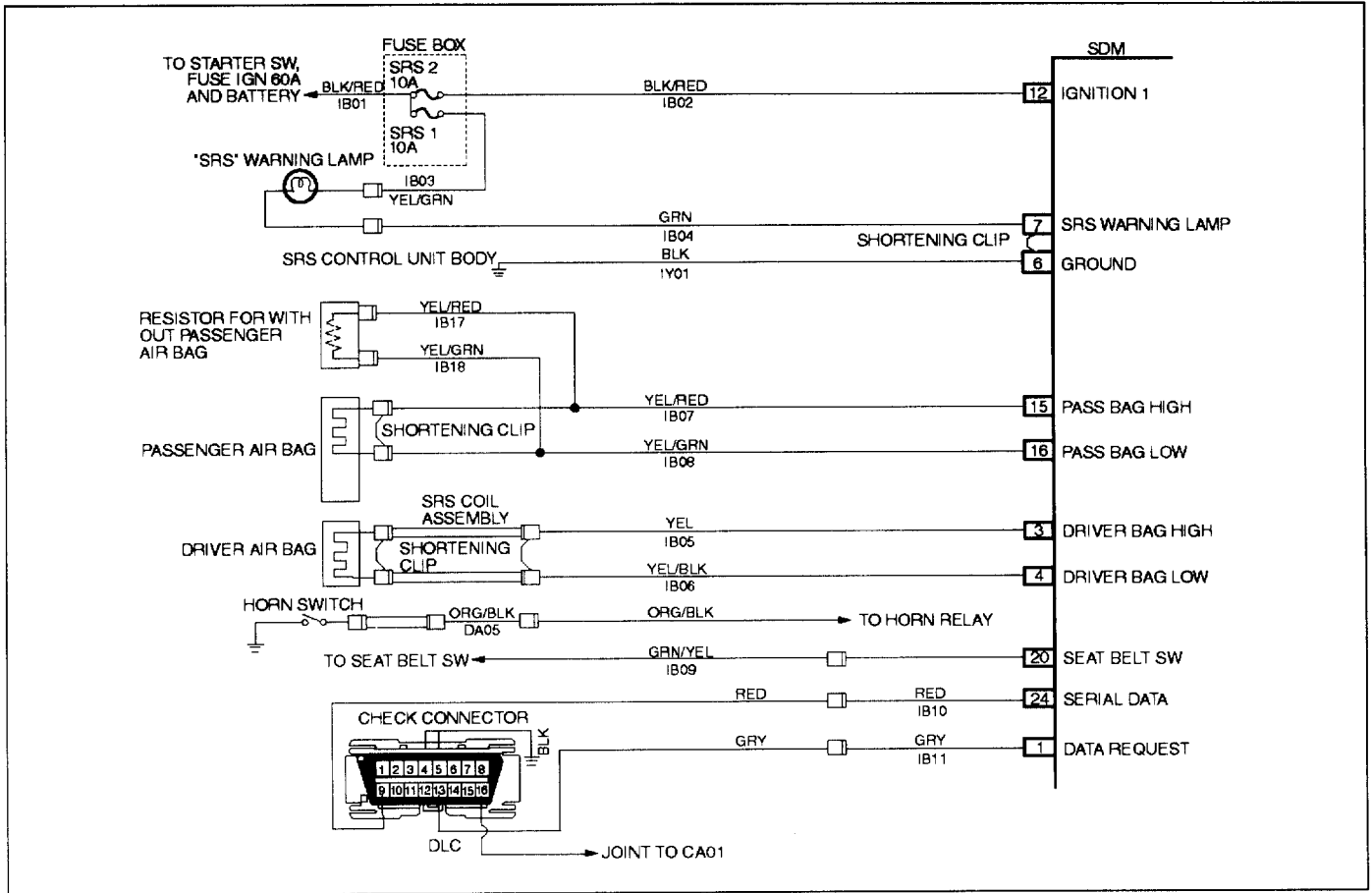
Diagnostic Aids:

An intermittent condition is likely to be caused by a short to ground in the passenger air bag assembly circuit. Inspect circuits IB07-YEL/RED and IB08-YEL/GRN carefully for cutting or chafing. If the wiring pigtail of the passenger air bag assembly is damaged, the component must be replaced.

9J1-20 RESTRAINT CONTROL SYSTEM**DTC 18 Passenger Deployment Loop Short To Ground**

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Ignition switch "OFF." 3. Connect scan tool data link connector. follow directions as given in the scan tool operator's MANUAL. 4. Ignition switch "ON." 5. Read passenger sense LO. Is passenger sense LO less than 1.5 volts?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF." 2. Disconnect passenger air bag assembly yellow 2-pin connector behind the glove box assembly. 3. Leave driver air bag assembly connected. 4. Connect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter to passenger air bag assembly harness connector. 5. Ignition switch "ON." Is DTC 18 current?	Go to Step 4	Ignition switch "OFF." Replace passenger air bag assembly . Go to Step 6
4	1. Ignition switch "OFF". 2. Disconnect SRS driver / passenger load tool 3. Measure resistance on SDM harness connector from terminal "15" to terminal "16" (ground). Does 5-8840-0285-0 display "OL" (Infinite)?	Go to Step 5	Replace SRS Harness. Go to Step 6
5	Measure resistance on SDM harness connector from terminal "16" to terminal "6" (ground). Does 5-8840-0285-0 display "OL" (Infinite)?	Go to Chart A	Replace SRS Harness. Go to Step 6
6	1. Reconnect all components and ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Go to the "SRS Diagnostic system Check"	Go to Step 6

DTC 19 Passenger Deployment Loop Short To Voltage



D08LX001

Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. The SDM monitors the voltages at "Driver Bag Low" terminal "4" and "Passenger Bag Low" terminal "16" to detect short to B+ in the air bag assembly circuits.

DTC Will Set When:

"Ignition 1" is within the normal operating voltage range. Once these conditions are met and the voltage at "Passenger Bag Low" is above a specified value, DTC 19 will set. This test is run once each ignition cycle and "Continuous Monitoring".

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets DTC 19 and also DTC 71.

DTC Will Clear When:

The SDM is replaced.

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the malfunction is in the SDM.
3. This test isolates the malfunction to one side of the passenger air bag assembly yellow 2-pin connector behind glove box assembly.
4. This test determines whether the malfunction is in circuit IB07-YEL/RED.
5. This test determines whether the malfunction is in circuit IB08-YEL/GRN.

Diagnostic Aids:

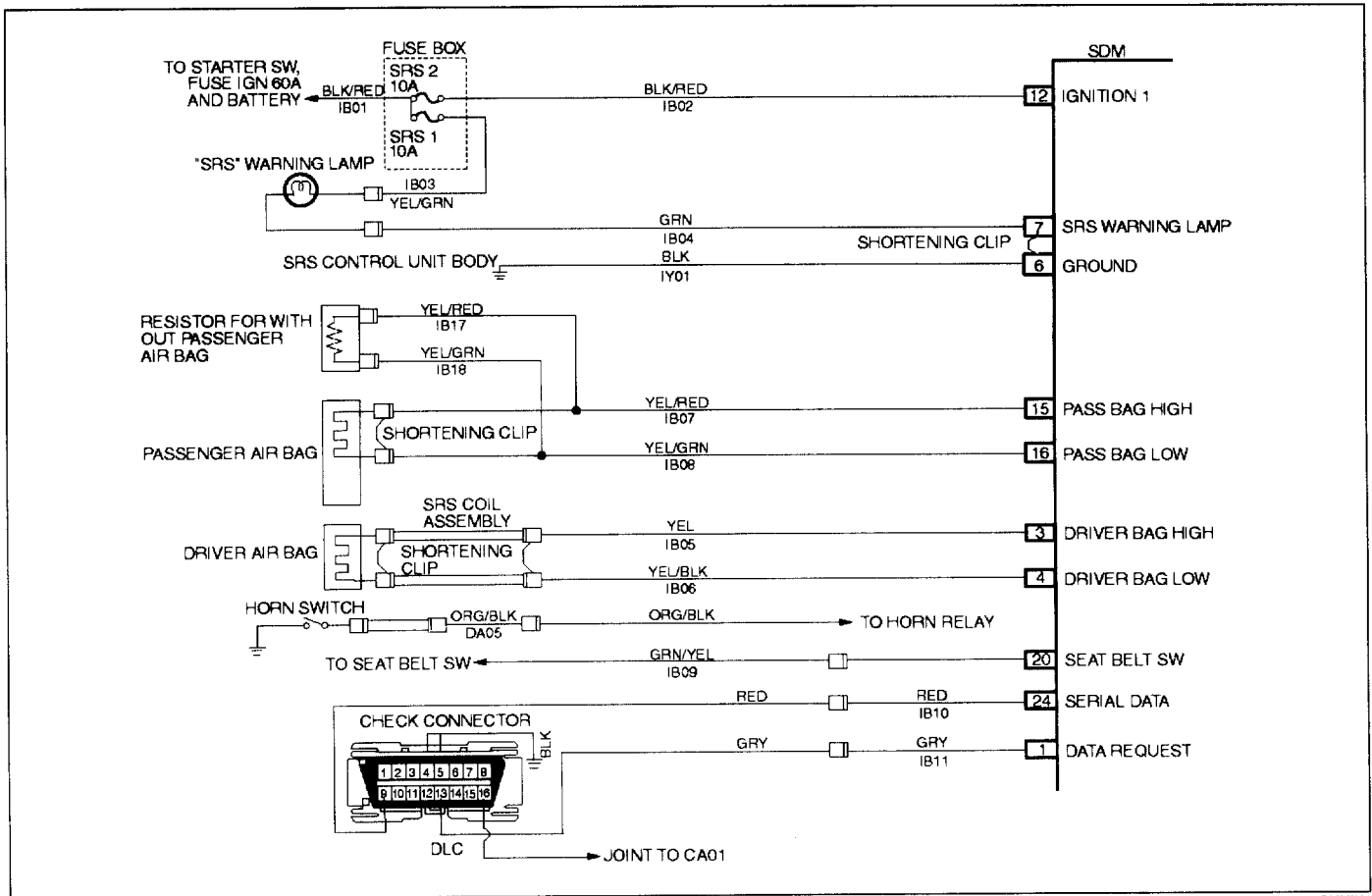
An intermittent condition is likely to be caused by a short to B+ in the passenger air bag assembly circuit. Inspect circuits IB07-YEL/RED and IB08-YEL/GRN carefully for cutting or chafing. If the wiring pigtail of the passenger air bag assembly is damaged, the component must be replaced. A careful inspection of circuits IB07-YEL/RED and IB08-YEL/GRN, including the passenger air bag assembly pigtail is essential to ensure that the replacement SDM will not be damaged.

DTC 19 Passenger Deployment Loop Short To Voltage

CAUTION: When DTC 19 has been set, it is necessary to replace the SDM. Setting DTC 19 will also cause DTC 71 to set. When a scan tool "CLEAR CODES" command is issued and the malfunction is no longer present, DTC 71 will remain current. Ensure that the short to voltage condition is repaired prior to installing a replacement SDM to avoid damaging the SDM.

Step	Action	Yes	No
1	Perform the "SRS Diagnostic System Check" Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Repeat the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM With correct terminal adapter from 5-8840-0385-0. 2. Ignition switch "OFF." 3. Connect scan tool data link connector. follow directions as given in the scan tool operator's manual. 4. Ignition switch "ON." 5. Read passenger sense LO. Is passenger sense LO more than 3.5 volts?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF". 2. Disconnect passenger air bag assembly yellow 2-pin connector behind the glove box assembly. 3. Leave driver air bag assembly connected. 4. Connect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter to passenger air bag assembly harness connector. 5. Ignition switch "ON." Is passenger sense LO more than 3.5 volts?	Go to Step 4	Ignition switch "OFF." Replace passenger air bag assembly. Go to Step 6
4	1. Ignition switch "OFF." 2. Disconnect SDM. 3. Disconnect SRS driver / passenger load tool. 4. Measure resistance on SDM harness connector from terminal "15" to terminal "12" (ignition). Does 5-8840-0285-0 display "OL" (infinite)?	Go to Step 5	Replace SRS harness. Go to Step 6.
5	Measure resistance on SDM harness connector from terminal "16" and terminal "12" (ignition). Does 5-8840-0285-0 display "OL" (infinite)?	Go to Chart A	replace SRS harness. Go to Step 6
6	1. Reconnect all components ensure all component are properly mounted. 2. Ignition switch "ON". Is passenger senslo less than 3.5 volts?	Ignition switch "OFF." Replace SDM. Go to Step 7	Go to Chart A
7	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 7

DTC 21 Driver Deployment Loop Resistance High



D09LX001

Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges.

The SDM then proceeds with the "Resistance Measurement Test" "Driver Bag Low" terminal "4" is grounded through a current sink and the driver current source connected to "Driver Bag High" terminal "3" allows a known amount of current to flow. By monitoring the voltage difference between "Driver Bag High" and "Driver Bag Low", the SDM calculates the combined resistance of the driver air bag assembly, SRS coil assembly, harness wiring circuits IB05-YEL and IB06-YEL/BLK, and connector terminal contact.

DTC Will Set When:

The combined resistance of the driver air bag assembly, SRS Coil assembly, harness wiring circuits IB05-YEL and IB06-YEL/BLK, and connector terminal contact is above a specified value. This test run once each ignition cycle during the "Resistance Measurement Test" when:

1. No "higher priority faults" are detected during "Turn-ON"

2. "Ignition 1" voltage is in the specified value.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets DTC 21.

DTC Will Clear When:

The ignition switch is turned "OFF".

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the malfunction is in the SDM.
3. This test verifies proper connection of the yellow 2-pin connector at the base of the steering column.
4. This test checks for proper contact and/or corrosion of the 2-pin connector terminals at the base of steering column.
5. This test isolate the malfunction to one side of the SRS coil assembly yellow 2-pin connector located at the base of the steering column.
6. This test determines whether the malfunction is due to high resistance in the wiring.
7. This test determines whether the malfunction is in the SRS coil assembly or the driver air bag assembly.

Diagnostic Aids:

An intermittent condition is likely to be caused by a poor connection at terminals "1" and "2" of the SRS coil 2-pin connector at the base of the steering column, terminal "1" and "2" of the driver air bag assembly 2-pin connector at the top of the steering column, SDM terminals "3" and "4" or a poor wire to terminal

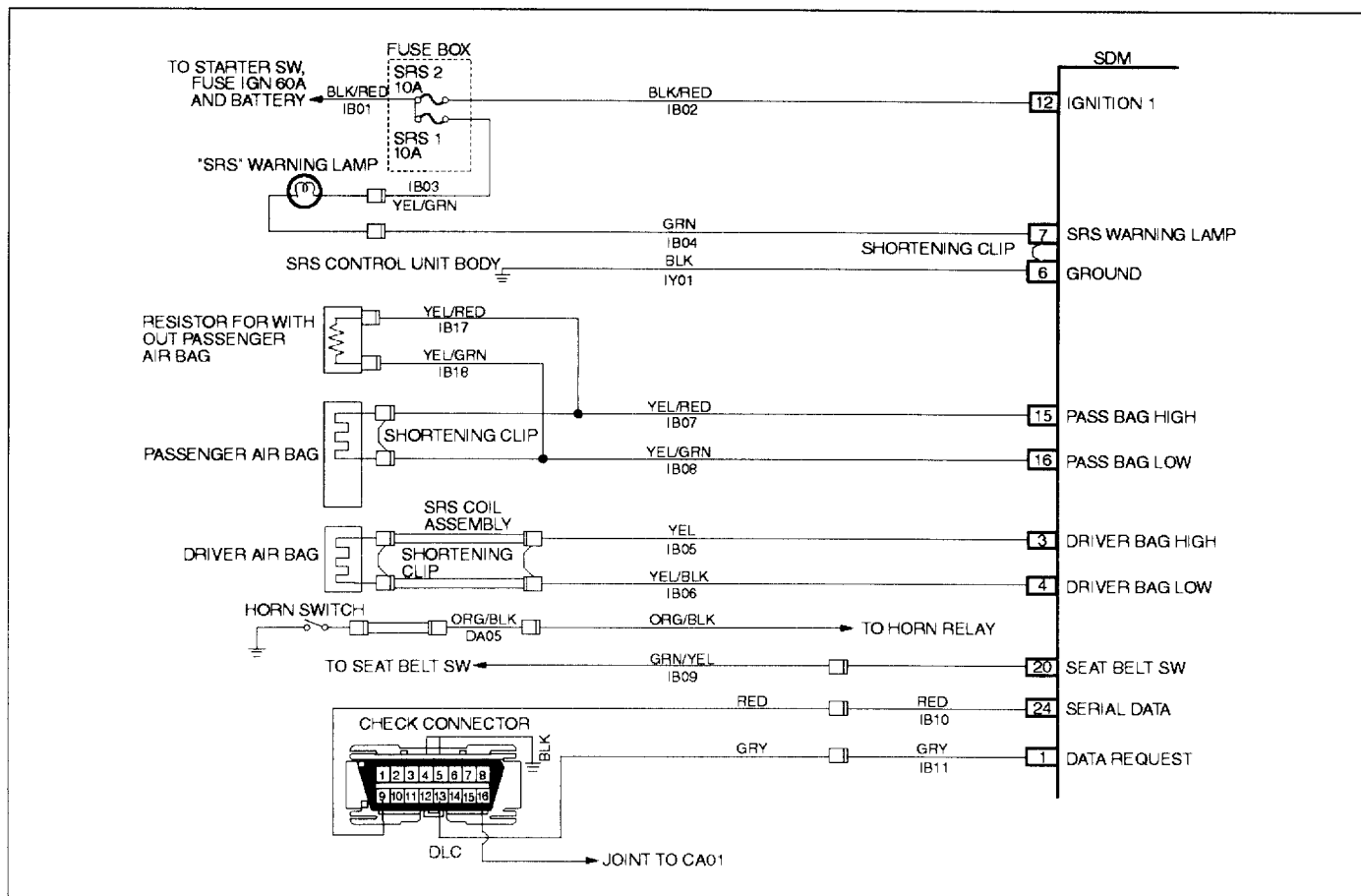
connection in circuit IB05-YEL or IB06-YEL/BLK. The test for this diagnostic trouble code is only run while the "AIR BAG" warning lamp is performing the bulb check, unless DTC 17 or DTC 26 is detected. When a scan tool "Clear Codes" command is issued and the malfunction is still present, the DTC will not reappear until the next ignition cycle.

DTC 21 Driver Deployment Loop Resistance High

Step	Action	Yes	No
1	Perform the "SRS Diagnostic System Check". Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Repeat the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Use scan tool data list function, read and record the driver deployment loop resistance. Is driver resistance more than 3.7 ohms?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF." 2. Disconnect SRS coil assembly yellow 2-pin connector located at base of steering column is seated properly. Is the 2-pin connector connected properly?	Go to Step 4	Seat SRS coil assembly 2-pin connector properly. Go to Step 8
4	1. Disconnect and inspect the SRS coil assembly yellow 2-Pin connector located base of steering column. 2. If ok, reconnect the SRS coil assembly yellow 2-pin connector. 3. Ignition switch "ON." Is DTC 21 current?	Go to Step 5	Go to Step 8
5	1. Ignition switch "OFF." 2. Disconnect SRS coil and passenger air bag assembly, yellow 2-pin connector located at the base of steering column and behind the glove box assembly. 3. Connect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter to SRS coil and passenger air bag assembly harness connectors. 4. Ignition switch "ON." Is DTC 21 current?	Go to Step 6	Go to Step 7
6	1. Ignition switch "Off. " 2. There has been a increase in the total circuit resistance of the driver deployment loop. 3. Use the high resolution ohmmeter mode of the DVM while checking circuits IB05-YEL and IB06-YEL/BLK, and SDM connector terminal "3" and "4" to locate the root cause. Was a fault found?	Replace SRS harness. Go to Step 8	Go to Chart A

Step	Action	Yes	No
7	1. Ignition switch "OFF." 2. Disconnect SRS driver / passenger load tool from SRS coil assembly harness connector. 3. Connect SRS driver / passenger load tool 5-8840-2421-0 on the top of steering column. 4. Reconnect SRS coil assembly harness connector as the base of steering column. 5. Ignition switch "ON." Is DTC 21 current?	Ignition switch "OFF." Replace SRS coil assembly. Go to Step 8	Ignition switch "OFF." Replace driver air bag assembly. Go to Step 8
8	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 8

DTC 22 Driver Deployment Loop Resistance Low



D09LX001

Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges.

The SDM then proceeds with the "Resistance Measurement Test" "Driver Bag Low" terminal "4" is grounded through a current sink and the driver current source connected to "Driver Bag High" terminal "3" allows a known amount of current to flow. By monitoring the voltage difference between "Driver Bag High" and "Driver Bag Low" the SDM calculates the combined resistance of the driver air bag assembly, SRS coil assembly, harness wiring circuits IB05-YEL and IB06-YEL/BLK and connector terminal contact.

DTC Will Set When:

The combined resistance of the driver air bag assembly, SRS Coil assembly, harness wiring circuits IB05-YEL and IB06-YEL/BLK and connector terminal contact is above a specified value. This test is run once each ignition cycle during the "Resistance Measurement Test" when:

1. No "higher priority faults" are detected during "Turn-ON"

2. "Ignition 1" voltage is in the specified value.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets DTC 22.

DTC Will Clear When:

The ignition switch is turned "OFF."

DTC Chart Test Description:

Number(s) below refer to circled number(s) on the diagnostic chart:

2. This test determines whether the malfunction is in the SDM.
3. This test verifies proper connection of the yellow 2-pin connector at the base of the steering column.
4. This test checks for proper operation of the shorting clip in the yellow 2-pin connector.
5. This test isolate the malfunction to one side of the SRS coil assembly yellow 2-pin connector located at the base of steering column.
6. This test determines whether the malfunction is due to shortening in the wiring.
7. This test determines whether the malfunction is in the SRS coil assembly or the driver air bag assembly.

Diagnostic Aids:

An intermittent condition is likely to be caused by a short between circuit IB05-YEL or IB06-YEL/BLK or a malfunctioning shorting clip on the driver air bag assembly or SRS coil assembly which would require replacement of the component. The test for this

diagnostic trouble code is only run while the "AIR BAG" warning lamp is performing the bulb check, unless DTC 17 or DTC 26 is detected. When a scan tool "Clear Codes" command is issued and the malfunction is still present, the DTC will not reappear until the next ignition cycle.

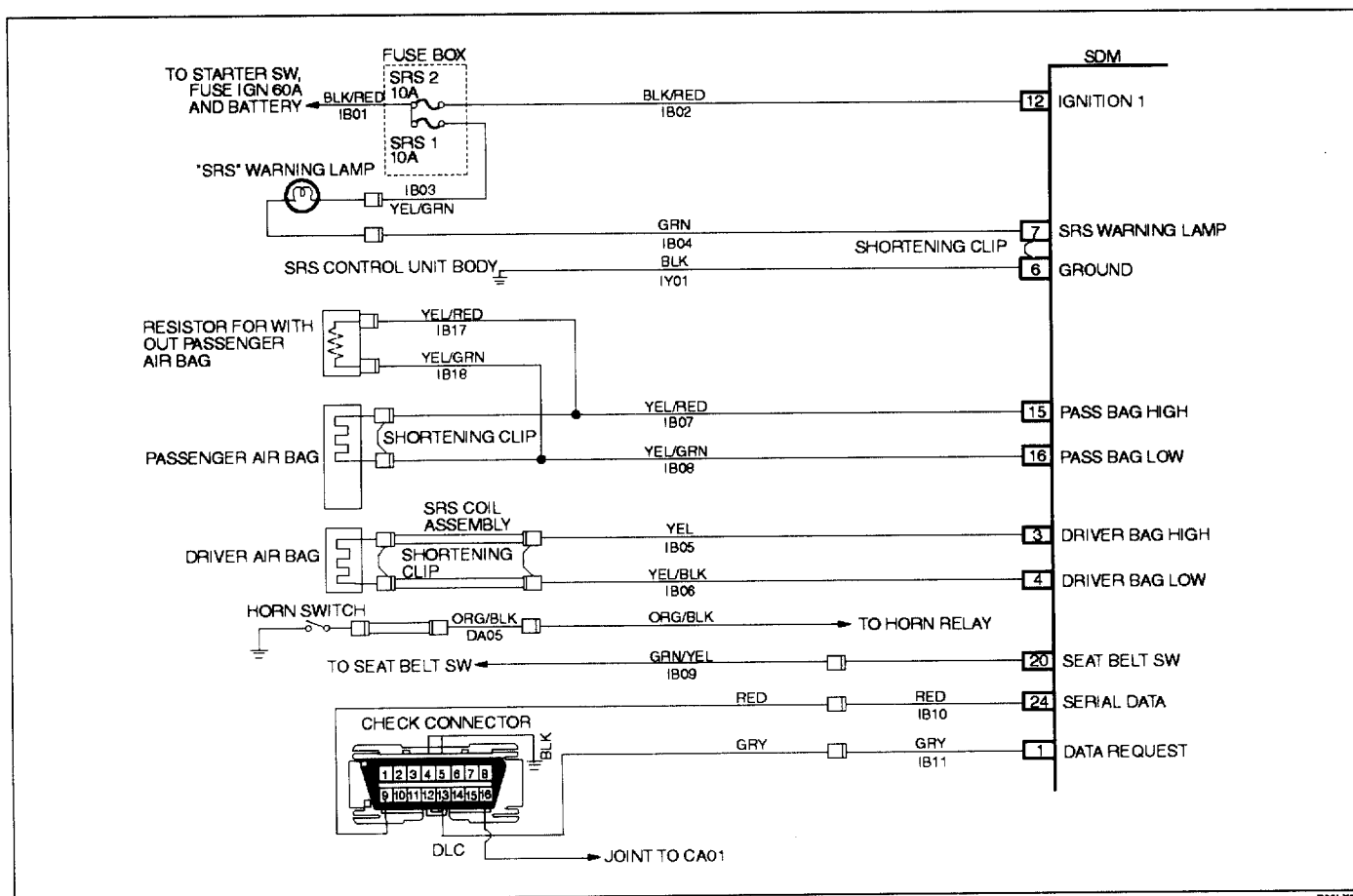
DTC 22 Driver Deployment Loop Resistance Low

Step	Action	Yes	No
1	Perform the "SRS Diagnostic System Check." WAS THE "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Use scan tool data list function, read and record the driver deployment loop resistance. Is driver deployment loop resistance less than 1.7 OHMS?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF." 2. Make sure the SRS coil assembly yellow 2-pin connector located at the base of steering column is seated properly. Is the 2-pin connector connected properly?	Go to Step 4	Seat driver air bag assembly 2-pin connector properly. Go to Step 8
4	1. Disconnect and inspect the SRS coil assembly yellow 2-pin connector located base of steering column. 2. If ok, reconnect the SRS coil assembly yellow 2-pin connector. 3. Ignition switch "ON." Is DTC 22 current?	Go to Step 5	Go to Step 8
5	1. Ignition switch "OFF." 2. Disconnect SRS coil and passenger air bag assembly, yellow 2-pin connector located at the base of steering column and behind the glove box assembly. 3. Connect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter to SRS coil and passenger air bag assembly harness connectors. 4. Ignition switch "ON." Is DTC 22 current?	Go to Step 6	Go to Step 7
6	1. Ignition switch "OFF." 2. There has been a decrease in the total circuit resistance of the driver deployment loop. 3. Use the high resolution ohmmeter mode of the DVM while checking circuits IB05-YEL and IB06-YEL/BLK, and SDM connector terminal "3" and "4" to locate the root cause. Was a fault found?	Replace SRS harness. Go to Step 8	Go to Chart A
7	1. Ignition switch "OFF." 2. Disconnect SRS driver / passenger load tool from driver air bag assembly harness connector. 3. Connect SRS driver / passenger load tool 5-8840-2421-0 to the top of steering column 2-pin connector. 4. Reconnect SRS coil assembly harness connector as the base of steering column. 5. Ignition switch "ON." Is DTC 22 current?	Ignition switch "off." Replace SRS coil assembly. Go to Step 8	Ignition switch "OFF." Replace driver air bag assembly. Go to Step 8

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Step	Action	Yes	No
8	1. Reconnect all components, ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Go to the "SRS Diagnostic System Check"	Go to Step 8

DTC 24 Driver Deployment Loop Short To Ground



Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. The SDM monitors the voltage at "Driver Bag Low" terminal "4" and "passenger Bag Low" terminal "16" to detect shorts to ground in the air bag assembly circuits.

DTC Will Set When:

Neither of the two air bag assemblies is open. "Ignition 1" is within the normal operating voltage range. This test is run once each ignition cycle and "Continuous Monitoring". Once these conditions are met and the voltage at "Driver Bag Low" is below a specified value, DTC 24 will set.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

The malfunction is no longer occurring and the ignition is turned "OFF".

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the SDM is malfunctioning
3. This test isolates the malfunction to one side of the SRS coil assembly yellow 2-pin connector at the base of the steering column.
4. This test determines whether the malfunction is in circuit IB05-YEL.
5. This test determines whether the malfunction is in circuit IB06-YEL/BLK.
6. This test determines whether the malfunction is in the SRS coil assembly or the driver air bag assembly.

Diagnostic Aids:

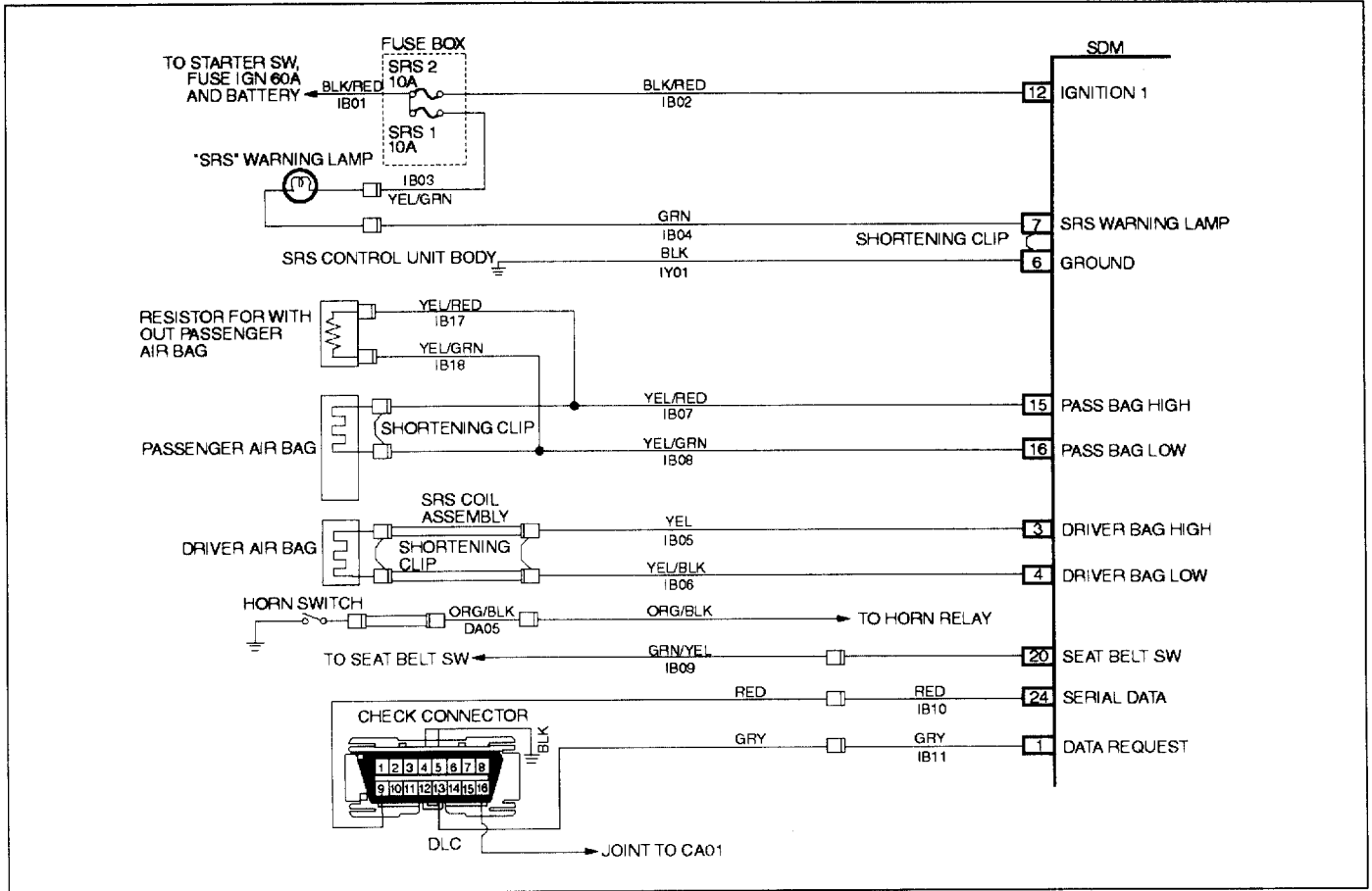
An intermittent condition is likely to be caused by a short to ground in the driver air bag assembly circuit. Inspect circuits IB05-YEL and IB06-YEL/BLK carefully for cutting or chafing.

9J1-30 RESTRAINT CONTROL SYSTEM

DTC 24 Driver Deployment Loop Short To Ground

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. Ignition switch "OFF." 3. Connect scan tool data link connector. follow directions as given in the scan tool operator's manual. 4. Ignition switch "ON." 5. Read driver sense LO. Is driver sense LO less than 1.5 volts?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF." 2. Disconnect SRS coil assembly yellow 2-pin connector located at base of the steering column. leave passenger air bag assembly connected. 3. Connect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter to SRS coil assembly harness connector. 4. ignition switch "ON." Is DTC 24 current?	Go to Step 4	Go to Step 6
4	1. Ignition switch "OFF." 2. Disconnect SDM. 3. Disconnect SRS driver / passenger load tool. 4. Measure resistance on SDM harness connector "3" to terminal "6" (ground). Does 5-8840-0285-0 display "OL" (infinite)?	Go to Step 5	Replace SRS harness. Go to Step 7
5	measure resistance on SDM harness connector from terminal "4" to terminal "6" (ground). Does 5-8840-0285-0 display "OL" (infinite)?	Go to Chart A	Replace SRS harness. Go to Step 7
6	1. Ignition switch "OFF." 2. Disconnect SRS driver / passenger load tool 5-8840-2421-0 from SRS coil assembly harness connector. 3. connect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter 5-8840-0385-0 to driver air bag assembly harness connector. located top of the steering column 2-pin connector. 4. Reconnect SRS coil assembly harness connector as the base of steering column. 5. Ignition switch "ON." Is DTC 24 current?	Ignition switch "OFF." Replace SRS coil assembly. Go to Step 7	Ignition switch "OFF." Replace driver air bag assembly. Go to Step 7
7	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Go to the "SRS Diagnostic System Check"	Go to Step 7

DTC 25 Driver Deployment Loop Short To Voltage



D09LX001

Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. The SDM monitors the voltage at "Driver Bag Low" terminal "4" and "Passenger Bag Low" terminal "16" to detect shorts to B+ in the air bag assembly circuits.

DTC Will Set When:

"Ignition 1" is in the normal operating voltage range. This test is run once each ignition cycle and "Continuous monitoring". Once these conditions are met and the voltage at "Driver Bag Low" is above a specified value, DTC 25 will set.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets DTC 25 and also DTC 71

DTC Will Clear When:

The SDM is replaced.

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the SDM is malfunctioning.
3. This test isolates the malfunction to one side of the driver air bag assembly yellow 2-pin connector at the base of steering column.
4. This test determines whether the malfunction is in circuit IB05-YEL.
5. This test determines whether the malfunction is in circuit IB06-YEL/BLK.
6. This test determines whether the malfunction is in the SRS coil assembly or the driver air bag assembly.

Diagnostic Aids:

An intermittent condition is likely to be caused by a short to B+ in the driver air bag assembly circuit. Inspect circuits IB05-YEL and IB06-YEL/BLK carefully for cutting or chafing. If the wiring pigtail of the driver air bag assembly and SRS coil assembly is damaged, the components must be replaced. A careful inspection of circuits IB05-YEL and IB06-YEL/BLK, including the SRS coil assembly and driver air bag assembly is essential to ensure that the replacement SDM will not be damaged.

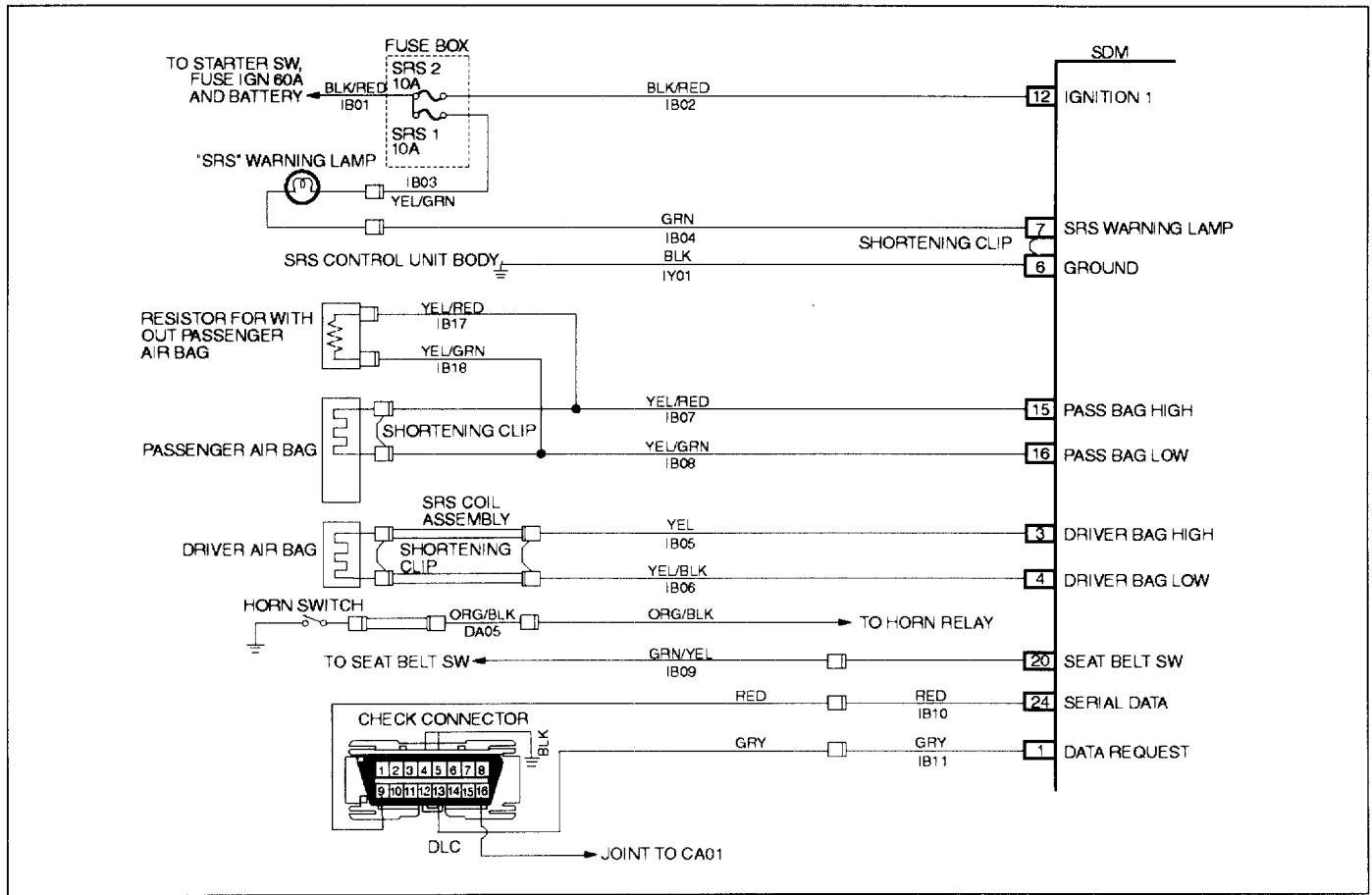
DTC 25 Driver Deployment Loop Short To Ignition

CAUTION: When DTC 25 has been set, it is necessary to replace the SDM. Setting DTC 25 will also cause DTC 71 to set. When a scan tool "CLEAR CODES" command is issued and the malfunction is no longer present, DTC 71 will remain current. Ensure that the short to voltage condition is repaired prior to installing a replacement SDM to avoid damaging the SDM.

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. Ignition switch "OFF." Connect scan tool data link connector. follow directions as given in the scan tool operator's manual. 2. Ignition switch "ON." 3. Read driver sense LO . Is driver sense LO more than 3.5 volts?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF." 2. Disconnect SRS coil assembly yellow 2-pin connector at the base of the steering column. leave passenger air bag assembly connected. 3. Connect SRS driver /passenger load tool 5-8840-2421-0 and appropriate adapter to SRS coil assembly harness connector. 4. Ignition switch "ON." Is driver sense LO more than 3.5 volts?	Go to Step 4	Go to Step 6
4	1. Ignition switch "OFF." 2. Disconnect SDM. 3. Disconnect SRS driver /passenger load tool. 4. Measure resistance on SDM harness connector "3" to terminal "12" (ignition). Does 5-8840-0285-0 display "OL" (infinite)?	Go to Step 5	Replace SRS harness. Go to Step 7
5	Measure resistance on SDM harness connector from terminal "4" to terminal "12" (ignition). Does 5-8840-0285-0 display "OL" (infinite)?	Go to Chart A	Replace SRS harness. Go to Step 7
6	1. Ignition switch "OFF." 2. Disconnect SRS driver / passenger load tool 5-8840-2421-0 and appropriate adapter 5-8840-0385-0 to driver air bag assembly harness 2-pin connector located at top of the steering column. 3. Reconnect SRS coil assembly harness connector as the base of steering column. 4. Ignition switch "ON." Is driver sense LO more than 3.5 volts?	Ignition switch "OFF." Replace SRS coil assembly. Go to Step 7	Ignition switch "OFF." Replace driver air bag assembly. Go to Step 7
7	1. Reconnect all components, ensure all component are properly mounted. 2. Ignition switch "ON." Is passenger sense Lo less than 3.5 volts?	Ignition switch "OFF." Replace SDM. Go to Step 8	Go to Chart A

Step	Action	Yes	No
8	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Go to the "SRS Diagnostic System Check"	Go to Step 8

DTC 26 Driver Deployment Loop Open



Circuit Description:

When the ignition switch is turned "ON", the SDM will perform tests to diagnose critical malfunctions within itself. Upon passing these tests, "Ignition 1", and deployment loop voltages are measured to ensure they are within their respective normal voltage ranges. During "Continuous Monitoring" diagnostics, a fixed amount of current is following in the deployment loop. This produces proportional voltage drops in the loop. By monitoring the voltage difference between "Driver Bag High" and "Driver Bag Low", the SDM calculates the combined resistance of the driver air bag assembly, SRS coil assembly, harness wiring circuits IB05-YEL and IB06-YEL/BLK, and connector terminal contact.

DTC Will Set When:

The voltage difference between "Driver Bag High" terminal "3" and "Driver Bag Low" terminal "4" is above or equal to a specified value for 500 milliseconds during "Continuous Monitoring".

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

The voltage difference between "Driver Bag High" terminal "3" and "Driver Bag Low" terminal "4" is below a specified value for 500 milliseconds during "Continuous Monitoring".

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

2. This test determines whether the malfunction is in the SDM.
3. This test verifies proper connection of the yellow 2-pin connector at the base of the steering column.
4. This test checks for proper contact and/or corrosion of the yellow 2-pin connector at the base of the steering column.
5. This test isolates the malfunction to one side of the SRS coil assembly yellow 2-pin connector located at the base of steering column.
6. This test determines whether the open is in the wiring.
7. This test determines whether the malfunction is in the SRS coil assembly or the driver air bag assembly.

Diagnostic Aids:

An intermittent condition is likely to be caused by a poor connection at the driver air bag assembly harness 2-pin connector terminals "1" and "2" at the top of the

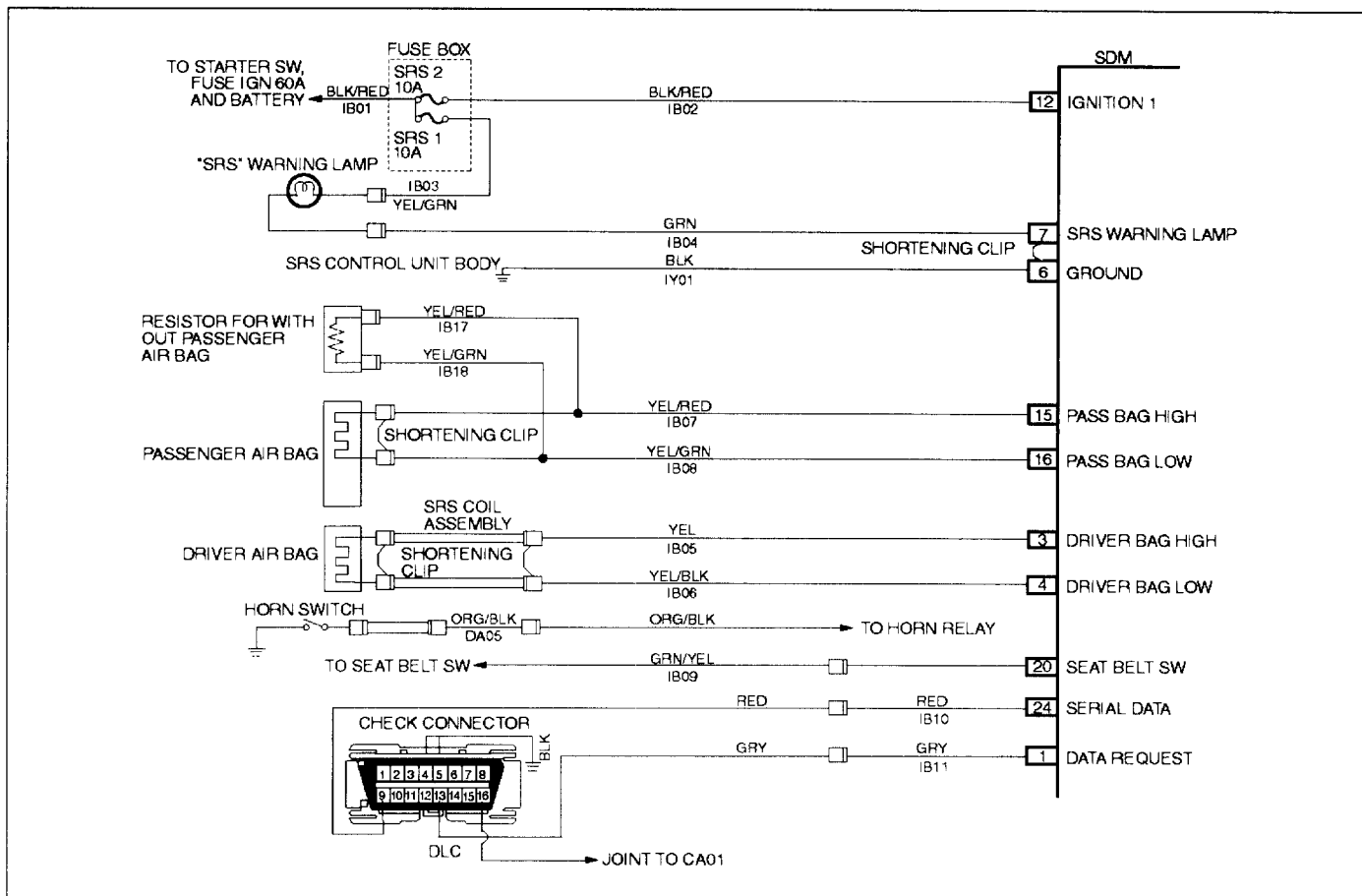
steering column, SRS coil assembly harness 2-pin connection terminals "1" and "2", SDM terminals "3"

and "4", or an open in circuits IB05-YEL and IB06-YEL/BLK.

DTC 26 Driver Deployment Loop Open

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2.	Go to the "SRS Diagnostic System Check"
2	1. When measurements are requested in this chart use 5-8840-0285-0 DVM with correct terminal adapter from 5-8840-0385-0. 2. use scan tool data list function, read and record the driver differential voltage. Is driver VDIF more than 4 volts?	Go to Step 3	Go to Chart A
3	1. Ignition switch "OFF." 2. Make sure the SRS coil assembly yellow 2-pin connector located at the base of steering column is seated properly. Is the yellow 2-pin connector connected properly?	Go to Step 4	Seat driver air bag assembly 2-pin connector. Go to Step 8
4	1. Disconnect and inspect the SRS coil assembly yellow 2-pin connector located base of steering column. 2. If ok, reconnect the SRS coil assembly yellow 2-pin connector. 3. Ignition switch "ON." Is DTC 26 current?	Go to Step 5	Go to Step 8
5	1. Ignition switch "OFF". 2. Disconnect SRS coil and passenger air bag assembly, yellow 2-pin connectors located at the base of steering column and behind the glove box assembly. 3. Connect SRS driver/passenger load tool 5-8840-2421-0 and appropriate adapter to SRS coil and passenger air bag assembly harness connectors. 4. Ignition switch "ON." Is DTC 26 current?	Go to Step 6	Go to Step 7
6	1. Ignition switch "OFF." 2. there has been an open circuit in the driver inflator deployment loop. 3. use the high resolution ohmmeter mode of the DVM while checking circuits IB05-YEL and IB06-YEL/BLK, and SDM connector terminal "3" and "4" to locate the root cause. Was a fault found?	Replace SRS harness. Go to Step 8	Go to Chart A
7	1. Ignition switch "OFF." 2. Disconnect SRS driver / passenger load tool from SRS coil assembly harness connector. 3. connect SRS driver / passenger load tool 5-8840-2421-0 on steering column 2-pin connector. 4. Reconnect SRS coil assembly harness connector at the base of steering column. 5. Ignition switch "ON." IS DTC 26 CURRENT?	Ignition switch "OFF." Replace SRS coil assembly. Go to Step 8	Ignition switch "OFF." Replace driver air bag assembly. Go to Step 8.
8	1. Reconnect all components ensure all component are properly mounted. 2. Clear diagnostic trouble codes. Was this step finished?	Repeat the "SRS Diagnostic System Check"	Go to Step 8

DTC 51 Deployment Event Commanded



D09LX001

Circuit Description:

The SDM contains a sensing device which converts vehicle velocity changes to an electrical signal. The electrical signal generated is processed by the SDM and then compared to a value stored in memory. When the generated signal exceeds the stored value, the SDM will cause current to flow through the air bag assembly deploying the air bags and causing DTC 51 to set.

DTC Will Set When:

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

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp records "Crash Data", and sets a diagnostic trouble code.

DTC Will Clear When:

The SDM is replaced.

DTC Chart Test Description:

Number(s) below refer to step number(s) on the diagnostic chart:

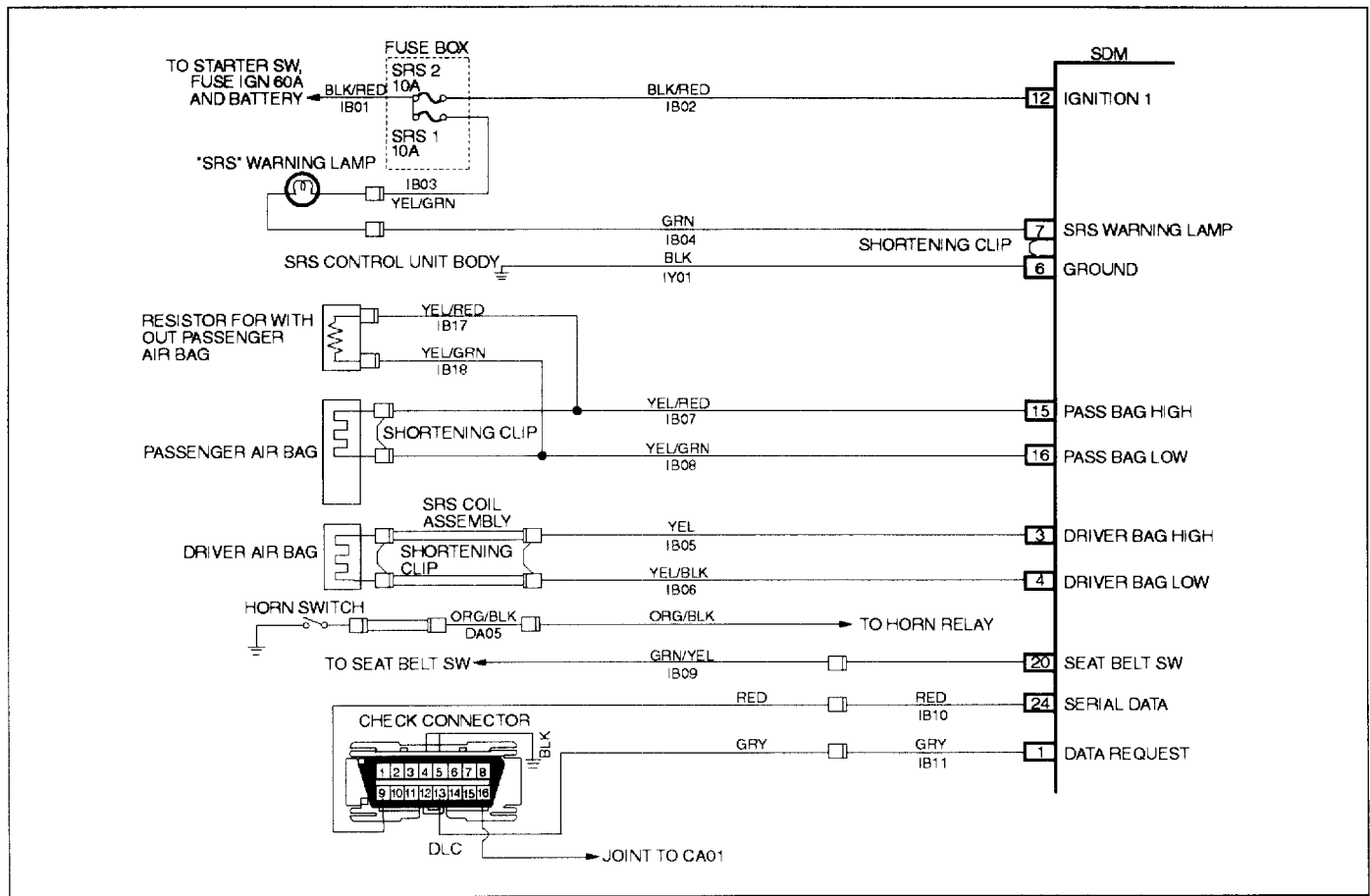
2. If air bag assembly (s) has not deployed, DTC 51 may have falsely set.
3. If DTC 51 has set with no signs of frontal impact, the diagnostic trouble code has falsely set.

DTC 51 Deployment Event Commanded

WARNING: DURING SERVICE PROCEDURES. BE VERY CAREFUL WHEN HANDLING A SENSING AND DIAGNOSTIC MODULE (SDM). NEVER STRIKE OR JAR THE SDM. NEVER POWER UP THE SRS WHEN THE SDM IS NOT RIGIDLY ATTACHED TO THE VEHICLE. ALL SDM AND MOUNTING BRACKET FASTENERS MUST BE CAREFULLY TORQUED AND THE ARROW MUST BE POINTING TOWARD THE FRONT OF THE VEHICLE TO ENSURE PROPER OPERATION OF THE SRS. THE SDM COULD BE ACTIVATED WHEN POWERED WHILE NOT RIGIDLY ATTACHED TO THE VEHICLE WHICH COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY.

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2.	Go to the "SRS Diagnostic System Check"
2	Ignition switch "OFF." Have air bag assemblies deployed?	Replace components and perform inspections as directed in "repairs and inspections required after an accident" in this section. clear diagnostic trouble codes. Repeat "SRS Diagnostic System Check"	Go to Step 3
3	Inspect front of vehicle and undercarriage for signs of impact. Were signs of impact found?	Replace components and perform inspections as directed in "Repairs and Inspections Required After An Accident" in this section. Clear diagnostic trouble codes. Repeat "SRS Diagnostic System Check"	Ignition switch "OFF". Replace SDM. Reconnect all SRS system components, ensure all components are properly mounted. Repeat "SRS Diagnostic System Check"

DTC 53 Deployment Commanded With Deployment Loop Fault Or Energy Reserves Out Of Range



D09LX001

Circuit Description:

The SDM contains a sensing drive which converts vehicle velocity changes to an electrical signal. The electrical signal generated is processed by the SDM and then compared to a value stored in memory. When the generated signal exceeds the stored value, the SDM will cause current to flow through the air bag assembly deploying the air bags. DTC 53 is set accompanying with DTC 51 when a deployment occurs while an air bag assembly circuit fault is present that could possibly result in a no deployment situation in one or both air bag assemblies.

DTC Will Set When:

The SDM detects a frontal crash, up to 30 degrees off the centerline of the vehicle, of sufficient force to warrant deployment of the air bags and an inflator circuit fault is present.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp records "Crash Data", and sets a diagnostic trouble code.

DTC Will Clear When:

The SDM is replaced. If DTC 53 is set, one or more DTCs will be set in addition to DTC 53. Malfunction(s) setting DTC(s) (other than DTC 71) must be repaired so that DTC(s) will not be set when a new SDM is installed.

DTC Chart Test Description:

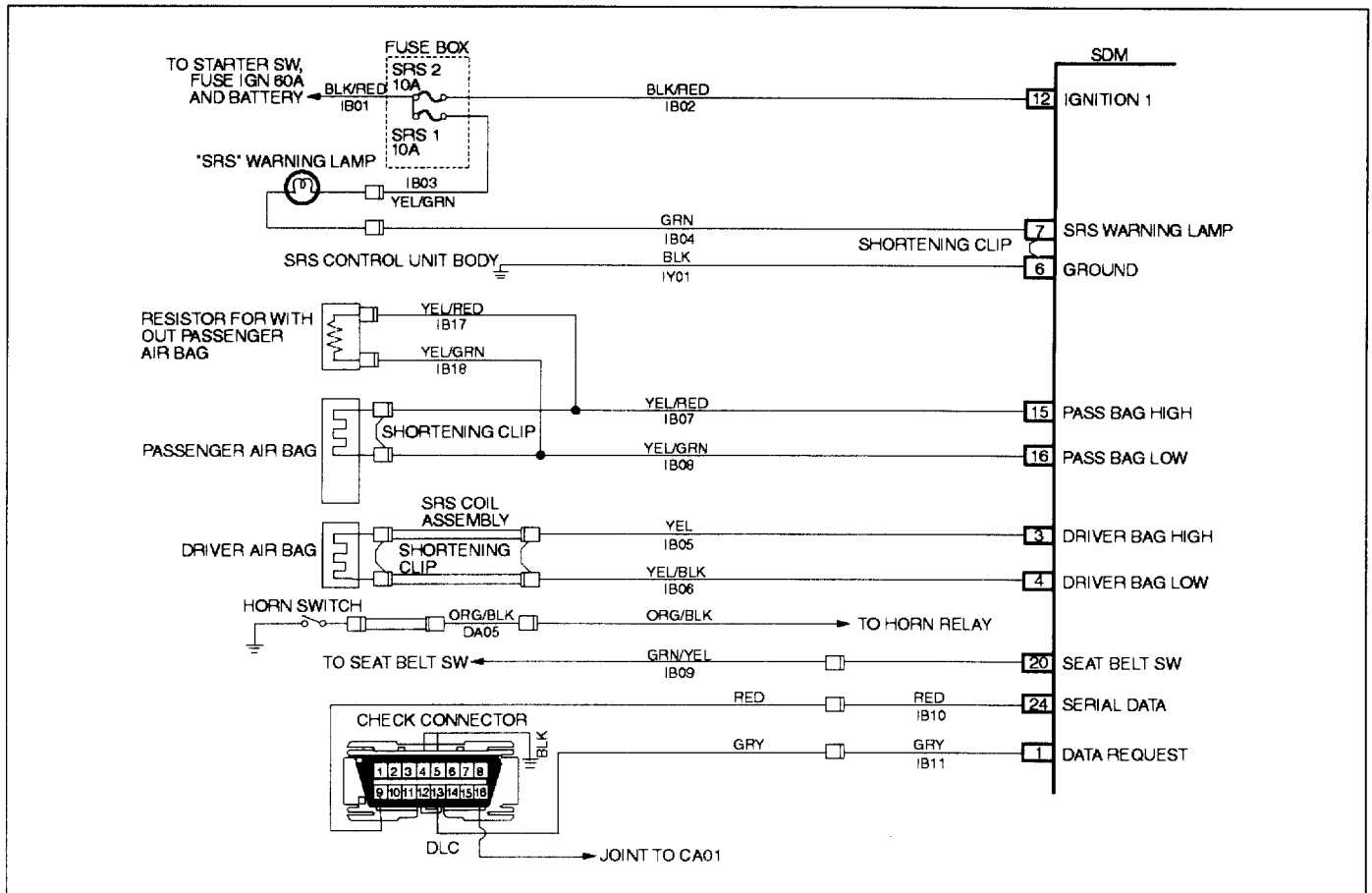
Number(s) below refer to step number(s) on the diagnostic chart:

2. If air bag assembly have not deployed, DTC 53 may have falsely set.
3. If DTC 53 has set with no signs of frontal impact, the diagnostic trouble code has falsely set.

DTC 53 Deployment Commanded WITH Deployment Loop Fault Or Energy Reserves Out Of Range

WARNING: DURING SERVICE PROCEDURES. BE VERY CAREFUL WHEN HANDLING A SENSING AND DIAGNOSTIC MODULE (SDM). NEVER STRIKE OR JAR THE SDM. NEVER POWER UP THE SRS WHEN THE SDM IS NOT RIGIDLY ATTACHED TO THE VEHICLE. ALL SDM AND MOUNTING BRACKET FASTENERS MUST BE CAREFULLY TORQUED AND THE ARROW MUST BE POINTING TOWARD THE FRONT OF THE VEHICLE TO ENSURE PROPER OPERATION OF THE SRS. THE SDM COULD BE ACTIVATED WHEN POWERED WHILE NOT RIGIDLY ATTACHED TO THE VEHICLE WHICH COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY.

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	Ignition switch "OFF." Have air bag assemblies deployed?	Replace components and perform inspections as directed in "Repairs And Inspections Required After An Accident" in this section. Clear diagnostic trouble codes. Repeat the "SRS Diagnostic System Check"	Go to Step 3
3	Inspect front of vehicle and undercarriage for signs of impact. Were signs of impact found?	Replace components and perform inspections as directed in "Repairs And Inspections Required After An Accident" in this section. Clear diagnostic trouble codes. Repeat "SRS Diagnostic System Check"	Ignition switch "OFF." Replace SDM. Reconnect all SRS system components, ensure all components are properly mounted. Repeat the "SRS Diagnostic System Check"

DTC 61 Warning Lamp Circuit Failure

D09LX001

Circuit Description:

When the ignition switch is turned "ON", battery voltage is applied to the "AIR BAG" warning lamp and to the "Ignition 1" input terminal "12". The SDM responds by flashing the "AIR BAG" warning lamp seven times. The SDM monitors the lamp driver output by comparing the output state at "SRS Warning Lamp" terminal "7" to the microprocessor commanded state. When "Ignition 1" is in the specified value, and the output state does not match the commanded state of the lamp driver for 500 milliseconds, DTC 61 is set.

DTC Will Set When:

"Ignition 1" voltage is in the specified value and the output state at the "SRS Warning Lamp" terminal does not match the commanded state of the lamp driver for 500 milliseconds. This test is run every 100 milliseconds during "Continuous Monitoring" tests and once per each ignition cycle at the beginning.

Action Taken:

SDM attempts to turn "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

The ignition switch is turned "OFF."

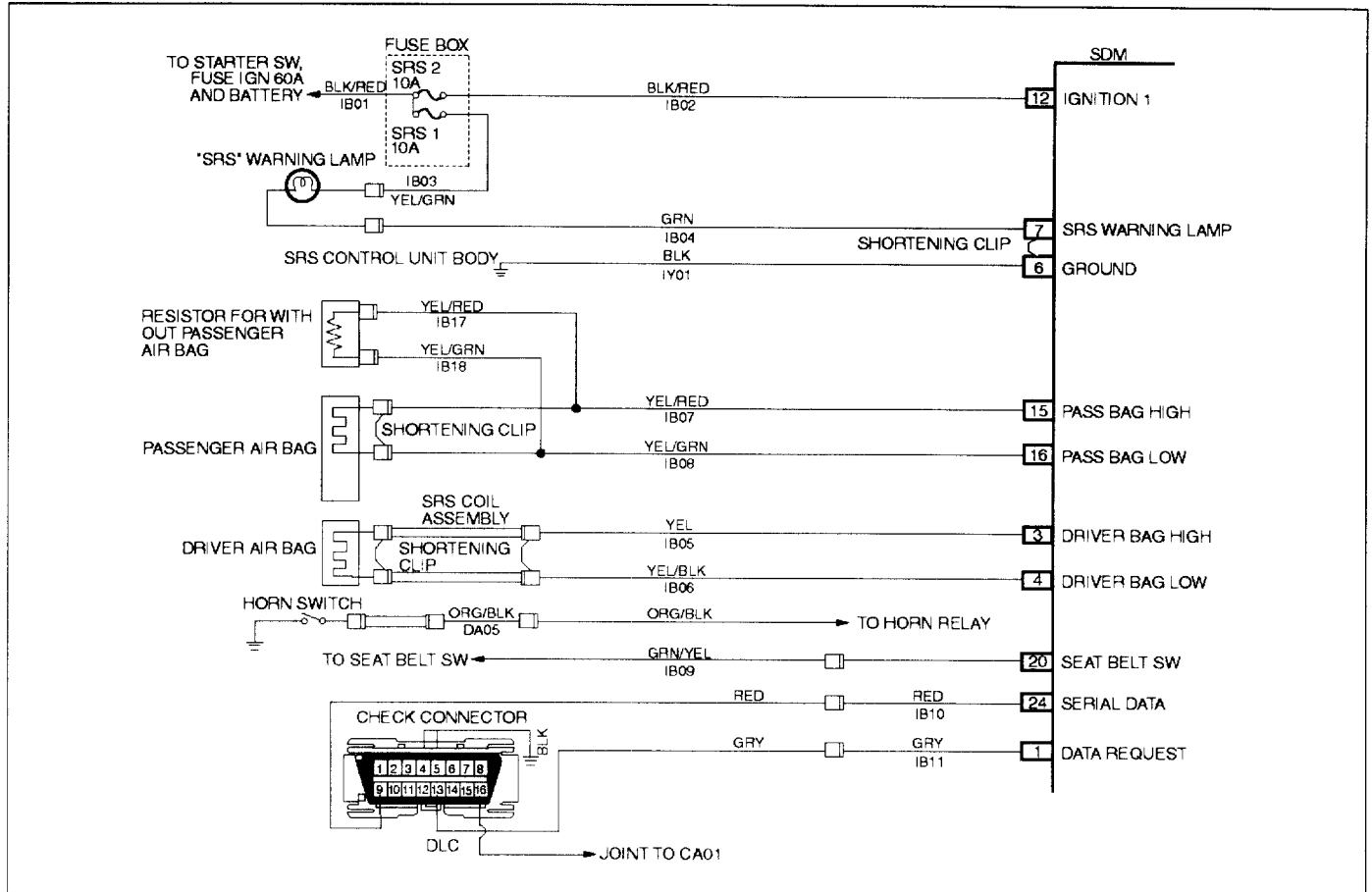
Diagnostic Aids:

Refer to Charts B and C to diagnose warning lamp circuit malfunctions.

DTC 61 Warning Lamp Circuit Failure

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	1. Malfunctions within the "AIR BAG" warning lamp circuitry will set this diagnostic trouble code. 2. These malfunctions are addressed in the "SRS Diagnostic System Check" via Chart B and Chart C. 3. Failure to properly perform the "SRS Diagnostic System Check" may result in misdiagnosis. 4. Ignition switch "ON." 5. Clear SRS diagnostic trouble codes. IS DTC 61 set?	Ignition switch "OFF." Go to Chart A	Repeat the "SRS Diagnostic System Check"

DTC 71 Internal SDM Fault



D09LX001

Circuit Description:

DTC 71 is an indication of a potential internal SDM malfunction and will set if any of the following conditions are detected:

- 1) Deployment or microprocessor energy reserve failure.
- 2) EEPROM failure.
- 3) ROM failure.
- 4) RAM failure.
- 5) Calibration check sum failure.
- 6) Deployment switch faults.
- 7) Accelerometer fault.
- 8) Arming sensor fault.
- 9) Diagnostic current faults.
- 10) DTC 19
- 11) DTC 25
- 12) DTC 51
- 13) DTC 53

DTC Will Set When:

Any of the above indicated malfunctions are detected by the SDM. The malfunctions described above are tested mainly during "Continuous Monitoring" and some ones run each ignition cycle.

Action Taken:

SDM turns "ON" the "AIR BAG" warning lamp and sets a diagnostic trouble code.

DTC Will Clear When:

A scan tool "Clear Codes" commanded is received by the SDM. Some of the indicated malfunctions will only allow the "AIR BAG" warning lamp to go out.

But when DTC 19, 25, 51, 53 are also set, SDM is replaced.

DTC 71 Internal SDM Fault

WARNING: DURING SERVICE PROCEDURES. BE VERY CAREFUL WHEN HANDLING A SENSING AND DIAGNOSTIC MODULE (SDM). NEVER STRIKE OR JAR THE SDM. NEVER POWER UP THE SRS WHEN THE SDM IS NOT RIGIDLY ATTACHED TO THE VEHICLE. ALL SDM AND MOUNTING BRACKET FASTENERS MUST BE CAREFULLY TORQUED AND THE ARROW MUST BE POINTING TOWARD THE FRONT OF THE VEHICLE TO ENSURE PROPER OPERATION OF THE SRS. THE SDM COULD BE ACTIVATED WHEN POWERED WHILE NOT RIGIDLY ATTACHED TO THE VEHICLE WHICH COULD CAUSE DEPLOYMENT AND RESULT IN PERSONAL INJURY.

CAUTION: When DTC 19 or 25 has been set, it is necessary to replace the SDM. Setting DTC 19 and 25 or 51 or 53 will also cause DTC 71 to set. When a scan tool "CLEAR CODES" command is issued and the malfunction is no longer present, DTC 51 or 53 and DTC 71 will remain current. Ensure that the short to voltage condition DTC 19, 25 is repaired prior to installing a replacement SDM to avoid damaging the SDM.

Step	Action	Yes	No
1	Was the "SRS Diagnostic System Check" performed?	Go to Step 2	Go to the "SRS Diagnostic System Check"
2	Note SRS "Diagnostic System Check." IS DTC 19 OR 25 OR 51 OR 53 ALSO SET (CURRENT OR HISTORY)? (REFER TO NOTICE ABOVE.)	Go to DTC 19 if DTC 19 is set. Go to DTC 25 if DTC 25 is set. Go to DTC 51 if DTC 51 is set. Go to DTC 53 if DTC 53 is set.	Ignition switch "OFF." Replace SDM. Repeat the "SRS Diagnostic System Check"

MEMO

Handwriting practice lines consisting of 28 horizontal dotted lines.

TFRET-WE-9995EU

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