

AIR BAG RESTRAINT SYSTEM

1999 Toyota

DESCRIPTION & OPERATION

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

Supplemental Restraint System (SRS), also known as air bag system, is designed to provide increased accident protection for driver and passenger by deploying air bags in a front-end collision. The air bag system is designed to be used in conjunction with 3-point safety belts.

The air bag system includes the following components: driver-side air bag module (steering wheel pad), passenger-side air bag module, spiral cable, AIR BAG warning light, air bag sensor assembly, right and left front air bag sensors, right and left front seat belt pretensioners and associated wiring harnesses. See **Fig. 1**.

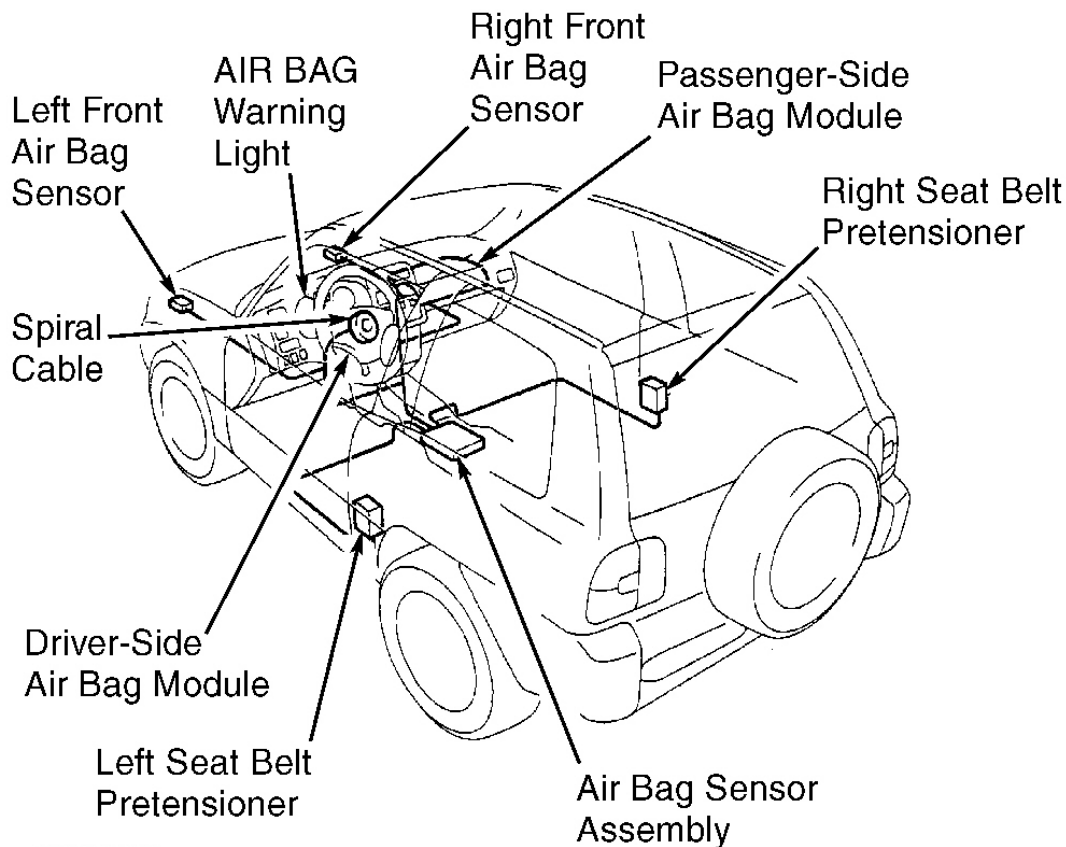


Fig. 1: Locating Restraint System Components

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

AIR BAG SENSOR ASSEMBLY

The air bag sensor assembly is located on the floor inside center console box. It consists of an air bag sensor, safing sensor and diagnosis, ignition control and drive circuits. It receives signals from the air bag sensor and determines whether air bag system must be deployed or not.

DRIVER-SIDE AIR BAG MODULE

The driver-side air bag and inflator is stored in the steering wheel pad. It contains a squib, igniter charge and gas generant and inflates the air bag when instructed by air bag sensor assembly. Driver-side air bag module is also called steering wheel pad.

FRONT AIR BAG SENSOR

The front air bag sensors are mounted inside right and left front side members. When sensor detects an impact of sufficient force (above a predetermined limit), contacts inside the sensor close, sending a signal to the air bag sensor assembly.

PASSENGER-SIDE AIR BAG MODULE

The passenger-side air bag and inflator is stored in the instrument panel above glove box. It contains a squib, igniter charge and gas generant and inflates the air bag when instructed by air bag sensor assembly.

SEAT BELT PRETENSIONER

The seat belt pretensioner system is a component of the front outer seat belt assembly. It contains a squib, gas generant, wire and piston and operates in the event of a front-end collision.

SPIRAL CABLE

The spiral cable is attached to combination switch and is used as an electrical joint between chassis wiring harness and driver-side air bag module. Spiral cable is also known as clockspring.

SERVICE PRECAUTIONS

Observe the following precautions when servicing air bag system:

- Disable air bag system before servicing any air bag system or steering column component. Failure to do this could result in accidental air bag deployment and possible personal injury. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
- When diagnosing air bag system, always check for diagnostic codes before disconnecting battery.
- After turning ignition switch to LOCK position and disconnecting negative battery cable, wait at least 90 seconds before working on air bag system. Air bag system is equipped with a back-up power source that

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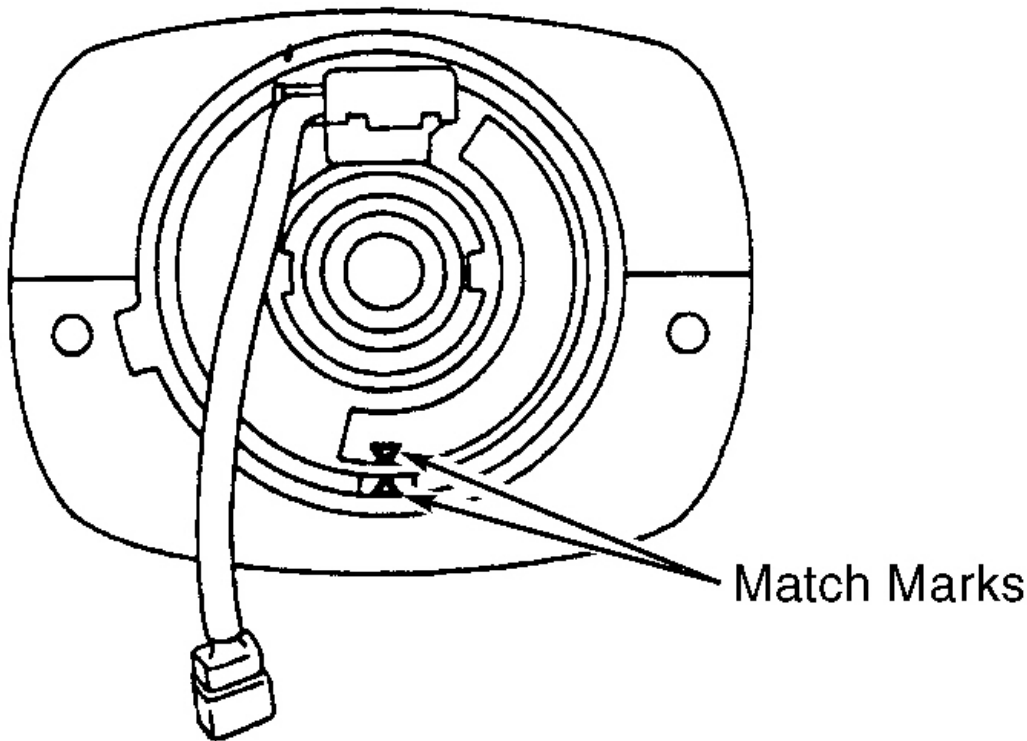
may allow air bag to deploy until 90 seconds after disconnecting negative battery cable.

- If vehicle was in a minor collision but air bags did not deploy, inspect all system components for any sign of damage, and replace as necessary.
- Never use air bag system components from another vehicle. Replace air bag system components with new parts.
- Remove air bag sensor assembly if repairing the vehicle requires impacting (shocking) the vehicle.
- Air bag sensor assembly contains mercury. After replacement, DO NOT destroy old part. When scrapping vehicle or replacing air bag sensor assembly, remove air bag sensor assembly and dispose of it as toxic waste.
- Never disassemble and repair air bag sensor assembly, front air bag sensors, passenger-side or driver-side air bag modules or seat belt pretensioners.
- Replace dropped, cracked, dented or otherwise damaged components.
- DO NOT expose air bag sensor assembly, front air bag sensors or air bag modules directly to heat or flame.
- When diagnosing electrical circuits, use a volt/ohm meter with high impedance (10,000 ohms minimum).
- Information labels are attached to air bag components. Follow all notices on labels.
- After work on air bag system is complete, check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK**.
- Always wear safety glasses when servicing or handling an air bag.
- When placing a live air bag on a bench or other surface, always face air bag and trim cover up and away from surface. This will reduce motion of module if it is accidentally deployed.
- After deployment, air bag surface may contain deposits of sodium hydroxide, which irritates skin. Always wear safety glasses, rubber gloves, and long-sleeved shirt during clean-up. After clean-up, wash hands using mild soap and water.
- Carry a live air bag module with trim cover (air bag) pointed away from your body to minimize injury in case accidental deployment.
- If air bag system is not fully functional for any reason, vehicle should not be driven until system is repaired and again becomes operational. DO NOT remove bulbs, modules, sensors or other components, or in any way disable system from operating normally. If air bag system is not functional, park vehicle until it is repaired and functions properly.

ADJUSTMENTS

SPIRAL CABLE

Ensure front wheels are in straight-ahead position. Turn spiral cable counterclockwise until it becomes difficult to turn. Turn spiral cable clockwise about 2 1/2 turns to align match marks. See **Fig. 2**. Install steering wheel.



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Fig. 2: Adjusting Spiral Cable

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DISABLING & ACTIVATING AIR BAG SYSTEM

WARNING: Back-up power supply maintains air bag system voltage for about 90 seconds after battery is disconnected. After disabling air bag system, wait at least 90 seconds before servicing air bag system to prevent accidental air bag deployment and possible personal injury.

DISABLING SYSTEM

For Component Replacement

Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds before starting any work on vehicle.

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For Diagnosis & Testing

1. Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds. Remove driver-side air bag module. See DRIVER-SIDE AIR BAG MODULE under **REMOVAL & INSTALLATION** . Disconnect passenger-side air bag module connector, accessible by removal of glove box assembly. See **Fig. 3** .
2. Disconnect air bag sensor assembly connectors. See **Fig. 4** . See AIR BAG SENSOR ASSEMBLY under **REMOVAL & INSTALLATION** . Disconnect right and left front seat belt pretensioners. See SEAT BELT PRETENSIONER under **REMOVAL & INSTALLATION** . Disconnect right and left front air bag sensors. See FRONT AIR BAG SENSOR under **REMOVAL & INSTALLATION** .

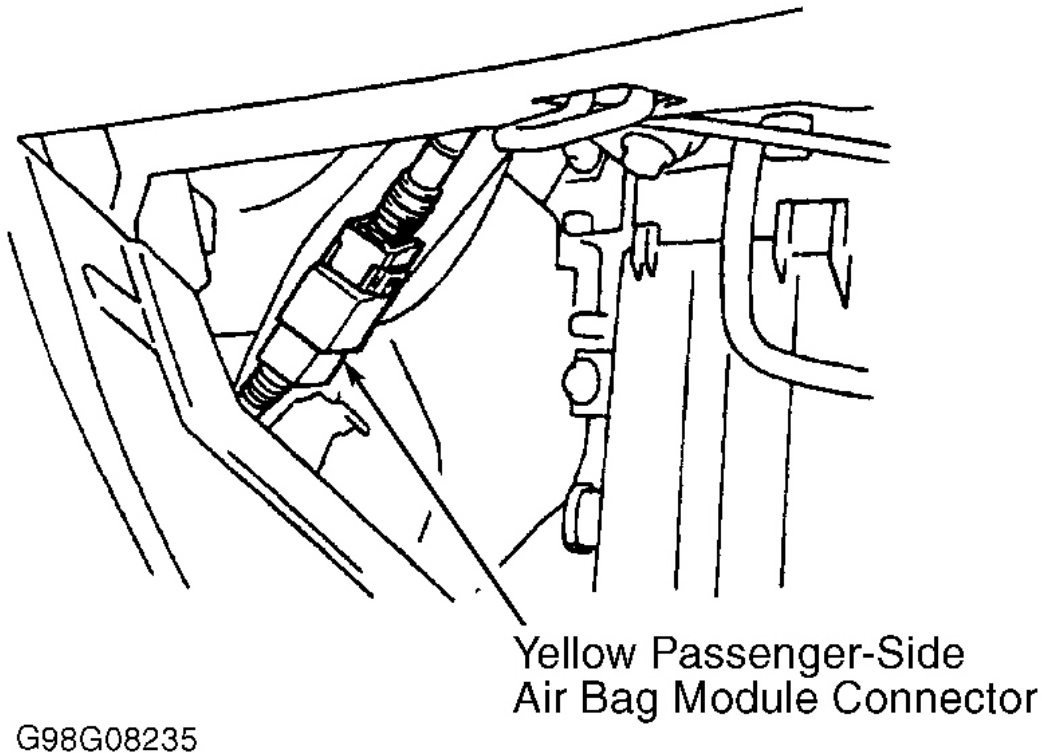


Fig. 3: Disconnecting Passenger-Side Air Bag Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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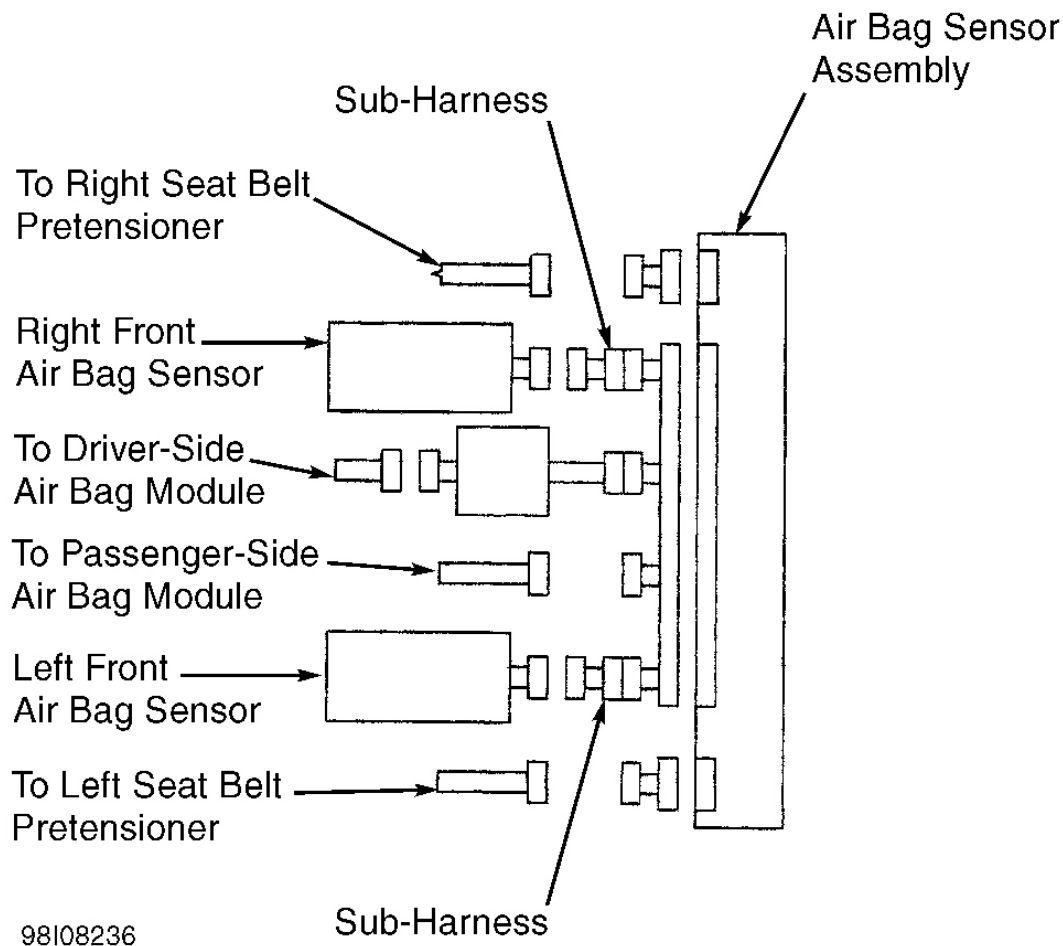


Fig. 4: Disabling Air Bag System

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ACTIVATING SYSTEM

For Component Replacement

Ensure ignition switch is in LOCK position. Reconnect negative battery cable. Perform **SYSTEM OPERATION CHECK**.

For Diagnosis & Testing

Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds. Reconnect right and left front air bag sensor connectors. Reconnect right and left seat belt pretensioners. Reconnect passenger-side air bag connector. Install driver-side air bag module. Reconnect air bag sensor assembly connector. Reconnect negative battery cable. Perform **SYSTEM OPERATION CHECK**.

DISPOSAL PROCEDURES

WARNING: Undeployed air bags contain substances that can cause illness or injury if improperly handled. Disposing of an undeployed air bag may violate federal, state and/or local laws. If scrapping vehicle, air bag must be deployed while still mounted in vehicle. **DO NOT** deploy air bags inside vehicle unless vehicle is to be scrapped. Wear gloves and safety glasses when handling air bag. Wrap deployed air bag in a sturdy plastic bag and dispose of it like any other part.

ON-VEHICLE DEPLOYMENT (SCRAPPED VEHICLES ONLY)

Driver-Side & Passenger-Side Air Bag Module

1. Before proceeding, see **SERVICE PRECAUTIONS** . Ensure steering wheel, driver-side air bag module and passenger-side air bag are not loose. If components are loose, deploy air bag(s) using **OFF-VEHICLE DEPLOYMENT** procedure.
2. If deploying driver-side air bag module, disconnect spiral cable connector accessible by removal of lower steering column cover. If deploying passenger-side air bag module, disconnect passenger-side air bag connector, accessible by removal of glove box. See **Fig. 3** . For either air bag, connect Deployment Tool (09082-00700) connector to air bag module connector. Position deployment tool at least 33 feet from front of vehicle.
3. Close all doors and windows of vehicle. Connect deployment tool Red clip to positive battery terminal and Black clip to negative battery terminal. Ensure no one is inside or within 33 feet of vehicle. Press activation switch to deploy air bag. Because of heat, **DO NOT** touch air bag for at least 30 minutes after deployment.

Seat Belt Pretensioner

1. Before proceeding, see **SERVICE PRECAUTIONS** . Ensure seat belt pretensioner is not loose. If components are loose, remove and deploy using **OFF-VEHICLE DEPLOYMENT** procedure. Access and disconnect appropriate seat belt pretensioner connector. See SEAT BELT PRETENSIONER under **REMOVAL & INSTALLATION** .
2. Connect Deployment Tools (09082-00700 and 09082-00740) to appropriate seat belt pretensioner connector. Position deployment tool at least 33 feet from front of vehicle. Close all doors and windows of vehicle. Connect deployment tool Red clip to positive battery terminal and Black clip to negative battery terminal.
3. Ensure no one is inside vehicle or within 33 feet of vehicle. Press activation switch to deploy air bag. Because of heat, **DO NOT** touch air bag for at least 30 minutes after deployment. Scrap vehicle with air bag(s) still installed.

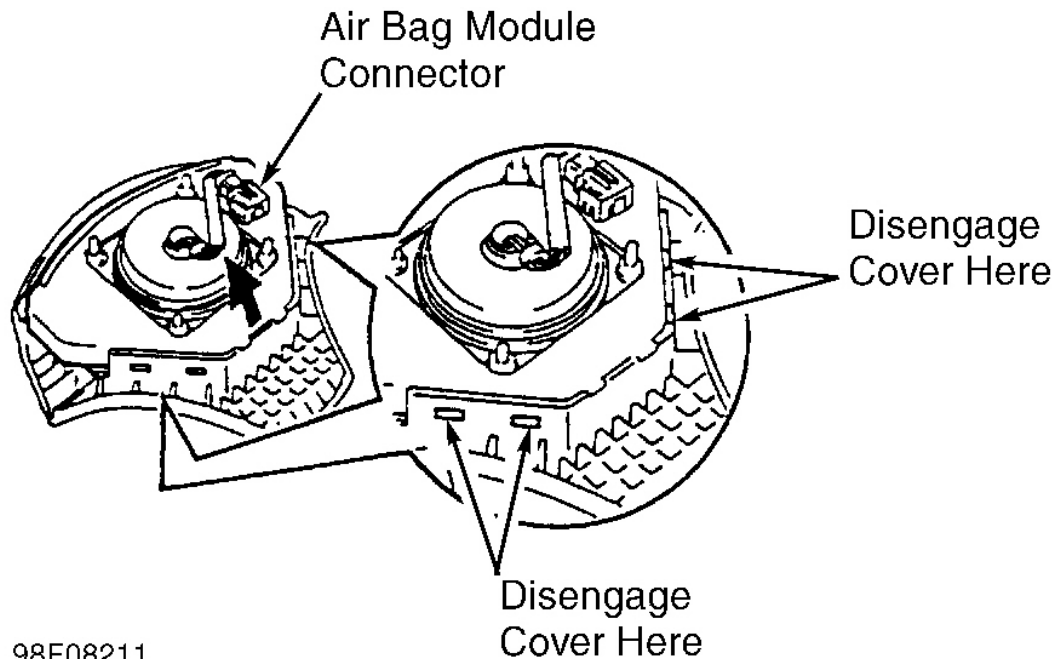
OFF-VEHICLE DEPLOYMENT

Driver-Side Air Bag Module

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING**

SYSTEM under **DISABLING & ACTIVATING AIR BAG SYSTEM**. Remove driver-side air bag module. See **DRIVER-SIDE AIR BAG MODULE** under **REMOVAL & INSTALLATION** . Remove connector on rear of driver-side air bag module. See **Fig. 5** . Disengage cover from driver-side air bag module and remove cover.

2. Install 2 bolts (6 mm X 35 mm) with washers into holes located in rear of driver-side air bag module. Tighten bolts by hand. **DO NOT** overtighten bolts. Wrap strong wire at least twice around each bolt. See **Fig. 6** . Ensure no slack is present in wire. If slack is present, or wire is not strong enough, driver-side air bag module may become loose due to shock when air bag is deployed.
3. Position driver-side air bag module on rim of a scrap wheel and tire assembly with pad side facing upward. See **Fig. 7** . Securely tie driver-side air bag module to wheel rim through lug nut holes. Place a large cardboard box (weighted at sides) or 3 scrap tires on top of driver-side air bag module.
4. Connect Deployment Tool (09082-00700) to driver-side air bag module connector. Position deployment tool at least 33 feet away from driver-side air bag module. Press activation switch to deploy driver-side air bag module. Because of heat, wait 30 minutes before handling driver-side air bag module. Seal deployed air bag module in vinyl bag and dispose of in usual manner.

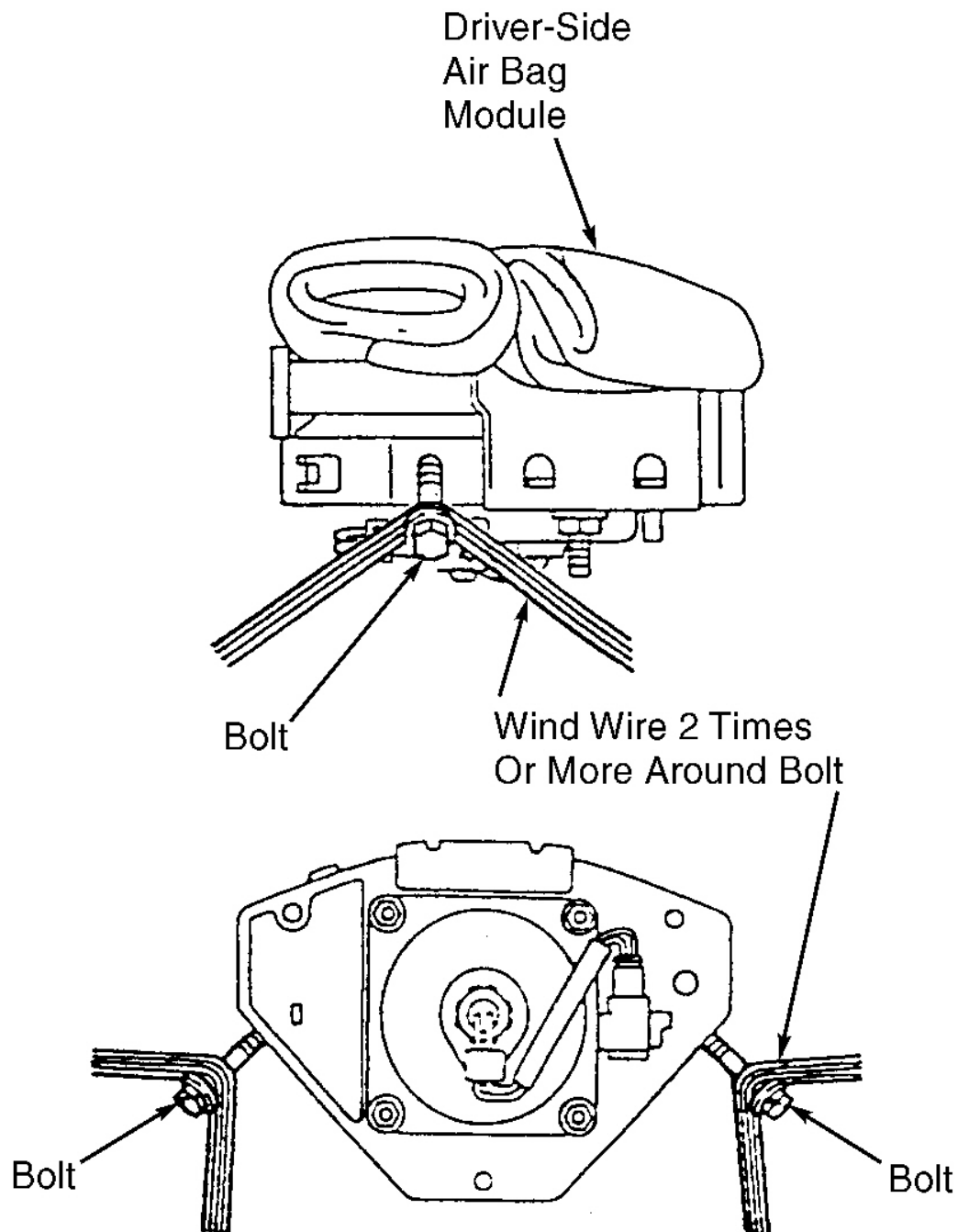


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Fig. 5: Removing Driver-Side Air Bag Module Connector & Cover
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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Fig. 6: Securing Wire To Driver-Side Air Bag Module
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

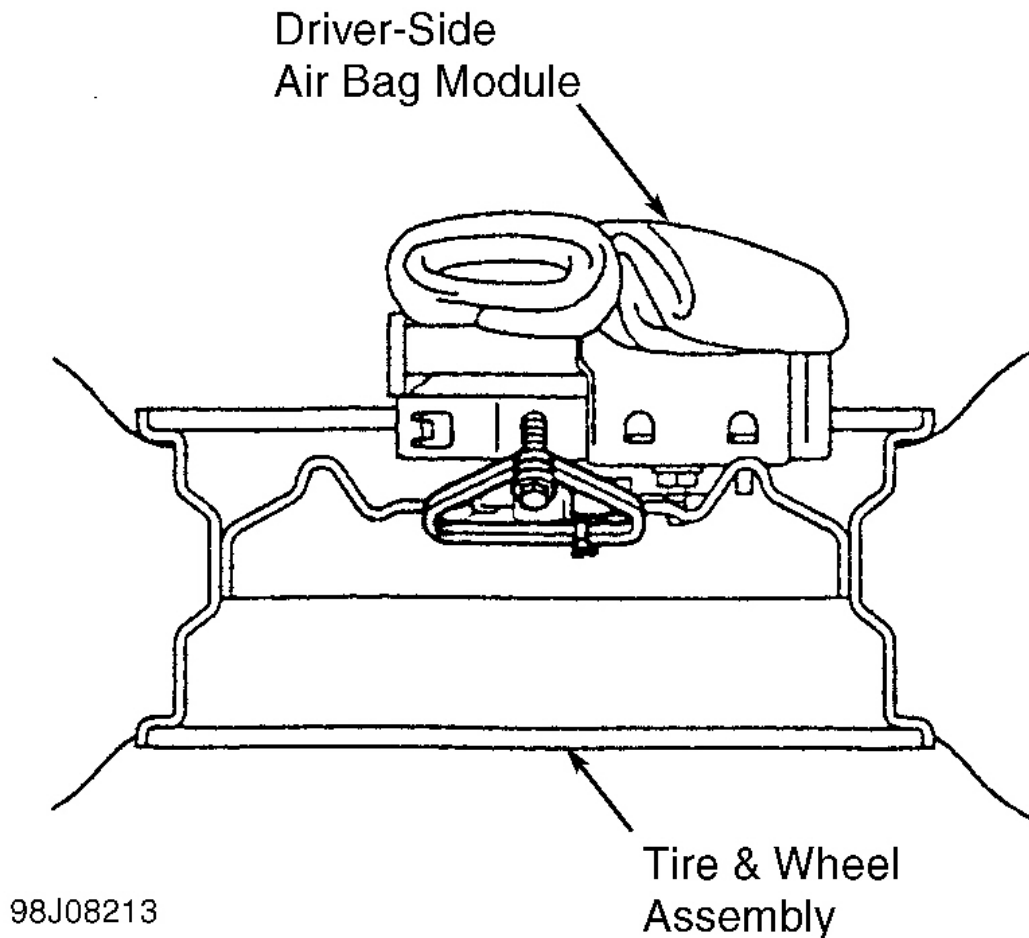


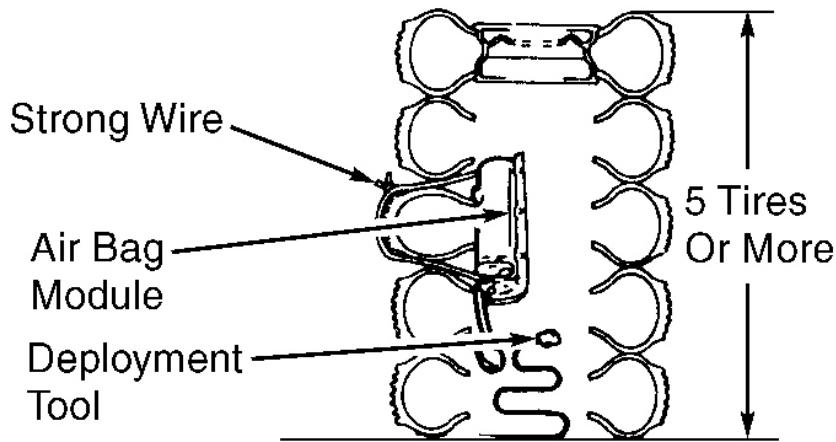
Fig. 7: Securing Driver-Side Air Bag Module To Wheel
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Passenger-Side Air Bag Module

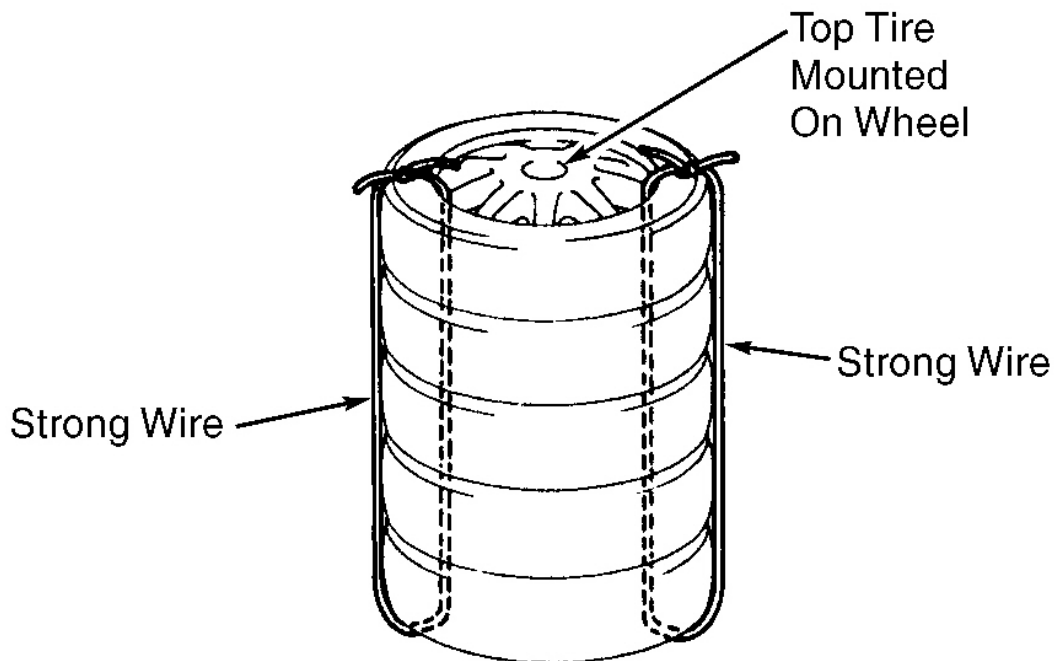
1. Before proceeding, see **SERVICE PRECAUTIONS** . Remove passenger-side air bag module. See PASSENGER-SIDE AIR BAG under **REMOVAL & INSTALLATION** .
2. Position passenger-side air bag module inside a scrap tire with air bag trim cover facing inside. See **Fig. 8** . Secure passenger-side air bag module to tire with wire. Place this tire between 4 other tires (top tire should have wheel installed). Securely tie all tires together with wire.
3. Connect Deployment Tool (09082-00700) to passenger-side air bag connector. Position deployment tool at least 33 feet away from passenger-side air bag. Press activation switch to deploy passenger-side air bag. Because of heat, wait 30 minutes before handling passenger-side air bag.

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ATTACH AIR BAG TO TIRE



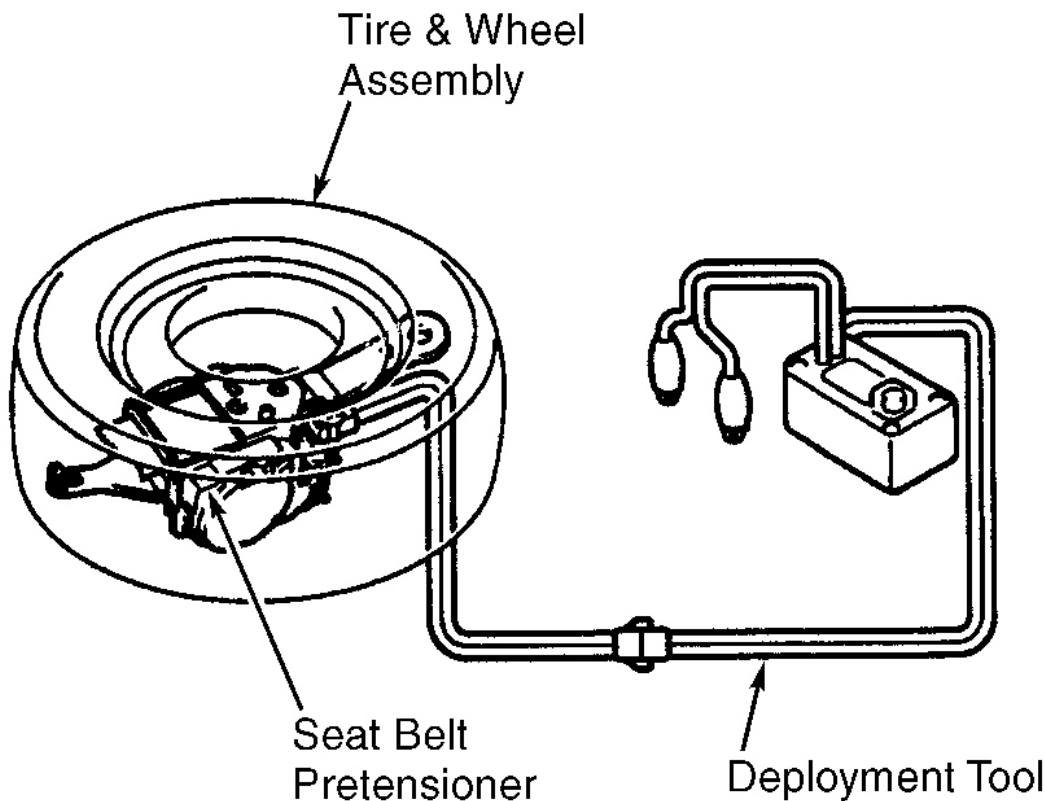
SECURE TIRES TOGETHER

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Fig. 8: Preparing Passenger-Side Air Bag Module For Deployment
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Seat Belt Pretensioner

1. Before proceeding, see **SERVICE PRECAUTIONS** . Remove appropriate seat belt pretensioner. See SEAT BELT PRETENSIONER under **REMOVAL & INSTALLATION** .
2. Connect Deployment Tools (09082-00700 and 09082-00740) to seat belt pretensioner connector. Position seat belt pretensioner on ground and cover with wheel and tire assembly. See **Fig. 9** . Position deployment tool at least 33 feet away from seat belt pretensioner. Press activation switch to deploy seat belt pretensioner. Because of heat, wait 30 minutes before handling. Dispose of deployed pretensioner in usual manner.



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Fig. 9: Deploying Seat Belt Pretensioner

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

POST-COLLISION INSPECTION

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

REMOVAL & INSTALLATION

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

AIR BAG SENSOR ASSEMBLY

Removal & Installation

1. Before proceeding, see SERVICE PRECAUTIONS . Air bag sensor assembly is located on the floor inside center console box. See Fig. 10 . Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds.
2. Remove shift lever and boot. Ash tray and console box hole cover. Remove console box. Remove 4 Torx screws retaining air bag sensor assembly. Remove air bag sensor assembly.
3. To install, reverse removal procedure. Tighten air bag sensor assembly Torx screws to specification. See TORQUE SPECIFICATIONS . Check AIR BAG warning light to ensure system is functioning properly. See SYSTEM OPERATION CHECK .

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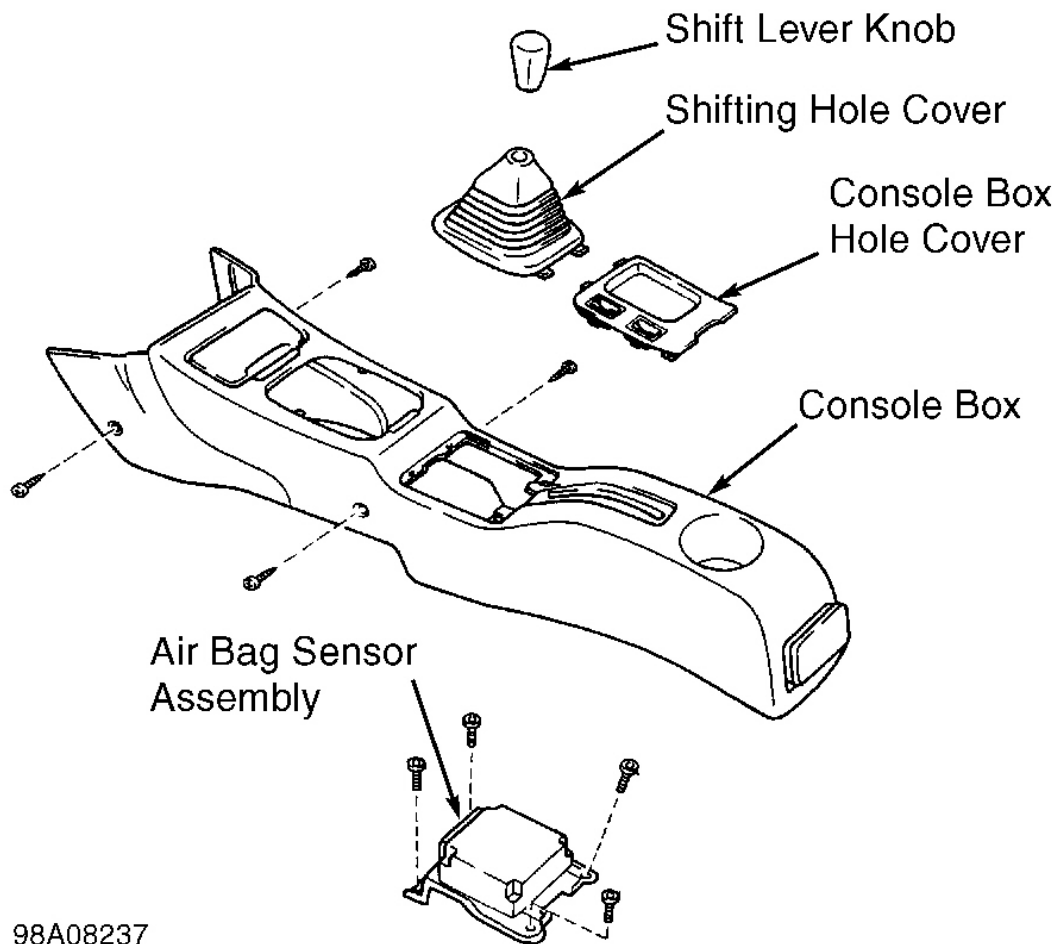


Fig. 10: Removing Air Bag Sensor Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DRIVER-SIDE AIR BAG MODULE

NOTE: If steering wheel horn button contact plate is deformed, replace steering wheel assembly.

Removal & Installation

1. Before proceeding, see **SERVICE PRECAUTIONS**. Ensure front wheels are in straight-ahead position. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Working from back of steering wheel, loosen air bag module mounting Torx screws until groove around screw circumference catches on screw case. See **Fig. 11**.
2. Pull driver-side air bag module from steering wheel and disconnect driver-side air bag module connector.

Place driver-side air bag module on a flat surface with pad side facing up.

3. To install, reverse removal procedure. Ensure front wheels are in straight-ahead position and spiral cable is properly aligned. See **SPIRAL CABLE** under **ADJUSTMENTS** . Tighten driver-side air bag module mounting screws to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

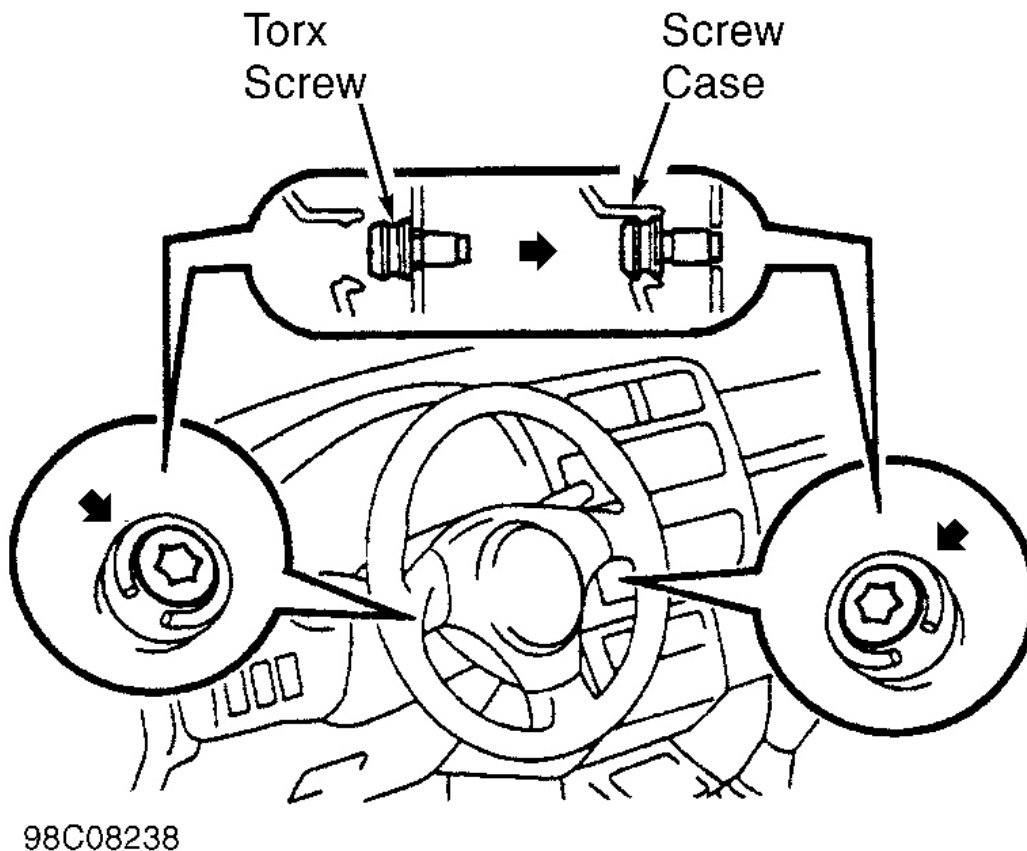


Fig. 11: Removing Driver-Side Air Bag Module
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

FRONT AIR BAG SENSOR

Removal & Installation

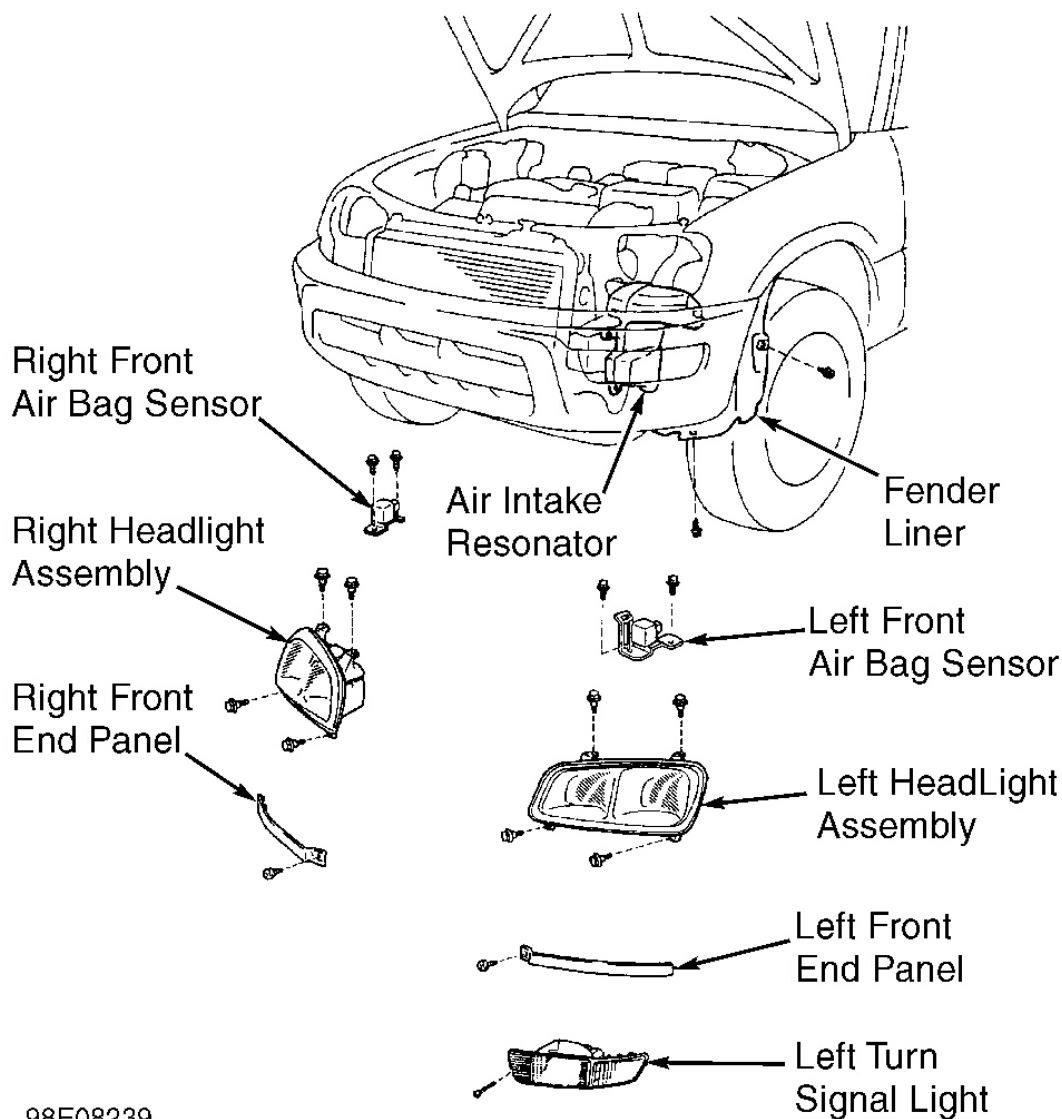
1. Before proceeding, see **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. The front air bag sensors are mounted inside right and left front side members.
2. For left front air bag sensor, remove left front end panel and headlight. See **Fig. 12** . Disconnect front air

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bag sensor connector with sensor installed. Remove inner fender panel. Remove 3 bolts and move air intake resonator aside. Remove 2 mounting bolts and remove sensor.

3. For right front air bag sensor, remove right front end panel and headlight. See **Fig. 12** . Disconnect front air bag sensor connector with sensor installed. Remove 2 mounting bolts and remove sensor.
4. To install, reverse removal procedure. Tighten front air bag sensor mounting screws to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .



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Fig. 12: Removing Front Air Bag Sensors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTRUMENT PANEL**Removal & Installation**

1. Before proceeding, see **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds.
2. Access and disconnect right and left seat belt pretensioner connectors. See **SEAT BELT PRETENSIONERS** . Remove front door scuff plates and cowl side trim boards. See **Fig. 13** . Remove steering wheel. See **STEERING WHEEL** . Remove steering column covers and cluster finish panel. Remove instrument cluster. Remove hood lock release lever.
3. Remove lower finish panel and instrument panel lower insert. Remove No. 2 heater-to-register duct. Remove steering column assembly. See **STEERING COLUMN** . Remove 2 screws and center cluster finish panel. Pull off heater control knobs and pry off heater control name plate. Pry off cluster instrument panel, then remove 3 screws from heater control assembly. Disconnect connectors and remove cluster instrument panel.
4. Disconnect control cables and remove heater control assembly. Remove radio assembly. Remove console box. Tape tip of screwdriver and remove lower center cluster finish panel. Disconnect connectors. Remove stereo opening cover. Remove glove box assembly. Remove side trim cover. Disconnect remaining connectors and remove bolts, then remove instrument panel.
5. To install, reverse removal procedure. Tighten fasteners to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

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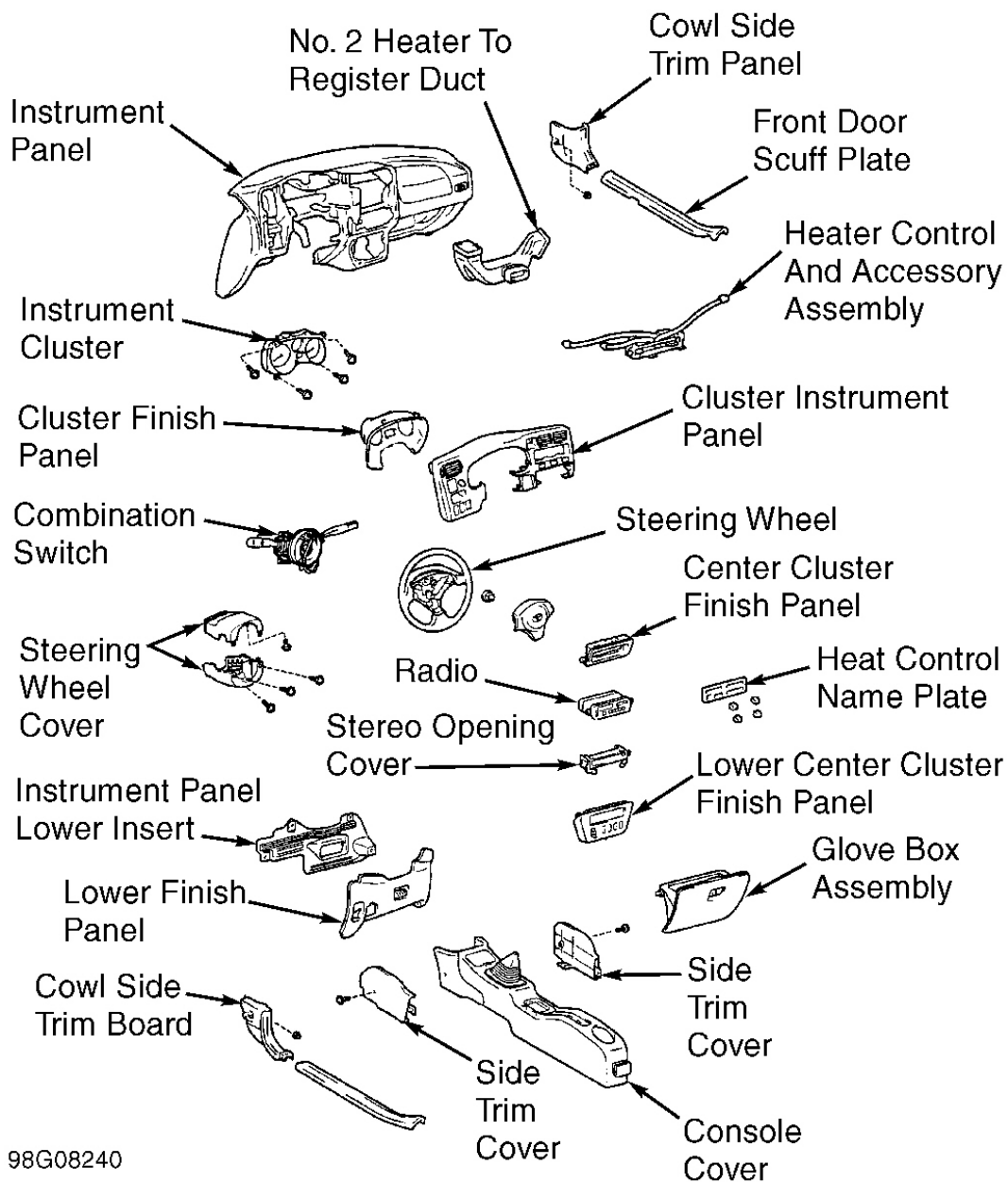


Fig. 13: Removing Instrument Panel

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

PASSENGER-SIDE AIR BAG MODULE

NOTE: If instrument panel or instrument panel reinforcement is deformed, replace with new part.

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Removal & Installation

1. Before proceeding, see **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds.
2. Remove glove box door. Disconnect passenger-side air bag module connector. See **Fig. 3** . Remove instrument panel. See **INSTRUMENT PANEL** . Working from reverse side of instrument panel, remove 2 bolts and passenger-side air bag module. Remove 3 bolts and pry up 7 clips and remove air bag door.
3. To install, reverse removal procedure. Tighten passenger-side air bag bolts to specification. See **TORQUE SPECIFICATIONS** . There should be no interference between passenger-side air bag door and instrument panel and clearance should be uniform. Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

SEAT BELT PRETENSIONERS

Removal & Installation

1. Before proceeding, see **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds.
2. On 2-door models, remove rear seat, rear floor finish panel front door scuff plate, quarter trim and roof side inner garnish. On 4-door models, remove rear door scuff plate, front door scuff plate and center pillar lower garnish.
3. On all models, remove bolts and floor anchor. Tape tip of screwdriver and remove seat belt assembly anchor caps. Remove bolt and shoulder anchor. Disconnect pretensioner connector. Remove 2 bolts and seat belt pretensioner assembly.
4. To install, reverse removal procedure. Tighten fasteners to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

SPIRAL CABLE

Removal & Installation

1. Before proceeding, see **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Remove driver-side air bag module. See **DRIVER-SIDE AIR BAG MODULE** .
2. Remove steering wheel. See **STEERING WHEEL** . Remove lower steering column cover. Disconnect lower spiral cable connector. Remove 4 screws and spiral cable.
3. To install, reverse removal procedure. Before installing spiral cable, ensure front wheels are in straight-ahead position and spiral cable is properly aligned. See SPIRAL CABLE under **ADJUSTMENTS** . Tighten steering wheel nut and driver-side air bag module screws to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

STEERING COLUMN

Removal & Installation

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1. Before proceeding, see **SERVICE PRECAUTIONS** . Ensure front wheels are in straight-ahead position. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel. See **STEERING WHEEL** .
2. Remove lower finish panel and instrument panel lower insert. Remove upper and lower steering column covers. Disconnect and remove combination switch with spiral cable attached. Remove heater-to-register duct. Match mark steering shaft and steering gear shaft for reassembly performance. Remove steering column.
3. To install, reverse removal procedure. Tighten fasteners to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

STEERING WHEEL

Removal & Installation

1. Before proceeding, see **SERVICE PRECAUTIONS** . Ensure front wheels are in straight-ahead position. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Remove driver-side air bag module. See **DRIVER-SIDE AIR BAG MODULE** .
2. Remove steering wheel nut. Match mark steering wheel and steering column for reassembly reference. Using appropriate puller, remove steering wheel.
3. To install, reverse removal procedure. Ensure front wheels are in straight-ahead position and spiral cable is properly aligned. See SPIRAL CABLE under **ADJUSTMENTS** . Tighten steering wheel nut and driver-side air bag module screws to specification. See **TORQUE SPECIFICATIONS** . Check AIR BAG warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

SYSTEM OPERATION CHECK

Turn ignition switch to ACC or ON position. AIR BAG warning light should come on for about 6 seconds and then go out. If AIR BAG warning light does not operate as specified, see **DIAGNOSIS & TESTING** .

DIAGNOSIS & TESTING

AIR BAG WARNING LIGHT CHECK

Turn ignition switch to ACC or ON position. If air bag warning light comes on for about 6 seconds and then goes off, system is functioning properly. If AIR BAG warning light comes on and stays on (or flashes), Diagnostic Trouble Code (DTC) is stored in air bag sensor assembly. Go to **RETRIEVING CODES** . If AIR BAG warning light responds in any other way, go to **DIAGNOSTIC TESTS** .

RETRIEVING CODES

CAUTION: System may be damaged if jumper wire is incorrectly connected across terminals of Data Link Connector (DLC1). Use Diagnosis Check Wire (09843-18020) when connecting terminals of DLC1.

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Using Diagnosis Check Wire

1. Turn ignition switch to ACC or ON position. Wait about 20 seconds. Using Diagnosis Check Wiring (09843-18020), connect terminals Tc and E1 of Data Link Connector (DLC1). See **Fig. 14** . DLC1 is located forward of right (passenger-side) front strut tower.
2. If AIR BAG warning light flashes 2 times per second, system is normal (normal code). If AIR BAG warning light does not flash Diagnostic Trouble Codes (DTCs) or flashes DTCs without DLC1 connection, proceed to **DTCS NOT DISPLAYED** under DIAGNOSTIC TESTS or **DTCS CONTINUOUSLY DISPLAYED** under DIAGNOSTIC TESTS. If AIR BAG warning light is on continuously and DTC is normal (flashes 2 times per second), source voltage is low. Go to **SOURCE VOLTAGE DROP** under DIAGNOSTIC TESTS.
3. If AIR BAG warning light flashes, count number of flashes to determine DTCs that are set. For example, DTC 12 is: FLASH, 1.5-second pause, FLASH, FLASH. If more than one DTC is displayed, a 2.5-second pause will occur between each DTC. Lowest numbered DTC will be displayed first, followed by next higher number DTC until all DTCs have been displayed.
4. After all DTCs are displayed, a 4-second pause will occur, and DTC display will be repeated. See appropriate DTC under DIAGNOSTIC TESTS. After repairing, clear DTCs. See **CLEARING CODES** .

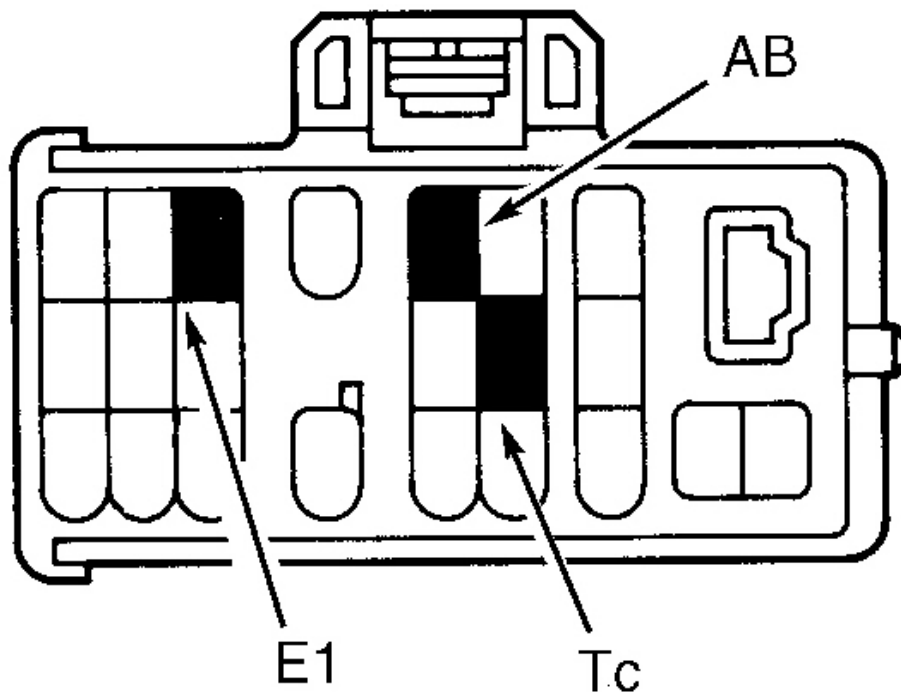
NOTE: If DTCs other than those listed under **DIAGNOSTIC TESTS** are displayed, replace the air bag sensor assembly. If the air bag warning light does not function as described, proceed to appropriate test under **DIAGNOSTIC TESTS** .

Using Toyota Hand-Held Tester

Install Toyota hand-held tester to DLC1 or DLC3. DLC1 is located forward of right (passenger-side) front strut tower. See **Fig. 14** . DLC3 is located under left side of instrument panel, to right of steering column. Read DTC by following prompts on tester. See tester operator's manual for instructions.

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Fig. 14: Identifying Data Link Connector 1 (DLC1) Terminals

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

CLEARING CODES

Using Jumper Wire

1. Use 2 jumper wires. Connect one end of first jumper wire to DLC1 terminal Tc and one end of second jumper wire to DLC1 terminal AB. See **Fig. 14** . Turn ignition switch to ACC or ON position. Wait about 6 seconds.

NOTE: When alternately grounding terminals Tc and AB, release ground from one terminal and immediately ground the other terminal within 0.2 second. If time interval exceeds 0.2 second, DTCs will not be cleared.

2. Starting with jumper wire connected to terminal Tc, apply body ground alternately to terminal Tc and terminal AB twice each, in cycles of 1/2 to 1 1/2 seconds (sequence is: Tc, AB, Tc, AB). Finally, keep applying body ground to terminal Tc until AIR BAG warning light flashes quickly, indicating DTCs are

cleared.

Using Toyota Hand-Held Tester

Connect Toyota hand-held tester to DLC1 or DLC3. Clear DTCs by following prompts on tester. See tester operator's manual for instructions.

RELEASING SHORTING SPRING

NOTE: **Perform this procedure only if you were sent here from DIAGNOSTIC TESTS.**

1. Air bag squib circuit consists of circuit between air bag sensor assembly and air bag. If voltage is accidentally applied across squib circuit (as when testing, for example), air bag will deploy.
2. To prevent accidental deployment, squib circuit connectors contain a spring-loaded shorting bar (shorting spring). When squib circuit connector is disconnected, shorting spring automatically shorts squib circuit positive and negative circuits together. This prevents air bag deployment if voltage is accidentally applied across squib circuit.
3. When connector halves are attached, shorting bar is in released position (no continuity exists between terminals). When connector is disconnected, shorting bar is engaged (continuity exists between terminals).
4. Some testing procedures require shorting spring to be in released position with connector disconnected (this is opposite of its normal position). To hold shorting spring in released position, obtain a piece of paper that is same thickness as male terminal blade that slides under shorting spring when the connector is connected. See **Fig. 15** .

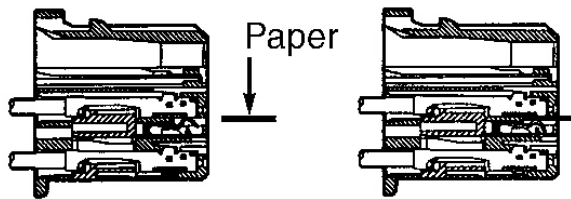
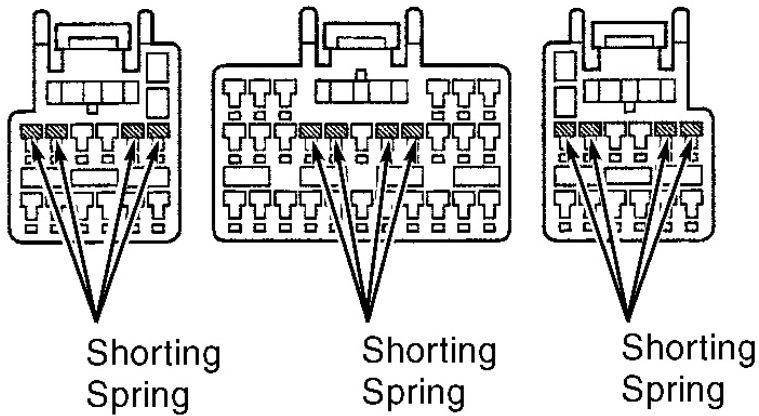
CAUTION: If paper thicker than male terminal is used, connector terminal could be damaged. Damaged connector terminal could result in system fault. Always use paper that is same thickness as male terminal.

5. With squib circuit connector disconnected, insert paper into female terminal, sliding it under shorting spring. This lifts spring, breaking circuit and allowing test procedure to be performed.

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AIR BAG SENSOR ASSEMBLY CONNECTORS



BEFORE RELEASE AFTER RELEASE

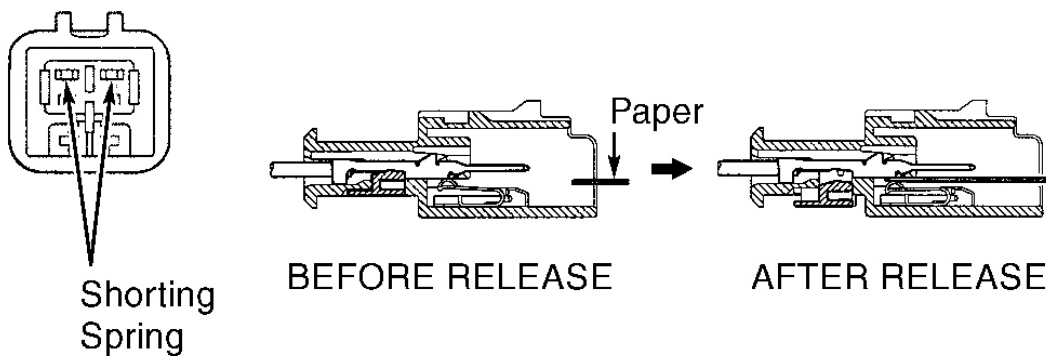
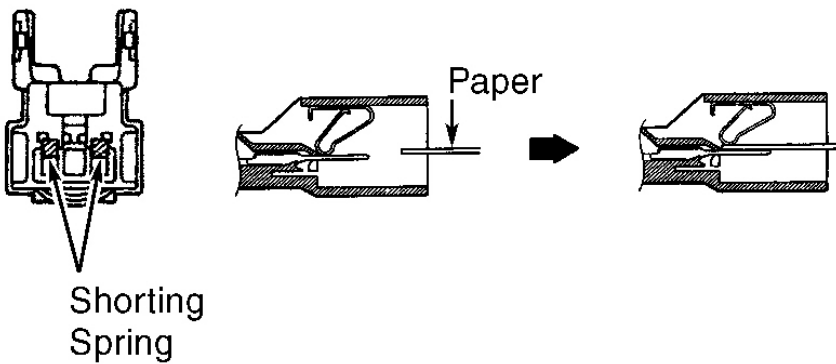


Fig. 15: Releasing Shorting Spring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DIAGNOSTIC TESTS

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

CAUTION: Ensure ignition switch is in LOCK position before disconnecting or connecting negative battery cable. If ignition switch is in ACC or ON position when negative battery cable is disconnected or connected, air bag sensor may be damaged. To prevent damage to connector terminals, **DO NOT** probe terminal ends. Instead, backprobe terminals (probe terminal where wire enters harness connector).

NOTE: In the following tests, the term squib connector and module connector may be used interchangeably.

AIR BAG WARNING LIGHT DOES NOT ILLUMINATE**Description**

AIR BAG warning light is located in instrument cluster. When air bag system is normal, AIR BAG warning light illuminates for about 6 seconds after ignition switch is turned from LOCK to ACC or ON position, and turns off automatically. If a malfunction is present in air bag system, AIR BAG warning light illuminates to inform operator of malfunction. When Data Link Connector 1 (DLC1) terminals Tc and E1 are connected together, a Diagnostic Trouble Code (DTC) is displayed by flashing AIR BAG warning light.

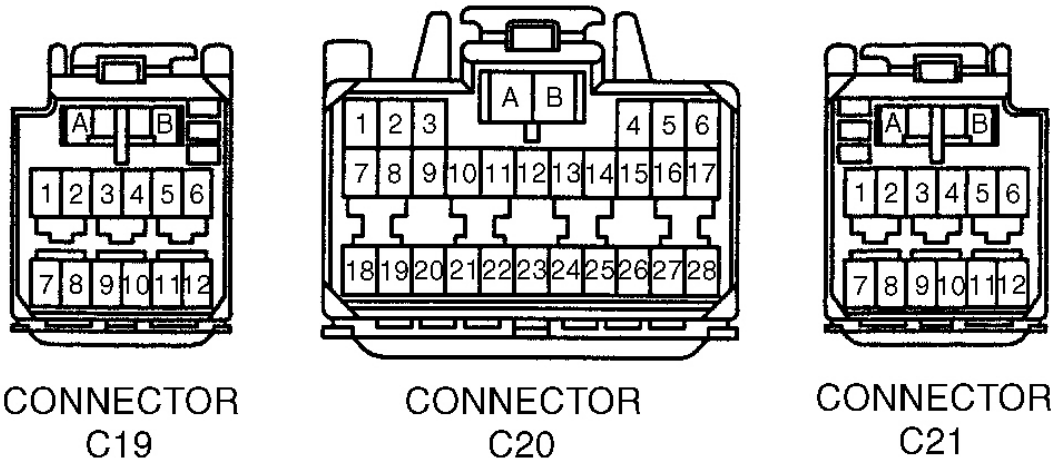
Diagnostic Procedure

1. Remove SRS-B fuse and check continuity across fuse blades. SRS-B fuse is located in instrument panel fuse block under left side of instrument panel. If fuse is faulty, go to step 4). If fuse is okay, reinstall fuse and go to next step.
2. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable. Turn ignition switch to ACC or ON position. Measure voltage between ground and harness side of air bag sensor assembly connector C20, terminal No. 3 (circuit LA, Black/Yellow wire). See **Fig. 16** . If 10-14 volts is not present, repair AIR BAG warning light bulb or circuit. If 10-14 volts is present, go to next step.
3. Turn ignition switch to LOCK position. Disconnect negative battery cable. Reconnect 3 air bag sensor assembly connectors. Leave air bag modules, pretensioners and front air bag sensors disconnected. Reconnect negative battery cable and wait at least 2 seconds. Turn ignition switch to ACC or ON position. If AIR BAG warning light illuminates, system operation is normal. If AIR BAG warning light does not come on, check for poor connection at air bag sensor assembly connector C20, terminal No. 3 (Black/Yellow wire). If connection is okay, replace air bag sensor assembly.

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4. Recheck SRS-B fuse. If fuse is blown, check harness between SRS-B fuse and AIR BAG warning light. If fuse is okay, check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT**.



VIEW FROM TERMINAL SIDE OF CONNECTORS

Note : For testing backprobe wire side of connector.

98A09722

Fig. 16: Identifying Air Bag Sensor Assembly Connectors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

AIR BAG WARNING LIGHT IS ILLUMINATED WITH IGNITION OFF

Description

AIR BAG warning light is located in instrument cluster. When air bag system is normal, AIR BAG warning light illuminates for about 6 seconds after ignition switch is turned from LOCK to ACC or ON position, and turns off automatically. If a malfunction is present in air bag system, AIR BAG warning light illuminates to inform operator of malfunction. When Data Link Connector 1 (DLC1) terminals Tc and E1 are connected together, a Diagnostic Trouble Code (DTC) is displayed by flashing AIR BAG warning light.

Diagnostic Procedure

Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable. Perform **SYSTEM OPERATION CHECK**. If AIR BAG warning light does not illuminate, replace air bag sensor assembly. If AIR BAG warning light is still illuminated, repair AIR BAG warning light circuit Black/Yellow wire or circuit AB (Black/Yellow wire) leading to the DLC1. See **WIRING DIAGRAMS**.

AIR BAG WARNING LIGHT INTERMITTENT

If AIR BAG warning light comes on intermittently, perform following tests to simulate driving conditions. If problem cannot be found, replace all components including wiring harness.

- Wiggle-test wiring harness.
- Apply heat to components with a hair dryer.
- Spray water onto entire vehicle (not directly onto electrical components) to simulate humidity.

DTCS NOT DISPLAYED

NOTE: Use following procedure if DTCs are not displayed or air bag warning light stays on when jumper wire is connected between terminals Tc and E1 of DLC1.

Description

When DLC1 terminals Tc and E1 are connected together, air bag sensor assembly is set in Diagnostic Trouble Code (DTC) output mode. DTC is displayed by flashing AIR BAG warning light.

Diagnostic Procedure

1. Turn ignition switch from LOCK to ACC or ON position. If AIR BAG warning light does not illuminate for about 6 seconds, repair AIR BAG warning light circuit. See **WIRING DIAGRAMS** . If AIR BAG warning light illuminates for about 6 seconds, go to next step.
2. Measure voltage between DLC1 terminals Tc and E1. See **Fig. 14** . If 10-14 volts is present, go to step 4). If 10-14 volts is not present, go to next step.
3. Measure voltage between ground and DLC1 terminal Tc. If 10-14 volts is present, repair harness between ground and DLC1 terminal E1. See **WIRING DIAGRAMS** . If 10-14 volts is not present, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable and wait at least 90 seconds. Access and disconnect air bag sensor assembly connector C20 (center connector). See AIR BAG SENSOR ASSEMBLY under **REMOVAL & INSTALLATION** . Connect one end of jumper wire to harness side of air bag sensor assembly connector C20, terminal No. 19 (Circuit Tc, Pink/Black wire). See **Fig. 16** . Leave other end of jumper wire disconnected. Reconnect air bag sensor assembly connector with jumper wire connected. Connect negative battery cable and turn ignition switch to ACC or ON position. Wait at least 20 seconds. Connect unconnected end of jumper wire to ground. If AIR BAG warning light does not illuminate, replace air bag sensor assembly. If AIR BAG warning light illuminates, check Pink/Black wire between air bag sensor assembly and DLC1.

DTCS CONTINUOUSLY DISPLAYED

NOTE: Use following procedure if DTCs are displayed without connecting jumper wire between terminals Tc and E1 of DLC1.

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When DLC1 terminals Tc and E1 are connected together, air bag sensor assembly is set in Diagnostic Trouble Code (DTC) output mode. DTC is displayed by flashing AIR BAG warning light.

Diagnostic Procedure

1. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Access and disconnect air bag sensor assembly connector C20 (center connector). See AIR BAG SENSOR ASSEMBLY under **REMOVAL & INSTALLATION** .
2. Measure resistance between ground and air bag sensor assembly connector C20, terminal No. 19 (circuit Tc, Pink/Black wire). See **Fig. 16** . If resistance is more than one megohm, replace air bag sensor assembly. If resistance is less than one megohm, replace harness and connector.

SOURCE VOLTAGE DROP

Description

The air bag sensor assembly is equipped with a voltage-increase circuit to allow system operation in case source (battery) voltage drops below minimum. When battery voltage drops, voltage-increase circuit functions to increase voltage of air bag system to normal voltage.

The malfunction display for this circuit is different from other air bag system circuits. When source voltage drop is detected and no other DTCs are present, the AIR BAG warning light remains illuminated constantly. Source voltage drop is not recorded in air bag sensor assembly as a malfunction, and when source voltage returns to normal, AIR BAG warning light will turn off.

Diagnostic Procedure

1. Turn ignition switch to LOCK position. Disable air bag system. See **DISABLING SYSTEM** under DISABLING AND ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable.
2. Turn ignition switch to ON position. Turn on electrical accessories (defogger, wipers, headlights, blower motor, etc.). Measure voltage between ground and air bag sensor assembly connector C20, terminals No. 5 (circuit IG2, Black/Orange wire) and No. 6 (circuit ACC, Gray wire). See **Fig. 16** . Turn electrical accessories off. If voltage is 10-14 volts, go to next step. If voltage is not 10-14 volts, check harness between battery and air bag sensor assembly and check battery and charging system.
3. Turn ignition switch to LOCK position. Activate air bag system. See **ACTIVATING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Turn ignition switch to ON position. Turn on electrical accessories again. If AIR BAG warning light goes out, system operation is normal at this time. If AIR BAG warning light does not go out, check for DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC is displayed, go to appropriate DTC. If a normal code is displayed (2 flashes per second), replace air bag sensor assembly.

DTC 11/B0102: DRIVER-SIDE AIR BAG SQUIB CIRCUIT SHORT TO GROUND

Description

The driver-side air bag squib circuit consists of the air bag sensor assembly, spiral cable and driver-side air bag module. The squib causes driver-side air bag to deploy when all deployment conditions are satisfied.

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Possible Causes

DTC 11/B0102 could be caused by a short to ground in squib circuit, squib malfunction, spiral cable malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 11/B0102 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between ground and terminal D+ (Yellow/Black wire) of spiral cable side of upper spiral cable connector. See **WIRING DIAGRAMS** . If resistance is more than one megohm, go to next step. If resistance is less than one megohm, go to step 5).
3. Reconnect air bag sensor assembly connector C20 (center connector). Connect jumper wire between terminal D+ (Yellow/Black wire) and terminal D- (Yellow wire) of spiral cable side of upper spiral cable connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 11/B0102 is displayed, replace air bag sensor assembly. If DTC 11/B0102 is not displayed, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect upper spiral cable connector (to driver-side air bag module). Reconnect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 11/B0102 is displayed, replace driver-side air bag module. If DTC 11/B0102 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** .
5. Disconnect spiral cable lower connector. Measure resistance between ground and terminal D+ (Yellow/Black wire) of spiral cable side of upper spiral cable connector. If resistance is more than one megohm, repair or replace wiring harness or connector between spiral cable and air bag sensor assembly. If resistance is less than one megohm, replace spiral cable.

DTC 12/B0103: DRIVER-SIDE AIR BAG SQUIB CIRCUIT SHORT TO BATTERY

Description

The driver-side air bag squib circuit consists of the air bag sensor assembly, spiral cable and driver-side air bag module. The squib causes driver-side air bag to deploy when all deployment conditions are satisfied.

Possible Causes

DTC 12/B0103 could be caused by a short to battery in squib circuit, squib malfunction, spiral cable

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malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 12/B0103 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Connect negative battery cable.
2. Measure voltage between ground and D+ (Yellow/Black wire) terminal of spiral cable side of upper spiral cable connector. If voltage is zero volt, go to next step. If voltage more than zero volt, go to step 5).
3. Disconnect negative battery cable. Reconnect air bag sensor assembly connector C20 (center connector). Connect jumper wire between terminal D+ (Yellow/Black wire) and terminal D- (Yellow wire) of spiral cable side of upper spiral cable connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 12/B0103 is displayed, replace air bag sensor assembly. If DTC 12/B0103 is not displayed, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect upper spiral cable connector (to driver-side air bag module). Reconnect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 12/B0103 is displayed, replace driver-side air bag module. If DTC 12/B0103 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT**.
5. Disconnect spiral cable lower connector. Measure voltage between ground and terminal D+ (Yellow/Black wire) of spiral cable side of upper spiral cable connector. If voltage is zero volt, repair or replace wiring harness or connector between spiral cable and air bag sensor assembly. If voltage is more than zero volt, replace spiral cable.

DTC 13/B0100: SHORT IN DRIVER-SIDE AIR BAG MODULE SQUIB CIRCUIT

Description

The driver-side air bag squib circuit consists of the air bag sensor assembly, spiral cable and driver-side air bag module. The squib causes driver-side air bag to deploy when all deployment conditions are satisfied.

Possible Causes

DTC 13/B0100 could be caused by a short between D+ (Yellow/Black wire) and D- (Yellow wire) in squib circuit, squib malfunction, spiral cable malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 13/B0100 are displayed, disregard them.

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Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Release shorting spring mechanism on connector C20 (center connector). See **RELEASING SHORTING SPRING** under DIAGNOSIS & TESTING. Measure resistance between terminals D+ (Yellow/Black wire) and D- (Yellow wire) of spiral cable side of upper spiral connector. If resistance is less than one megohm, go to step 5). If resistance is more than one megohm, go to next step.
3. Connect air bag sensor assembly connector C20 (center connector). Reconnect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 13/B0100 is displayed, replace air bag sensor assembly. If DTC 13 is not displayed, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect upper spiral cable connector to driver-side air bag module. Reconnect negative battery cable. Wait at least 2 seconds. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 13/B0100 is displayed, replace driver-side air bag module. If DTC 13/B0100 is not displayed, the system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** .
5. Disconnect spiral cable lower spiral connector. Release shorting spring on spiral cable side of lower spiral cable connector. See **RELEASING SHORTING SPRING** under DIAGNOSIS & TESTING. Measure resistance between terminals D+ (Yellow/Black wire) and D- (Yellow wire) of spiral cable side of upper spiral cable connector. If resistance is less than one megohm, replace spiral cable. If resistance is more than one megohm, go to next step.
6. Release shorting spring on air bag sensor assembly connector C20 (center connector). Measure resistance between terminal D+ (Yellow/Black wire) and D- (Yellow wire) of air bag sensor assembly side of lower spiral cable connector. If resistance less than one megohm, repair or replace harness or connector between air bag sensor assembly and spiral cable. If resistance is more than one megohm, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** .

DTC 14/B0101: OPEN IN DRIVER-SIDE AIR BAG MODULE SQUIB CIRCUIT

Description

The driver-side air bag squib circuit consists of the air bag sensor assembly, spiral cable and driver-side air bag module. The squib causes driver-side air bag to deploy when all deployment conditions are satisfied.

Possible Causes

DTC 14/B0101 could be caused by a open in D+ (Yellow/Black wire) or D- (Yellow wire) in squib circuit, squib malfunction, spiral cable malfunction or air bag sensor assembly malfunction.

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NOTE: During testing, if DTCs other than DTC 14/B0101 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between terminals D+ (Yellow/Black wire) and D- (Yellow wire) of spiral cable side of upper spiral cable connector. If resistance is more than one ohm, go to step 5). If resistance is less than one ohm, go to next step.
3. Connect air bag sensor assembly connector C20 (center connector). Connect jumper wire between terminal D+ (Yellow/Black wire) and terminal D- (Yellow wire) of spiral cable side of upper spiral cable connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 14/B0101 is displayed, replace air bag sensor assembly. If DTC 14/B0101 is not displayed, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect upper spiral cable connector to driver-side air bag module. Reconnect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 14/B0101 is displayed, replace driver-side air bag module. If DTC 14/B0101 is not displayed, the system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT**.
5. Disconnect lower spiral cable connector. Measure resistance between terminals D+ (Yellow/Black wire) and D- (Yellow wire) of spiral cable side of upper spiral cable connector. If resistance is more than one ohm, replace spiral cable. If resistance is more than one ohm, go to next step.
6. Measure resistance between terminal D+ (Yellow/Black wire) and D- (Yellow wire) of air bag sensor assembly side of lower spiral cable connector. If resistance more than one ohm, repair or replace harness or connector between air bag sensor assembly and spiral cable. If resistance is less than one ohm, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT**.

DTC 15/B1156 & B1157: RIGHT FRONT AIR BAG SENSOR MALFUNCTION

Description

The front air bag sensor circuit consists of the air bag sensor assembly and front air bag sensor.

Possible Causes

DTC 15/B1156 or B1157 could be caused by a front air bag sensor malfunction.

Diagnostic Procedure

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1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Leave right front air bag sensor connected.
2. Measure resistance between air bag sensor assembly connector C20, terminals No. 9 (circuit SR+, Black/White wire) and No. 20 (circuit SR-, Brown/White wire). See **Fig. 16** . If resistance is 754-886 ohms, go to next step. If resistance is not 754-886 ohms, go to step 6).
3. Measure resistance between ground and air bag sensor assembly connector C20, terminal No. 9 (circuit SR+, Black/White wire). If resistance is more than one megohm, go to next step. If resistance is less than one megohm, go to step 9).
4. Connect negative battery cable. Wait 2 seconds. Measure voltage between ground and air bag sensor assembly connector C20, terminal No. 9 (circuit SR+, Black/White wire). If voltage is less than one volt, go to next step. If voltage is more than one volt, go to step 11).
5. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Connect air bag sensor assembly connector C20. Connect negative battery cable. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 15/B1156 or B1157 is displayed, replace air bag sensor assembly. If DTC 15/B1156 or B1157 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** under DIAGNOSTIC TESTS.
6. Disconnect right front air bag sensor connector. See FRONT AIR BAG SENSOR under **REMOVAL & INSTALLATION** . Measure resistance across sensor terminals. If resistance is 754-886 ohms, go to next step. If resistance is not 754-886 ohms, replace right front air bag sensor.
7. Disconnect right front air bag sensor Yellow 2-pin sub-harness connector. Connector is located at right kick panel. See **Fig. 4** . Measure resistance between Black/White and Brown/White wires of air bag sensor assembly side of right front air bag sensor harness connector. If resistance is more than one megohm, go to next step. If resistance is less than one megohm, repair or replace front air bag sensor sub-harness between sensor and kick panel.
8. Connect jumper wire between Black/White and Brown/White wires of front air bag sensor side of sub-harness connector located at right kick panel. Measure resistance between Black/White and Brown/White wires of air bag sensor assembly side of front air bag sensor harness connector. If resistance is more than one ohm, repair or replace sub-wire harness between sensor and kick panel. If resistance is less than one ohm, repair or replace wire harness or connector between air bag sensor assembly and sub-wire harness.
9. Disconnect right front air bag sensor connector. See FRONT AIR BAG SENSOR under **REMOVAL & INSTALLATION** . Measure resistance between ground and air bag sensor assembly connector C20, terminal No. 9 (circuit SR+, Black/White wire). Measure resistance between ground and air bag sensor assembly connector C20, terminal No. 20 (circuit SR-, Brown/White wire). If resistance is less than one megohm, go to next step. If resistance is more than one megohm, replace right front air bag sensor.
10. Disconnect right front air bag sensor Yellow 2-pin sub-harness connector. Connector is located at right kick panel. See **Fig. 4** . Measure resistance between ground and Black/White and Brown/White wires of front air bag sensor side of sub-harness kick panel connector individually. If resistance is more than one megohm, repair or replace harness or connector between air bag sensor assembly and sub-harness. If resistance is less than one megohm, replace sub-harness between sensor and kick panel.
11. Disconnect right front air bag sensor connector. Measure voltage between ground and air bag sensor assembly connector C20, terminal No. 9 (circuit SR+, Black/White wire). Measure voltage between ground and air bag sensor assembly connector C20, terminal No. 20 (circuit SR-, Brown/White wire). If

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voltage is more than one volt, go to next step. If voltage is less than one volt, replace right front air bag sensor.

12. Disconnect right front air bag sensor Yellow 2-pin sub-harness connector. Connector is located at right kick panel. See **Fig. 4** . Measure voltage between ground and Black/White and Brown/White wires of front air bag sensor side of sub-harness kick panel connector individually. If voltage is more than one volt, replace sub-harness between sensor and kick panel. If voltage is less than one volt, repair or replace harness or connector between air bag sensor assembly and sub-harness.

DTC 16/B1158 & B1159: LEFT FRONT AIR BAG SENSOR MALFUNCTION

Description

The front air bag sensor circuit consists of the center air bag sensor assembly and front air bag sensor.

Possible Causes

DTC 16/B1158 or B1159 could be caused by a front air bag sensor malfunction.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Leave left front air bag sensor connected.
2. Measure resistance between air bag sensor assembly connector C20, terminals No. 15 (circuit SL+, White/Red wire) and No. 26 (circuit SL-, Brown wire). See **Fig. 16** . If resistance is 754-886 ohms, go to next step. If resistance is not 754-886 ohms, go to step 6).
3. Measure resistance between ground and air bag sensor assembly connector C20, terminals No. 15 (circuit SL+, White/Red wire). If resistance is more than one megohm, go to next step. If resistance is less than one megohm, go to step 9).
4. Connect negative battery cable. Wait 2 seconds. Measure voltage between ground and air bag sensor assembly connector C20, terminals No. 15 (circuit SL+, White/Red wire). If voltage is less than one volt, go to next step. If voltage is more than one volt, go to step 11).
5. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Connect air bag sensor assembly connector C20. Connect negative battery cable. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve codes. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 16/B1158 or B1159 is displayed, replace air bag sensor assembly. If DTC 16/B1158 or B1159 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** under DIAGNOSTIC TESTS.
6. Disconnect left front air bag sensor connector. Measure resistance across sensor terminals. If resistance is 754-886 ohms, go to next step. If resistance is not 754-886 ohms, replace left front air bag sensor.
7. Disconnect left front air bag sensor Yellow 2-pin sub-harness connector. Connector is located at left kick panel. See **Fig. 4** . Measure resistance between White/Red and Brown wires of air bag sensor assembly side of front air bag sensor harness connector. If resistance is more than one megohm, go to next step. If resistance is less than one megohm, replace front air bag sensor sub-harness between sensor and kick panel.

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8. Connect jumper wire between White/Red and Brown wires of front air bag sensor side of sub-harness connector located at left kick panel. Measure resistance between White/Red and Brown wires of air bag sensor assembly side of front air bag sensor harness connector. If resistance is more than one ohm, replace sub-wire harness between sensor and kick panel. If resistance is less than one ohm, repair or replace harness or connector between air bag sensor assembly and sub-wire harness.
9. Disconnect right front air bag sensor connector. Measure resistance between ground and air bag sensor assembly connector C20, terminal No. 15 (circuit SL+, White/Red wire). Measure resistance between ground and air bag sensor assembly connector C20, terminal No. 26 (circuit SL-, Brown wire). If resistance is less than one megohm, go to next step. If resistance is more than one megohm, replace left front air bag sensor.
10. Disconnect left front air bag sensor Yellow 2-pin sub-harness connector. Connector is located at left kick panel. See **Fig. 4** . Measure resistance between ground and White/Red and Brown wires of front air bag sensor side of sub-harness kick panel connector individually. If resistance is more than one megohm, repair or replace harness or connector between air bag sensor assembly and sub-harness. If resistance is less than one megohm, replace sub-harness between sensor and kick panel.
11. Disconnect left front air bag sensor connector. Measure voltage between ground and air bag sensor assembly connector C20, terminal No. 15 (circuit SL+, White/Red wire). Measure voltage between ground and air bag sensor assembly connector C20, terminal No. 26 (circuit SL-, Brown wire). If voltage is more than one volt, go to next step. If voltage is less than one volt, replace left front air bag sensor.
12. Disconnect left front air bag sensor Yellow 2-pin sub-harness connector. Connector is located at left kick panel. See **Fig. 4** . Measure voltage between ground and White/Red and Brown wires of front air bag sensor side of sub-harness kick panel connector individually. If voltage is more than one volt, repair or replace sub-harness between sensor and kick panel. If voltage is less than one volt, repair or replace harness or connector between air bag sensor assembly and sub-harness.

DTC 31/B1100: AIR BAG SENSOR ASSEMBLY MALFUNCTION

Description

The air bag sensor assembly consists of an air bag sensor, safing sensor, drive circuit, diagnosis circuit and ignition control circuit. The air bag sensor assembly receives signals from air bag sensor, judges whether or not the air bag must be deployed and detects diagnosis system malfunction.

Possible Causes

DTC 31/B1100 could be caused by a air bag sensor assembly malfunction.

NOTE: If a DTC other than DTC 31/B1100 is displayed at same time as DTC 31/B1100, repair fault indicated by DTC other than DTC 31/B1100 before using this procedure.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable.
2. Turn ignition switch to ON position. Measure voltage between ground and air bag sensor assembly

connector C20, terminals No. 5 (circuit IG2, Black/Orange wire) and No. 6 (circuit ACC, Gray wire). See **Fig. 16** . If voltage is more than 16 volts, check battery and charging system operation. If voltage is less than 16 volts, go to next step.

3. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Repeat at least 5 times. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 31/B1100 is displayed, replace air bag sensor assembly. If DTC 31/B1100 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** .

DTC 51/B0107: SHORT TO GROUND IN PASSENGER-SIDE AIR BAG SQUIB CIRCUIT

Description

The passenger-side air bag squib circuit consists of the air bag sensor assembly and passenger-side air bag module. The squib circuit causes the passenger-side air bag to deploy when deployment conditions are satisfied.

Possible Causes

DTC 51/B0107 could be caused by a short to ground in Yellow/Red (circuit P+) and Yellow/Green (circuit P-) wires in passenger-side air bag squib circuit, passenger-side air bag squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 51/B0107 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between ground and Yellow/Red wire (circuit P+) of air bag sensor assembly side of passenger-side air bag squib harness connector. See **WIRING DIAGRAMS** . If resistance is less than one megohm, repair or replace harness or connector between passenger-side air bag module and air bag sensor assembly. If resistance is more than one megohm, go to next step.
3. Reconnect air bag sensor assembly connector C20 (center connector) to air bag sensor assembly. Connect jumper wire between Yellow/Red wire (circuit P+) and Yellow/Green wire (circuit P-) of air bag sensor assembly side of passenger-side air bag squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 51/B0107 is not displayed, go to next step. If DTC 51/B0107 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side air bag module connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs.

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See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 51/B0107 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 51/B0107 is displayed, replace passenger-side air bag module.

DTC 52/B0108: SHORT TO BATTERY IN PASSENGER-SIDE AIR BAG SQUIB CIRCUIT

Description

The passenger-side air bag squib circuit consists of the air bag sensor assembly and passenger-side air bag module. The squib circuit causes the passenger-side air bag to deploy when deployment conditions are satisfied.

Possible Causes

DTC 52/B0108 could be caused by a short to battery in Yellow/Red (circuit P+) and Yellow/Green (circuit P-) wires in passenger-side air bag squib circuit, passenger-side air bag squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 52/B0108 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable.
2. Turn ignition switch to ACC or ON position. Measure voltage between ground and Yellow/Red wire (circuit P+) of air bag sensor assembly side of passenger-side air bag squib harness connector. See **WIRING DIAGRAMS** . If voltage is zero volt, go to next step. If voltage is not zero volt, repair or replace harness or connector between passenger-side air bag module and air bag sensor assembly.
3. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect air bag sensor assembly connector C20 (center connector) to air bag sensor assembly. Connect jumper wire between Yellow/Red wire (circuit P+) and Yellow/Green wire (circuit P-) of air bag sensor assembly side of passenger-side air bag squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 52/B0108 is not displayed, go to next step. If DTC 52/B0108 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side air bag module connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 52/B0108 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 52/B0108 is displayed, replace passenger-side air bag module.

DTC 53/B0105: SHORT IN PASSENGER-SIDE AIR BAG SQUIB CIRCUIT

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Description

The passenger-side air bag squib circuit consists of the air bag sensor assembly and passenger-side air bag module. The squib circuit causes the passenger-side air bag to deploy when deployment conditions are satisfied.

Possible Causes

DTC 53/B0105 could be caused by a short in Yellow/Red (circuit P+) and Yellow/Green (circuit P-) wires in passenger-side air bag squib circuit, passenger-side air bag squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 53/B0105 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Release shorting spring on air bag sensor connector C20 (center connector). See **RELEASING SHORTING SPRING** under DIAGNOSIS & TESTING. Measure resistance between Yellow/Red wire (circuit P+) and Yellow/Green wire (circuit P-) of air bag sensor assembly side of passenger-side air bag squib harness connector. See **WIRING DIAGRAMS**. If resistance is more than one megohm, go to next step. If resistance is less than one megohm, repair or replace harness or connector between passenger-side air bag module and air bag sensor assembly.
3. Reconnect air bag sensor assembly connector C20 to air bag sensor assembly. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 53/B0105 is not displayed, go to next step. If DTC 53/B0105 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side air bag module connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 53/B0105 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT**. If DTC 53/B0105 is displayed, replace passenger-side air bag module.

DTC 54/B0106: OPEN IN PASSENGER-SIDE AIR BAG SQUIB CIRCUIT

Description

The passenger-side air bag squib circuit consists of the air bag sensor assembly and passenger-side air bag module. The squib circuit causes the passenger-side air bag to deploy when deployment conditions are satisfied.

Possible Causes

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DTC 54/B0106 could be caused by an open in Yellow/Red (circuit P+) and Yellow/Green (circuit P-) wires in passenger-side air bag squib circuit, passenger-side air bag squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 54/B0106 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between Yellow/Red wire (circuit P+) and Yellow/Green wire (circuit P-) of air bag sensor assembly side of passenger-side air bag squib harness connector. See **WIRING DIAGRAMS** . If resistance is less than one ohm, go to next step. If resistance is more than one ohm, repair or replace harness or connector between passenger-side air bag module and air bag sensor assembly.
3. Reconnect air bag sensor assembly connector C20 (center connector) to air bag sensor assembly. Connect jumper wire between Yellow/Red wire (circuit P+) and Yellow/Green wire (circuit P-) of air bag sensor assembly side of passenger-side air bag squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 54/B0106 is not displayed, go to next step. If DTC 54/B0106 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side air bag module connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 54/B0106 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 54/B0106 is displayed, replace passenger-side air bag module.

DTC 61/B0132: SHORT TO GROUND IN PASSENGER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The passenger-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and passenger-side seat belt pretensioner. The squib circuit causes the passenger-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 61/B0132 could be caused by a short to ground in Yellow/Black (circuit PR+) and Yellow (circuit PR-) wires in passenger-side seat belt pretensioner squib circuit, passenger-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

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NOTE: During testing, if DTCs other than DTC 61/B0132 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between ground and Yellow/Black wire (circuit PR+) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If resistance is less than one megohm, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If resistance is more than one megohm, go to next step.
3. Reconnect air bag sensor assembly connector C21 to air bag sensor assembly. Connect jumper wire between Yellow/Black wire (circuit PR+) and Yellow wire (circuit PR-) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 61/B0132 is not displayed, go to next step. If DTC 61/B0132 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 61/B0132 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 61/B0132 is displayed, replace passenger-side seat belt pretensioner.

DTC 62/B0133: SHORT TO BATTERY IN PASSENGER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The passenger-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and passenger-side seat belt pretensioner. The squib circuit causes the passenger-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 62/B0133 could be caused by a short to battery in Yellow/Black (circuit PR+) and Yellow (circuit PR-) wires in passenger-side seat belt pretensioner squib circuit, passenger-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 62/B0133 are displayed, disregard them.

Diagnostic Procedure

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1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable.
2. Turn ignition switch to ON position. Measure voltage between ground and Yellow/Black wire (circuit PR+) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If voltage is not zero volt, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If voltage is zero volt, go to next step.
3. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect air bag sensor assembly connector C21 to air bag sensor assembly. Connect jumper wire between Yellow/Black wire (circuit PR+) and Yellow wire (circuit PR-) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 62/B0133 is not displayed, go to next step. If DTC 62/B0133 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 62/B0133 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 62/B0133 is displayed, replace passenger-side seat belt pretensioner.

DTC 63/B0130: SHORT IN PASSENGER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The passenger-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and passenger-side seat belt pretensioner. The squib circuit causes the passenger-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 63/B0130 could be caused by a short between Yellow/Black (circuit PR+) and Yellow (circuit PR-) wires in passenger-side seat belt pretensioner squib circuit, passenger-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 63/B0130 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Release shorting spring on air bag sensor assembly connector C21 (right connector). See **RELEASING**

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SHORTING SPRING under DIAGNOSIS & TESTING. Measure resistance between Yellow/Black wire (circuit PR+) and Yellow wire (circuit PR-) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If resistance is less than one megohm, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If resistance is more than one megohm, go to next step.

3. Reconnect air bag sensor assembly connector C21 to air bag sensor assembly. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 63/B0130 is not displayed, go to next step. If DTC 63/B0130 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 63/B0130 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 63/B0130 is displayed, replace passenger-side seat belt pretensioner.

DTC 64/B0131: OPEN IN PASSENGER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The passenger-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and passenger-side seat belt pretensioner. The squib circuit causes the passenger-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 64/B0131 could be caused by an open in Yellow/Black (circuit PR+) or Yellow (circuit PR-) wires in passenger-side seat belt pretensioner squib circuit, passenger-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 64/B0131 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between Yellow/Black wire (circuit PR+) and Yellow wire (circuit PR-) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If resistance is more than one ohm, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If resistance is less than one ohm, go to next step.
3. Reconnect air bag sensor assembly connector C21 to air bag sensor assembly. Connect jumper wire

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between Yellow/Black wire (circuit PR+) and Yellow wire (circuit PR-) of air bag sensor assembly side of passenger-side seat belt pretensioner squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 64/B0131 is not displayed, go to next step. If DTC 64/B0131 is displayed, replace air bag sensor assembly.

4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect passenger-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 64/B0131 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 64/B0131 is displayed, replace passenger-side seat belt pretensioner.

DTC 71/B0137: SHORT TO GROUND IN DRIVER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The driver-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and driver-side seat belt pretensioner. The squib circuit causes the driver-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 71/B0137 could be caused by a short to ground in Yellow/Black (circuit PL+) and Yellow (circuit PL-) wires in driver-side seat belt pretensioner squib circuit, driver-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 71/B0137 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between ground and Yellow/Black wire (circuit PL+) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If resistance is less than one megohm, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If resistance is more than one megohm, go to next step.
3. Reconnect air bag sensor assembly connector C19 to air bag sensor assembly. Connect jumper wire between Yellow/Black wire (circuit PL+) and Yellow wire (circuit PL-) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See

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CLEARING CODES under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 71/B0137 is not displayed, go to next step. If DTC 71/B0137 is displayed, replace air bag sensor assembly.

4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect driver-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 71/B0137 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 71/B0137 is displayed, replace driver-side seat belt pretensioner.

DTC 72/B0138: SHORT TO BATTERY IN DRIVER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The driver-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and driver-side seat belt pretensioner. The squib circuit causes the driver-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 72/B0138 could be caused by a short to battery in Yellow/Black (circuit PL+) and Yellow (circuit PL-) wires in driver-side seat belt pretensioner squib circuit, driver-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 72/B0138 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM. Reconnect negative battery cable.
2. Measure voltage between ground and Yellow/Black wire (circuit PL+) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If voltage is not zero volt, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If voltage is zero volt, go to next step.
3. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect air bag sensor assembly connector C19 to air bag sensor assembly. Connect jumper wire between Yellow/Black wire (circuit PL+) and Yellow wire (circuit PL-) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 72/B0138 is not displayed, go to

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next step. If DTC 72/B0138 is displayed, replace air bag sensor assembly.

4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect driver-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 72/B0138 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 72/B0138 is displayed, replace driver-side seat belt pretensioner.

DTC 73/B0135: SHORT IN DRIVER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The driver-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and driver-side seat belt pretensioner. The squib circuit causes the driver-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 73/B0135 could be caused by a short between Yellow/Black (circuit PL+) and Yellow (circuit PL-) wires in driver-side seat belt pretensioner squib circuit, driver-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 73/B0135 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Release shorting spring on air bag sensor assembly connector C19. See **RELEASING SHORTING SPRING** under DIAGNOSIS & TESTING. Measure resistance between Yellow/Black wire (circuit PL+) and Yellow wire (circuit PL-) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If resistance is less than one megohm, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If resistance is more than one megohm, go to next step.
3. Reconnect air bag sensor assembly connector C19 to air bag sensor assembly. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 73/B0135 is not displayed, go to next step. If DTC 73/B0135 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect driver-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at

least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 73/B0135 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 73/B0135 is displayed, replace driver-side seat belt pretensioner.

DTC 74/B0136: OPEN IN DRIVER-SIDE SEAT BELT PRETENSIONER SQUIB CIRCUIT

Description

The driver-side seat belt pretensioner squib circuit consists of the air bag sensor assembly and driver-side seat belt pretensioner. The squib circuit causes the driver-side seat belt pretensioner to deploy when deployment conditions are satisfied.

Possible Causes

DTC 74/B0136 could be caused by an open in Yellow/Black (circuit PL+) or Yellow (circuit PL-) wires in driver-side seat belt pretensioner squib circuit, driver-side seat belt pretensioner squib malfunction or air bag sensor assembly malfunction.

NOTE: During testing, if DTCs other than DTC 74/B0136 are displayed, disregard them.

Diagnostic Procedure

1. Disable air bag system. See **DISABLING SYSTEM** under DISABLING & ACTIVATING AIR BAG SYSTEM.
2. Measure resistance between Yellow/Black wire (circuit PL+) and Yellow wire (circuit PL-) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. See **WIRING DIAGRAMS** . If resistance is more than one ohm, repair or replace harness or connector between seat belt pretensioner and air bag sensor assembly. If resistance is less than one ohm, go to next step.
3. Reconnect air bag sensor assembly connector C19 to air bag sensor assembly. Connect jumper wire between Yellow/Black wire (circuit PL+) and Yellow wire (circuit PL-) of air bag sensor assembly side of driver-side seat belt pretensioner squib harness connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 74/B0136 is not displayed, go to next step. If DTC 74/B0136 is displayed, replace air bag sensor assembly.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Reconnect driver-side seat belt pretensioner connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear DTCs. See **CLEARING CODES** under DIAGNOSIS & TESTING. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Retrieve DTCs. See **RETRIEVING CODES** under DIAGNOSIS & TESTING. If DTC 74/B0136 is not displayed, system is functioning properly at this time. Check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** . If DTC 74/B0136 is displayed, replace driver-side seat belt pretensioner.

TORQUE SPECIFICATIONS

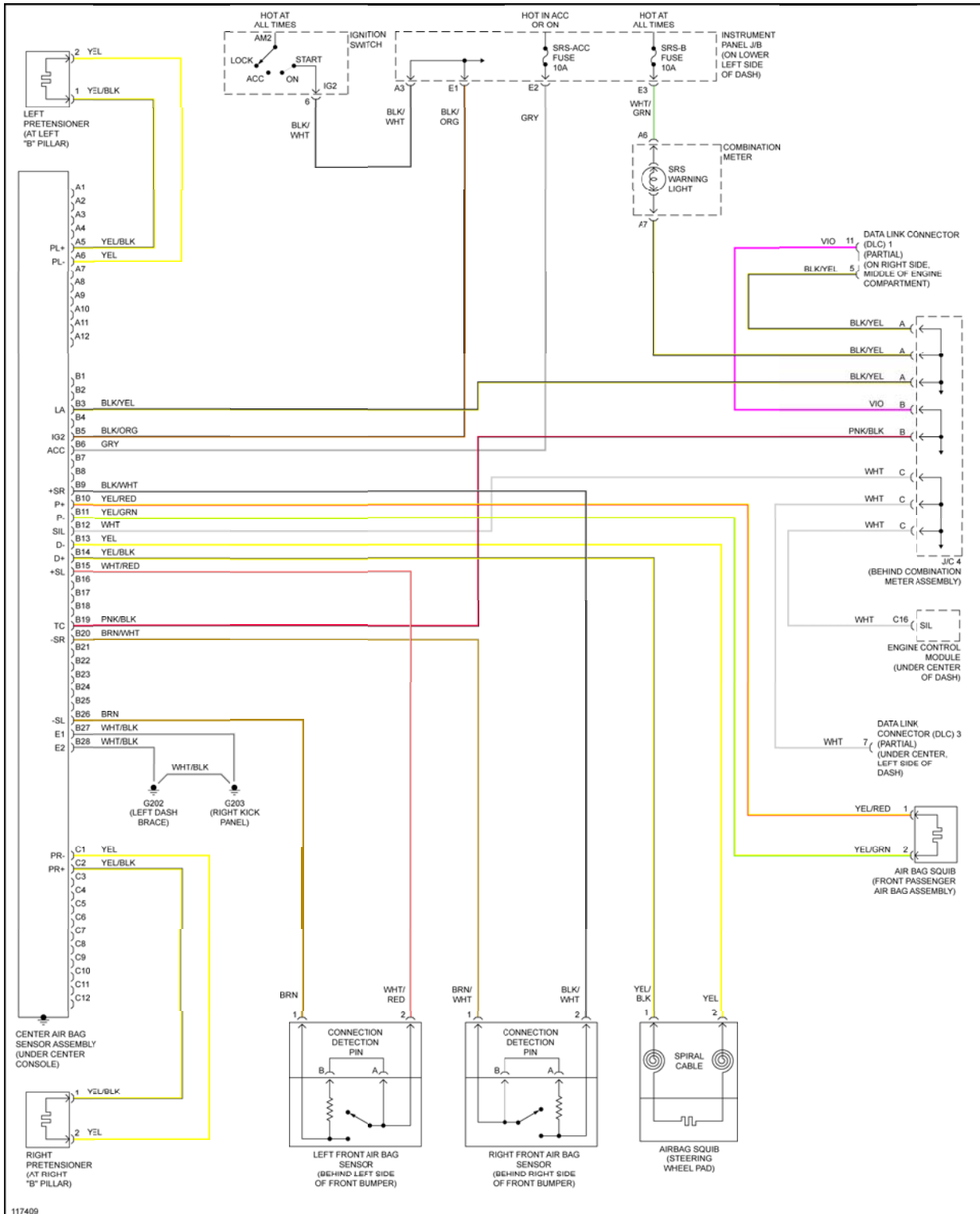
TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Air Bag Sensor Assembly Screws	15 (20)
Front Air Bag Sensor Mounting Screws	15 (20)
Passenger-Side Air Bag Module Bolt	15 (20)
Seat Belt Floor Anchor Bolt	32 (43)
Seat Belt Pretensioner Lower Bolt	32 (43)
Seat Belt Shoulder Anchor Bolt	32 (43)
Steering Shaft Pinch Bolt	26 (35)
Steering Wheel Nut	25 (34)
INCH Lbs. (N.m)	
Driver-Side Air Bag Module Screw	78 (8.8)
Seat Belt Pretensioner Upper Bolt	66 (7.5)

WIRING DIAGRAMS

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Fig. 17: Air Bag System Wiring Diagram (RAV4)