

1996 Toyota 4Runner

AIR BAG RESTRAINT SYSTEM 1996 ACCESSORIES/SAFETY EQUIPMENT Toyota Air Bag Restraint System

AIR BAG RESTRAINT SYSTEM

1996 ACCESSORIES/SAFETY EQUIPMENT Toyota Air Bag Restraint System

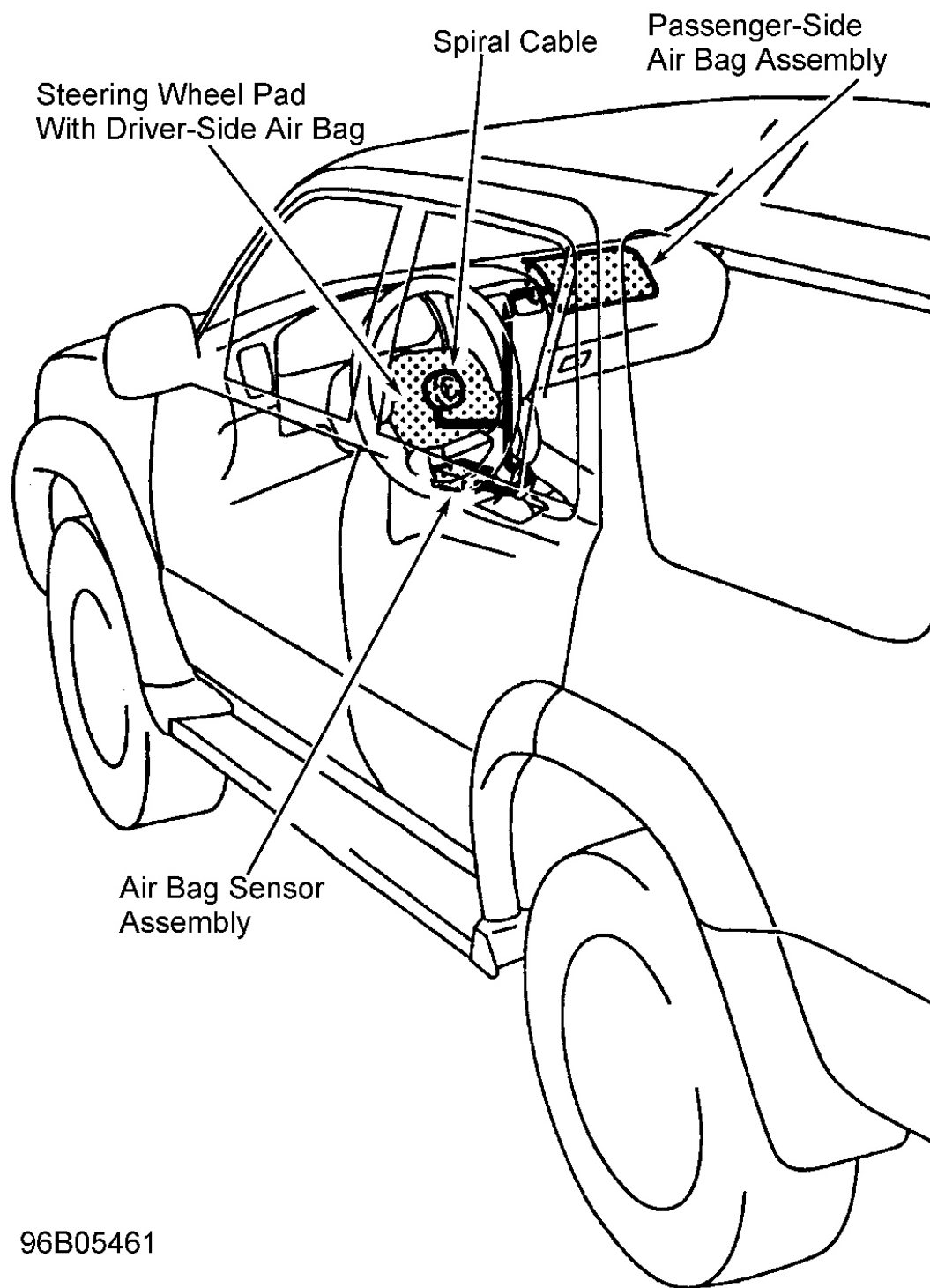
DESCRIPTION & OPERATION

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

Supplemental Restraint System (SRS) deploys a steering wheel pad (driver-side air bag) and passenger-side air bag during a frontal impact of sufficient force. See **Fig. 1** .

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96B05461

Fig. 1: Locating SRS Components

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

The air bag sensor, which deploys air bags, contains a back-up power supply, safing sensor and diagnostic code memory. Spiral cable (clockspring) maintains a complete circuit to the steering wheel pad.

SYSTEM OPERATION CHECK

Turn ignition switch to ACC or ON position. Air bag warning light in instrument cluster should come on for about 6 seconds and then go out. If light does not respond as specified, SRS is malfunctioning and needs repair. See [DIAGNOSIS](#) .

SERVICE PRECAUTIONS

Observe the following precautions when working on SRS:

- Before servicing any SRS or steering column component, disable SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Failure to disable system could result in accidental air bag deployment and personal injury.
- When diagnosing SRS, always check for diagnostic codes before disconnecting battery.
- After ignition switch is turned to LOCK position and negative battery cable is disconnected, wait at least 90 seconds before working on SRS. SRS is equipped with a back-up power source that may allow air bag to deploy within 90 seconds of disconnecting negative battery cable.
- In a minor collision in which air bags do not deploy, steering wheel pad must be inspected.
- NEVER use air bag parts from another vehicle. Replace air bag parts with new parts.
- Air bag sensor assembly contains mercury. After replacement, **DO NOT** destroy the old part. When scrapping vehicle or replacing air bag sensor assembly, remove air bag sensor assembly and dispose of as toxic waste.
- Never disassemble or repair system components. Replace cracked, dented or otherwise damaged system components.
- Remove air bag sensor if shocks are likely to be applied to the sensor during repairs.
- When diagnosing electrical circuits, use a Digital Volt/Ohmmeter (DVOM) with high impedance (10,000 ohms minimum).
- Information labels are attached to air bag components. Follow all notices on labels.
- After servicing SRS, 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, away from surface. This will reduce motion of module if accidentally deployed.
- After deployment, air bag surface may contain deposits of sodium hydroxide which irritates skin. During clean-up, always wear safety glasses, rubber gloves and long-sleeved shirt. After clean-up, wash hands using mild soap and water.
- When carrying a live air bag module, trim cover must be pointed away from your body to minimize injury in case of accidental deployment.
- If SRS 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 SRS is not functional, park vehicle until it is repaired and functions properly.

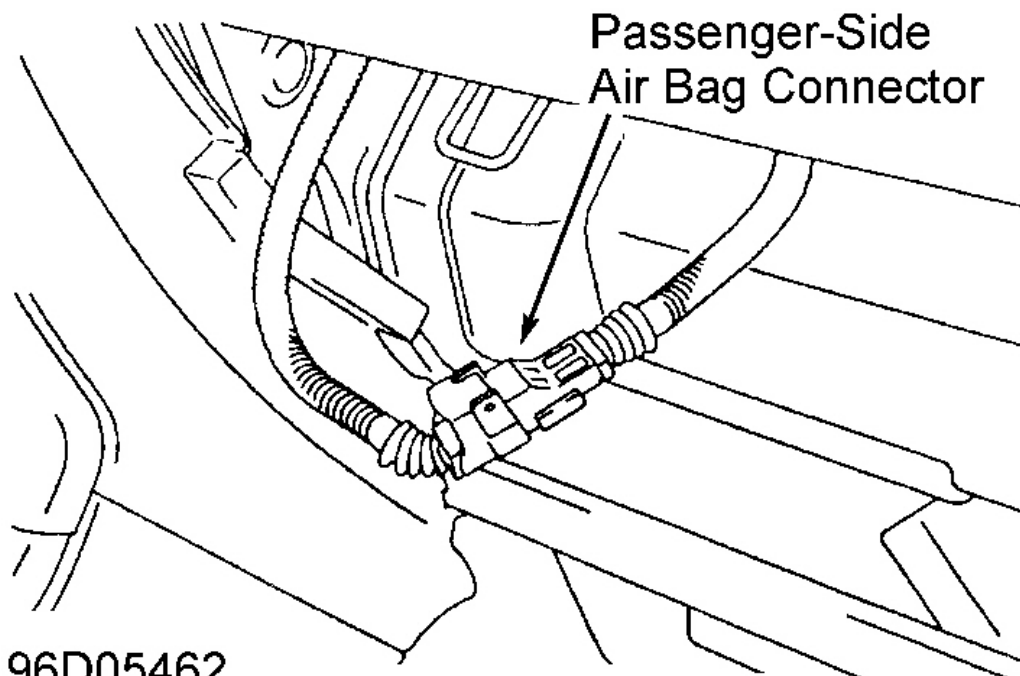
DISABLING & ACTIVATING AIR BAG SYSTEM

NOTE: If diagnosing SRS, check for diagnostic codes before disconnecting negative battery cable.

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

DISABLING SYSTEM

Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds before working on system. On the passenger side, remove glove box door. Disconnect passenger-side air bag connector. See **Fig. 2**. Remove steering column lower cover. Disconnect driver-side air bag connector-to-spiral cable connector. See **Fig. 3**. Disconnect connector of air bag sensor assembly, located forward of center console.



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Fig. 2: Disconnecting Passenger-Side Air Bag Connector

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

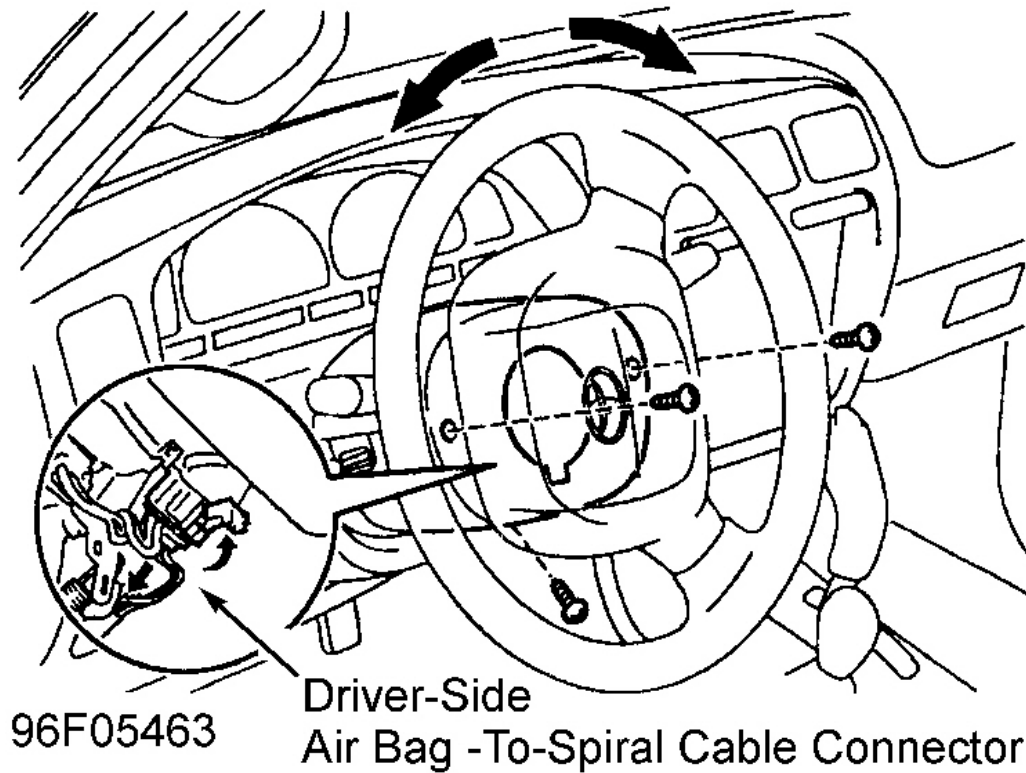


Fig. 3: Disconnecting Driver-Side Air Bag Connector

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

ACTIVATING SYSTEM

Reconnect air bag sensor assembly connector. Reconnect passenger-side air bag connector and driver-side air bag-to-spiral cable connector. Reinstall steering wheel pad. 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 undeployed components may violate federal, state and/or local laws. If scrapping vehicle, components must be deployed while still mounted in vehicle. DO NOT deploy components inside vehicle unless vehicle is to be scrapped. Wear gloves and safety

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glasses when handling components. Wrap deployed components in a sturdy plastic bag. Dispose of components like any other part.

DEPLOYING AIR BAG

On-Vehicle Deployment (Scrapped Vehicles Only)

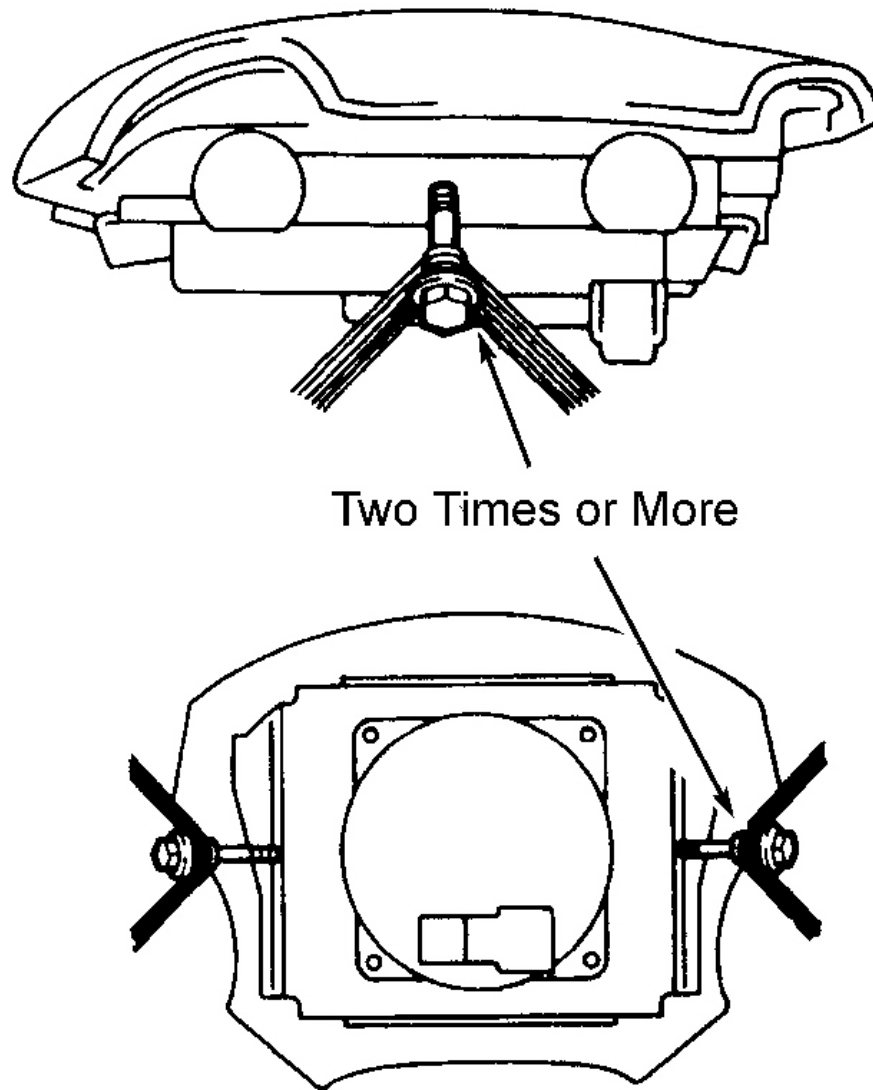
1. Before proceeding, follow service precautions. See **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds before working on system.
2. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Connect Deployment Tool (09082-00700) to air bag 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 within 33 feet of vehicle. Press deployment tool activation switch to deploy air bag. Because of heat, **DO NOT** touch air bag for at least 30 minutes after deployment.

Off-Vehicle Deployment (Driver-Side)

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Remove steering wheel pad from vehicle. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION.

WARNING: When attaching air bag assembly to tire, ensure wire is tight. If slack is present, or if wire is not strong enough, air bag assembly may become loose due to shock when air bag is deployed.

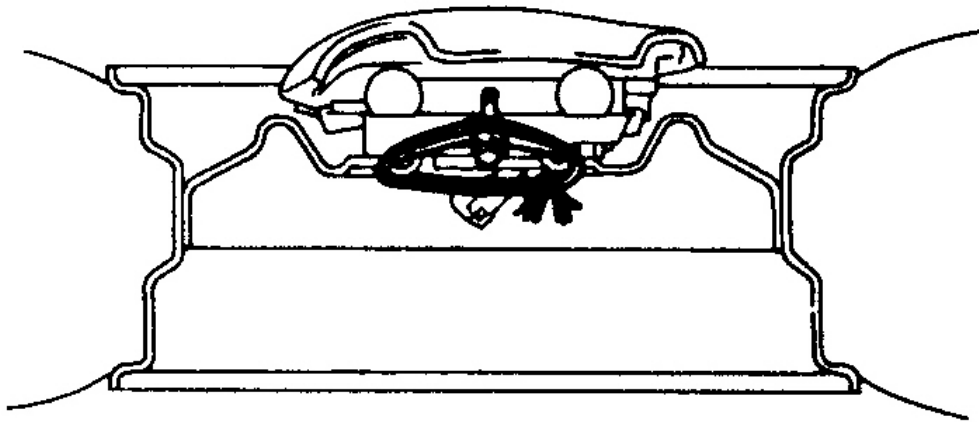
2. Remove connector on steering wheel pad rear surface and install 2.236" (6.0 mm) bolts (1.38" 35 mm long) with washers in steering wheel pad. Bolts should have a pitch of .039" (1.0 mm). Tighten bolts by hand until they become difficult to turn. **DO NOT** overtighten bolts. Obtain a wheel and tire assembly. Using a service-purpose wire harness, tie down the steering wheel pad to the wheel and tire assembly.
3. Wrap heavy-gauge 3-wire harness around bolts at least twice. See **Fig. 4** . Ensure no slack is present in wire. If slack is present, or if wire is not strong enough, steering wheel pad may become loose due to shock when air bag is deployed.



96H05317

Fig. 4: Installing Wire On Steering Wheel Pad
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. Position steering wheel pad on rim and tire assembly with pad side facing upward. Ensuring wire is tight, separately tie left and right sides of steering wheel pad to wheel rim through lug nut holes. See **Fig. 5** .



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Fig. 5: Installing Steering Wheel Pad On Wheel Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

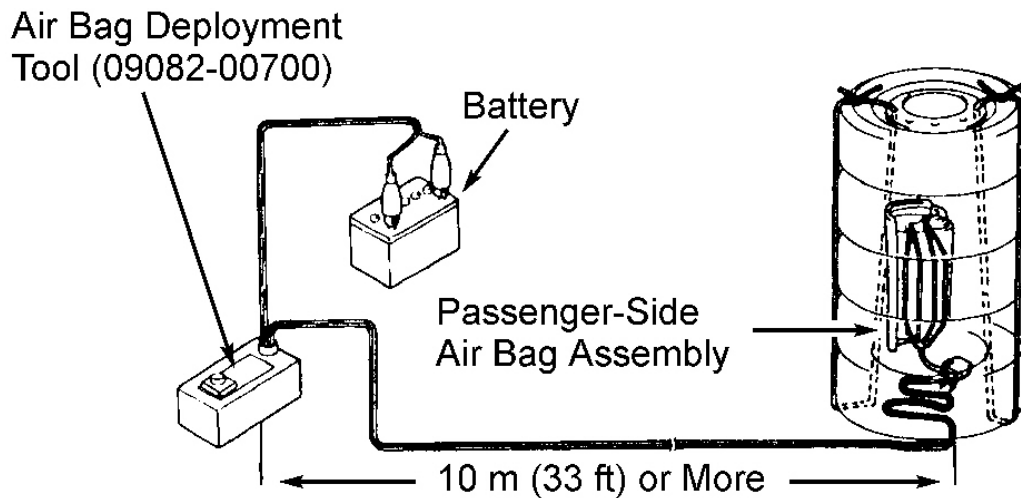
5. Connect Deployment Tool (09082-00700) to steering wheel pad connector. Position deployment tool at least 33 feet from steering wheel pad. Obtain cardboard box larger than wheel assembly and place it over wheel assembly, or stack 3 scrap tires on top of rim and tire assembly (but NOT directly on top of steering wheel pad).
6. Connect deployment tool Red clip to positive battery terminal and Black clip to negative battery terminal. Ensure no one is within 33 feet of steering wheel pad. Press activation switch to deploy air bag. Because of heat, wait 30 minutes before handling air bag. Place deployed air bag assembly in a vinyl bag, secure tightly, and dispose of as with any general parts.

Off-Vehicle Deployment (Passenger-Side)

1. Before proceeding, read air bag service precautions section. See **SERVICE PRECAUTIONS**. Remove the passenger-side air bag. See **PASSENGER-SIDE AIR BAG** under REMOVAL & INSTALLATION.

WARNING: When attaching air bag assembly to tire, ensure wire is tight. If slack is present, or if wire is not strong enough, air bag assembly may become loose due to shock when air bag is deployed.

2. Obtain a scrap tire without a rim. Thread heavy-gauge wire through mounting bolt holes on air bag assembly. Wrap wire around each bolt for at least 2 turns. Position passenger-side air bag onto tire with air bag facing center of tire. See **Fig. 6**. Attach air bag assembly to tire.



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Fig. 6: Deploying Passenger-Side Air Bag Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. Connect Deployment Tool (09082-00700) to air bag assembly connector. Assemble a stack of 5 tires with air bag assembly in middle of stack (ensure top tire has a wheel rim on it). See **Fig. 6** . Tie tires together from top to bottom with 2 wire harness. Connect Deployment Tool connector to passenger-side air bag connector. Position deployment tool at least 33 feet from air bag assembly.
4. Connect deployment tool Red clip to positive battery terminal and Black clip to negative battery terminal. Ensure no one is within 33 feet of steering wheel pad. Press activation switch to deploy air bag. Because of heat, wait 30 minutes before handling air bag. Place deployed air bag assembly in a vinyl bag, secure tightly, and dispose of as with any general parts.

ADJUSTMENTS

SPIRAL CABLE

Ensure front wheels are in straight-ahead position. Turn spiral cable counterclockwise until it is hard to turn. Turn spiral cable clockwise about 3 turns until marks are aligned. See **Fig. 7** .

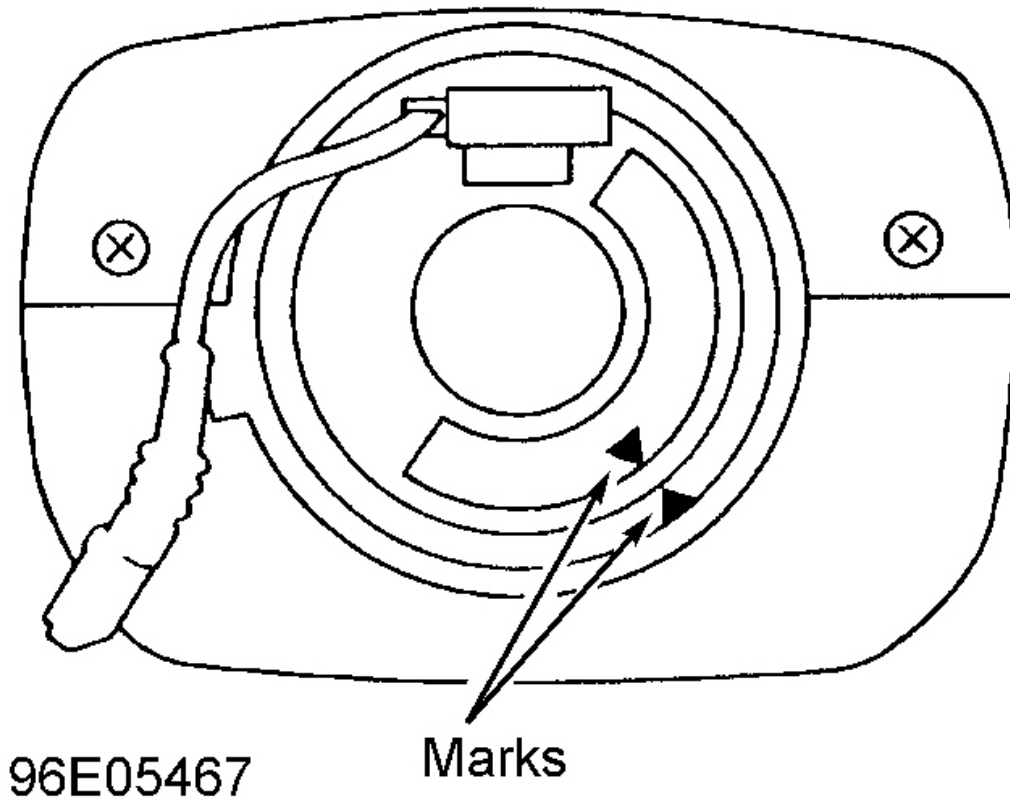


Fig. 7: Aligning Marks On Spiral Cable

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

REMOVAL & INSTALLATION

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

AIR BAG SENSOR ASSEMBLY

NOTE: Disconnect air bag sensor electrical connector before removing sensor mounting screws.

1. Before proceeding, see **SERVICE PRECAUTIONS** . Disable SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Air bag sensor is located forward of center console. See **Fig. 1** . Remove upper console panel, rear console box, console panel garnish, ash receptacle box, heater control panel, and center cluster finish panel. See **Fig. 8** . Disconnect the connector with air bag sensor installed. Remove 3 Torx screws and air bag sensor assembly.

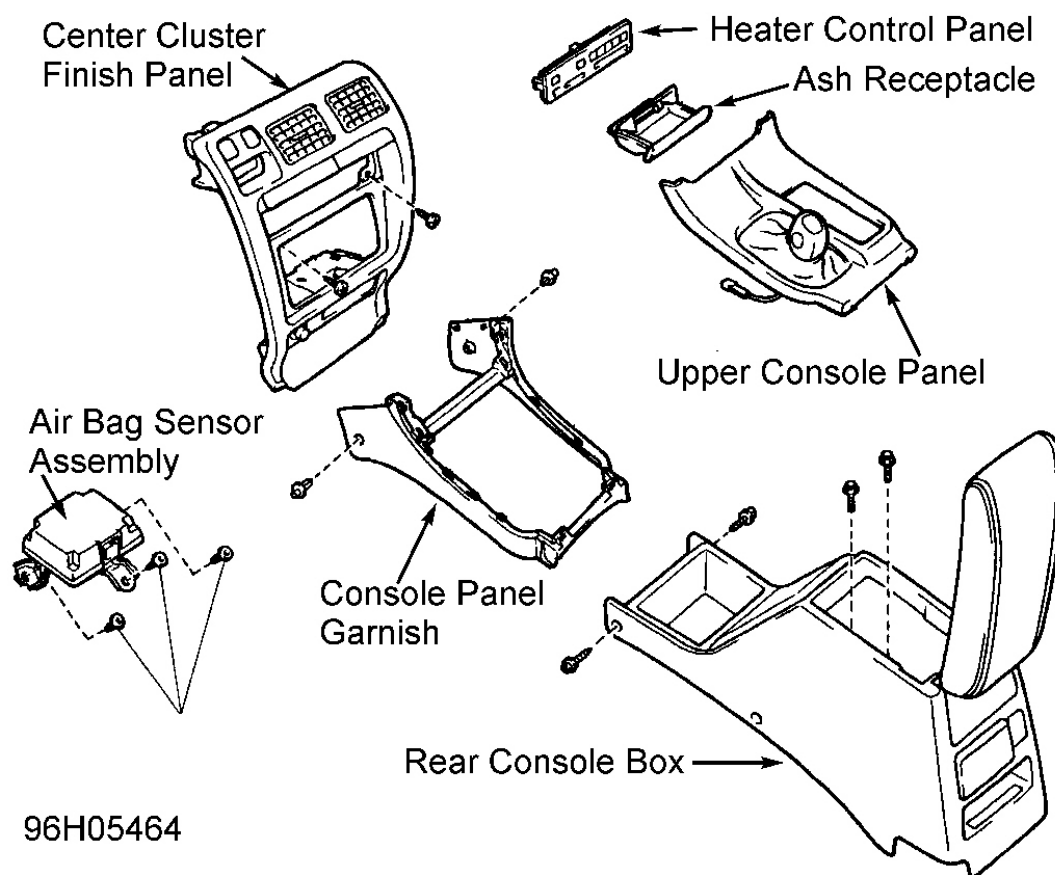


Fig. 8: Removing Air Bag Sensor

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

Installation

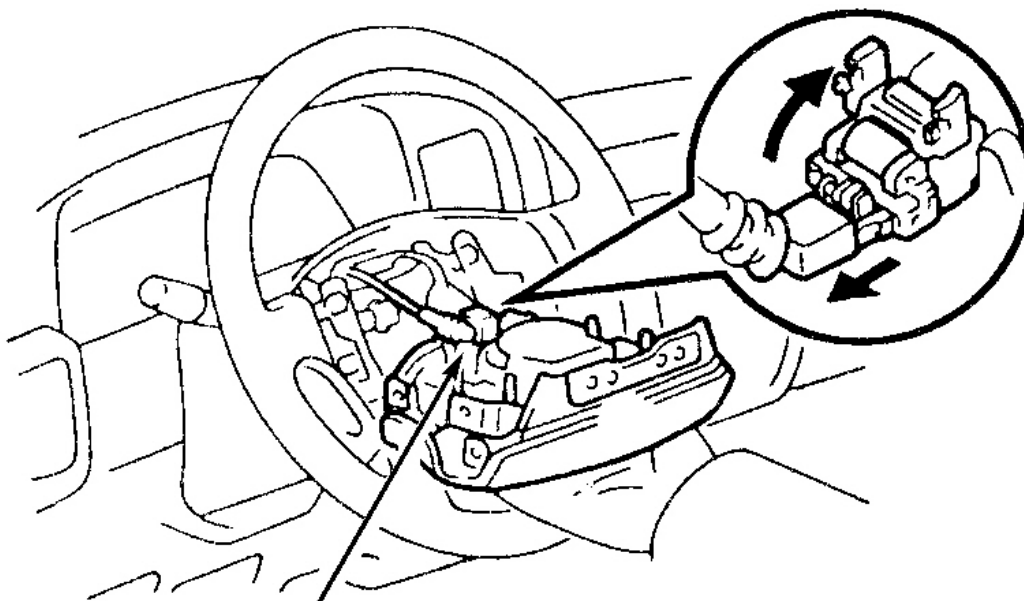
To install, reverse removal procedure. Tighten 3 air bag sensor screws to specification. See **TORQUE SPECIFICATIONS** . Connect air bag sensor connector after the sensor is installed. Activate SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check air bag warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

Removal

1. Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Ensure front wheels are in a straight-ahead position. Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds before working on system.
2. Remove steering wheel lower covers. Loosen 2 Torx screws. Pull wheel pad out from steering wheel and disconnect air bag connector. See **Fig. 9** . Pull steering wheel pad out and disconnect air bag connector. See **Fig. 3** .

NOTE: Loosen 2 screws until groove along screw circumference catches on screw case.

3. Remove steering wheel nut. Match mark steering wheel and main shaft. Remove steering wheel using puller. Remove upper and lower column covers, instrument lower finish panel and No. 2 heater register duct.
4. Disconnect 2 combination switch/spiral cable connectors. Remove 3 screws, remove combination switch and spiral cable. **DO NOT** disassemble cable.



Driver-Side Air Bag Connector

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Fig. 9: Removing Steering Wheel Pad

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WARNING: During installation, if spiral cable mating mark is not properly aligned, steering wheel may not turn completely, or flat cable inside spiral cable may be severed, disabling SRS system.

Installation

To install, reverse removal procedure. Ensure spiral cable is properly aligned. See **SPIRAL CABLE** under **ADJUSTMENTS**. Connect air bag connector. Tighten 2 Torx screws to specification. See **TORQUE SPECIFICATIONS** . Install steering wheel side covers. Perform **SYSTEM OPERATION CHECK** .

PASSENGER-SIDE AIR BAG

Removal & Installation

1. Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Turn ignition switch to LOCK position. Disconnect and shield negative battery cable. Wait at least 90 seconds before working on system.
2. Disable SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Remove instrument panel. Remove the 2 bolts securing passenger-side air bag. See **Fig. 10** . Remove air bag. Remove 3 bolts and pry up the 5 air bag door clips and remove the air bag door. See **Fig. 11** .
3. To install, reverse removal procedure. Tighten passenger-side air bag bolts to specification. See **TORQUE SPECIFICATIONS** . Activate SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check air bag warning light to ensure system is functioning properly. See **SYSTEM OPERATION CHECK** .

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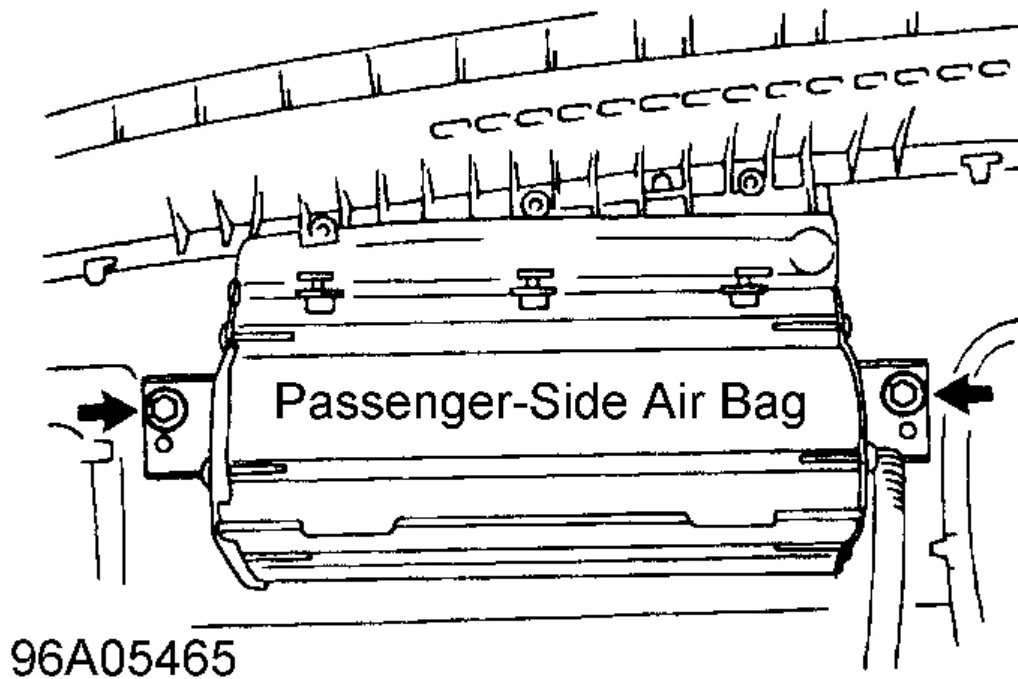


Fig. 10: Removing Passenger-Side Air Bag
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

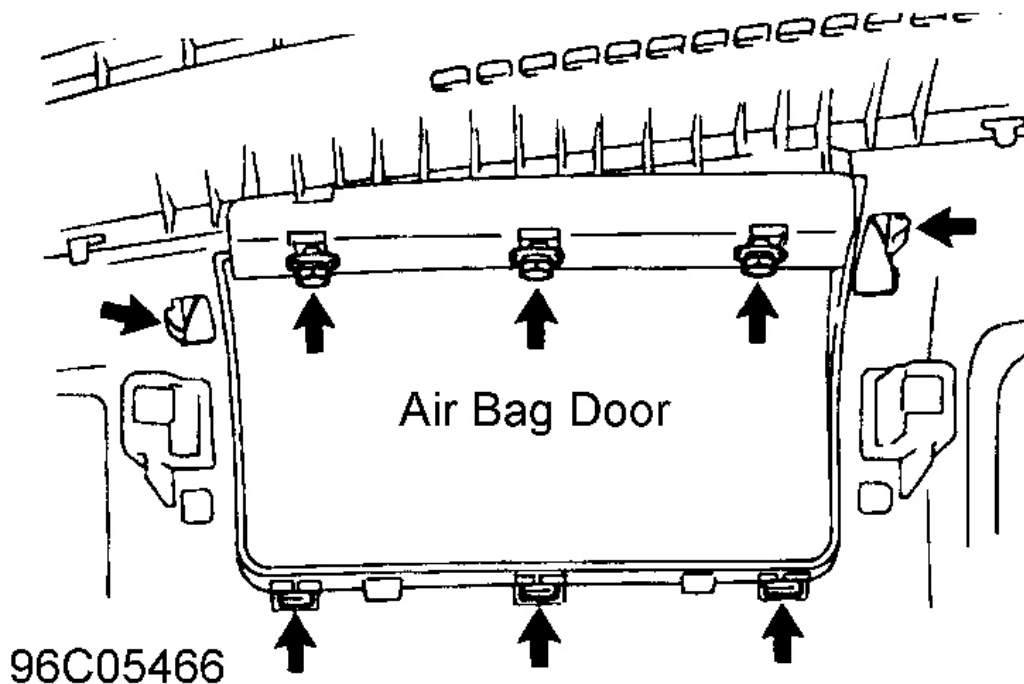


Fig. 11: Removing Passenger-Side Air Bag Door

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

SELF-DIAGNOSTIC

AIR BAG WARNING LIGHT CHECK

Turn ignition switch to ACC or ON position. If air bag warning light comes on then goes out after about 6 seconds, the system is okay at this time. If air bag warning light comes on and stays on (or flashes), diagnostic code is stored in the air bag sensor. Go to **RETRIEVING CODES** . If air bag warning light responds in any other way, go to **DIAGNOSIS** .

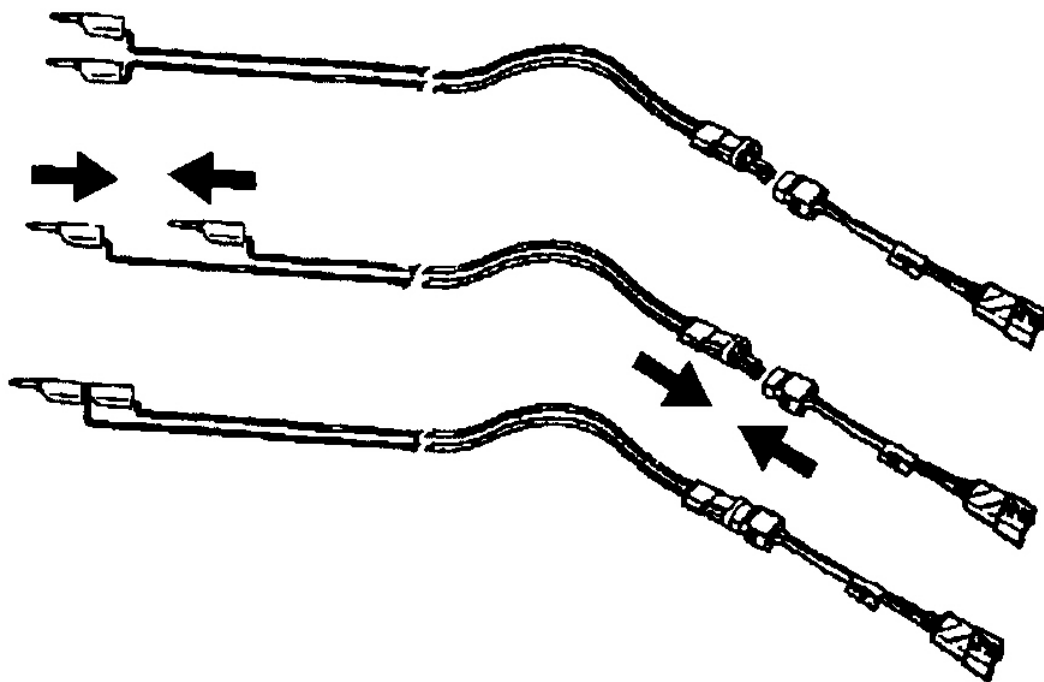
RETRIEVING CODES

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

1. Turn ignition switch to ACC or ON position. Wait about 20 seconds. Using Diagnosis Check Wire (09843-18020), jump terminals Tc and E1 of Data Link Connector (DLC), located under left side of instrument panel, next to junction block. See **Fig. 12** .

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96G05326

Fig. 12: Identifying Data Link Connector (DLC) Terminals
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. If air bag warning light does not flash codes, go to **CODE(S) NOT DISPLAYED** under DIAGNOSIS. If air bag warning light flashes continuously at a rate of 2 times per second, source voltage is low. Go to **NO CODES - SOURCE VOLTAGE DROP** under appropriate TESTING - DIAGNOSTIC.
3. If air bag warning light flashes codes, count number of flashes to determine code(s) that are set. For example, Code 12 is: FLASH, pause, FLASH, FLASH. If more than one code is present, a 2.5-second pause will occur between each code. Lowest numbered codes will be displayed followed by higher numbered codes. See **SRS CODES** .
4. After all codes are displayed, a 4-second pause will occur and codes will be repeated. After code(s) have been identified, see appropriate CODE under **TESTING - DIAGNOSTIC** and perform tests as specified. After repairing system, clear codes. See **CLEARING CODES** .

NOTE: If a code that is not listed in SRS CODES table is displayed, replace air bag sensor. If air bag warning light does not function as described, go to **CODE(S) NOT DISPLAYED** or see **CODE(S) CONTINUOUSLY DISPLAYED** .

SRS CODES

Code	Possible Cause
Light Is Off	System Okay

11	Short To Ground In Squib Circuit
12	Short To Battery In Squib Circuit
14	Open In D Squib Circuit
31	Air Bag Sensor Assembly Malfunction
54	Open In P Squib Circuit

CLEARING CODES

- 1. At DLC, connect a jumper wire to terminal Tc, and another jumper wire to terminal AB. See **Fig. 12** . Turn ignition switch to ACC or ON position. Wait about 6 seconds.
- 2. Starting with terminal Tc, apply body ground alternately to terminal Tc and terminal AB twice each, in cycles of 1/2 to 1 1/2 seconds. Finally, keep applying body ground to terminal Tc until air bag warning light flashes quickly, indicating codes are cleared.

NOTE: When alternately connecting jumper probes to terminals, simultaneously release one probe from one terminal while connecting other probe to other terminal. If time interval between probings is too long, codes will not clear.

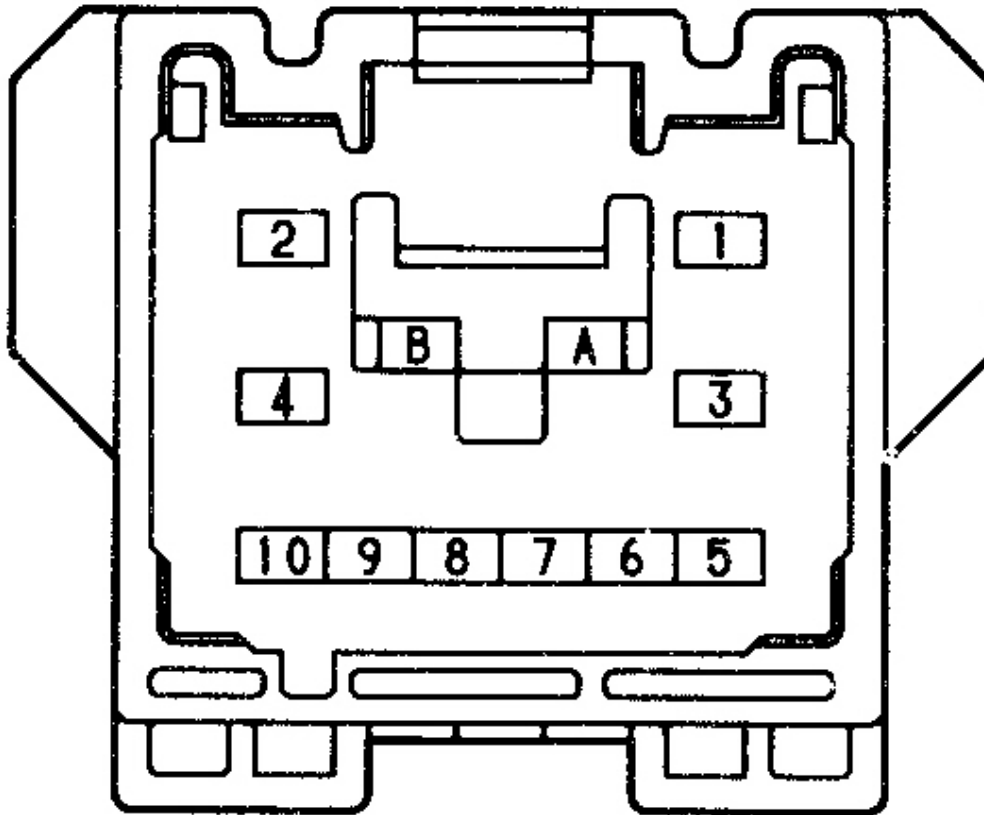
DIAGNOSIS

WARNING: Failure to follow air bag service precautions may result in air bag deployment and personal injury. See **SERVICE PRECAUTIONS** . After component replacement, perform system operational check to ensure proper 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, center air bag sensor may be damaged.

AIR BAG WARNING LIGHT DOES NOT COME ON AT ALL

NOTE: For air bag sensor connector terminal identification, see **Fig. 13** .



96G05374

Fig. 13: Identifying Air Bag Sensor Connector Terminals

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

1. Remove SRS fuse. Check fuse for continuity. If fuse is okay go to next step. If fuse is not okay, replace fuse and go to step 5).
2. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag harness connector. See **Fig. 2**.
3. Connect negative battery cable. Turn ignition to ACC or ON. Measure voltage from ground to terminal LA of harness side connector of air bag sensor assembly. If battery voltage is present, go to next step. If battery voltage is not present, check warning light bulb or repair SRS warning light circuit.
4. Disconnect negative battery cable. Reconnect air bag sensor connector. Reconnect negative battery cable. Wait 2 seconds. Turn ignition switch to ACC or ON position. Check operation of SRS warning light. If

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light is okay, the malfunction is now corrected. If light is not okay, check terminal LA of air bag sensor assembly. If terminal is okay, replace air bag sensor assembly.

5. If new fuse burns out again, check harness between SRS fuse and SRS warning light. If fuse is not burned out check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** under DIAGNOSIS.

AIR BAG WARNING LIGHT STAYS ON WITH IGNITION OFF

Disable SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect air bag sensor connector (s). Reconnect negative battery cable. If air bag warning light is off, replace air bag sensor. If air bag warning light is still on, repair warning light circuit or AB circuit leading to DLC. See **Fig. 12** .

AIR BAG WARNING LIGHT INTERMITTENT

If air bag warning light comes on intermittently, perform the following tests to simulate driving conditions:

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

If problem cannot be found, replace all components including wiring harness.

CODE(S) NOT DISPLAYED

NOTE: Use the following procedure if code(s) are not displayed or air bag warning light stays on when jumper wire is connected between terminals Tc and E1 of DLC connector.

1. Turn ignition switch from LOCK to ACC or ON position. If air bag warning light does not come on, repair air bag warning light circuit. If air bag warning light comes on, go to next step.
2. Turn ignition to ACC or ON. Measure voltage between terminals Tc and E1 of DLC. See **Fig. 12** . If battery voltage is present, go to step 4). If battery voltage is not present go to next step.
3. Measure voltage between body ground and terminal Tc of DLC. If battery voltage is present, repair harness between body ground and terminal E1 of DLC. If battery voltage is not present, go to next step.
4. Turn ignition to LOCK. Disconnect negative battery cable. wait at least 90 seconds. Disconnect air bag sensor assembly connector. Connect a jumper wire between body ground and terminal Tc from back side. See **Fig. 13** . If air bag warning light does not come on, replace air bag sensor. If air bag warning light comes on, check wiring harness between air bag sensor and DLC.

CODE(S) CONTINUOUSLY DISPLAYED

NOTE: Use the following procedure if code(s) are displayed without connecting jumper wire between terminals Tc and E1 of DLC connector.

Disable SRS. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect air bag sensor connector

(s). Measure resistance between body ground and terminal 7 (Tc) of the air bag sensor connector. See **Fig. 13**. If resistance is 1000 ohms or more, replace air bag sensor. If resistance is not infinite ohms, replace harness.

CONNECTOR IDENTIFICATION

NOTE: To identify connector terminals, See **Fig. 14**.

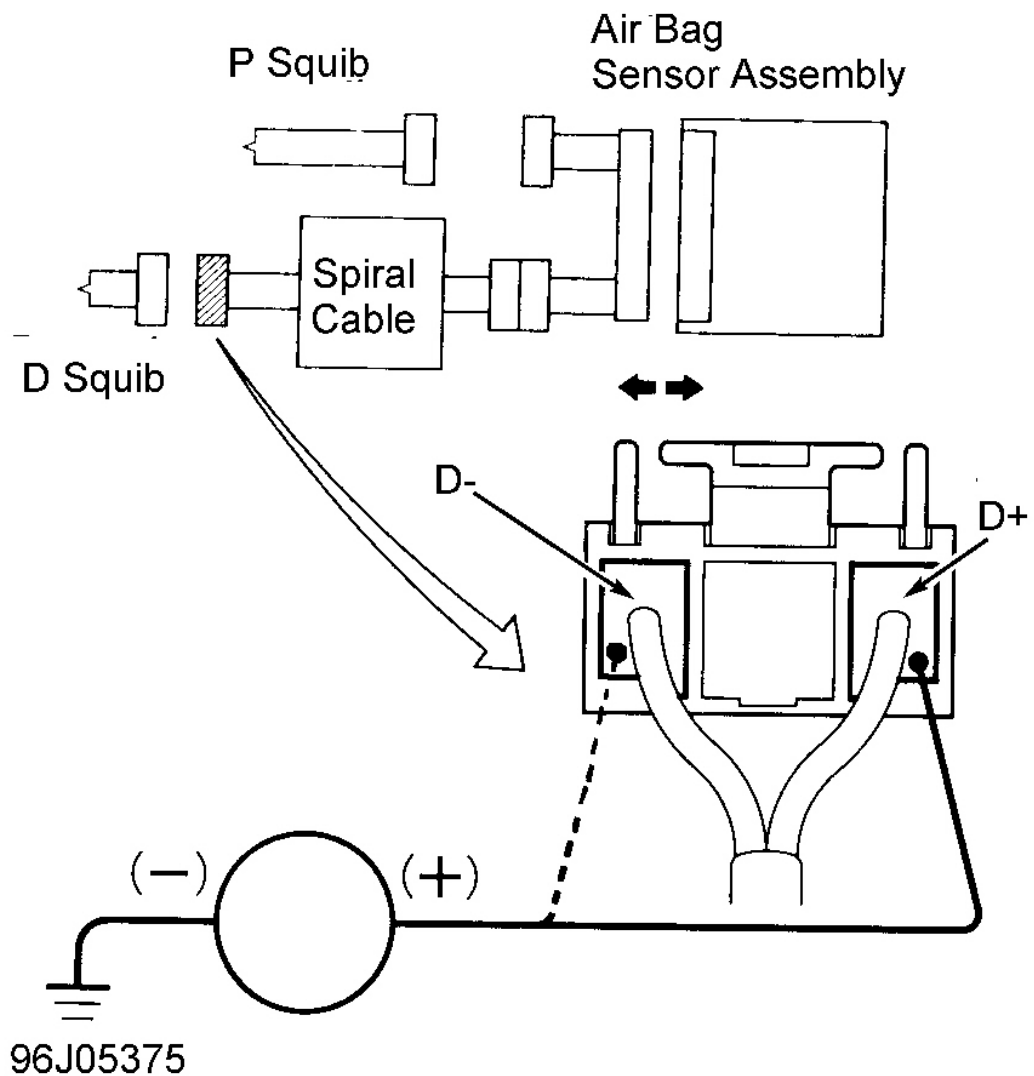
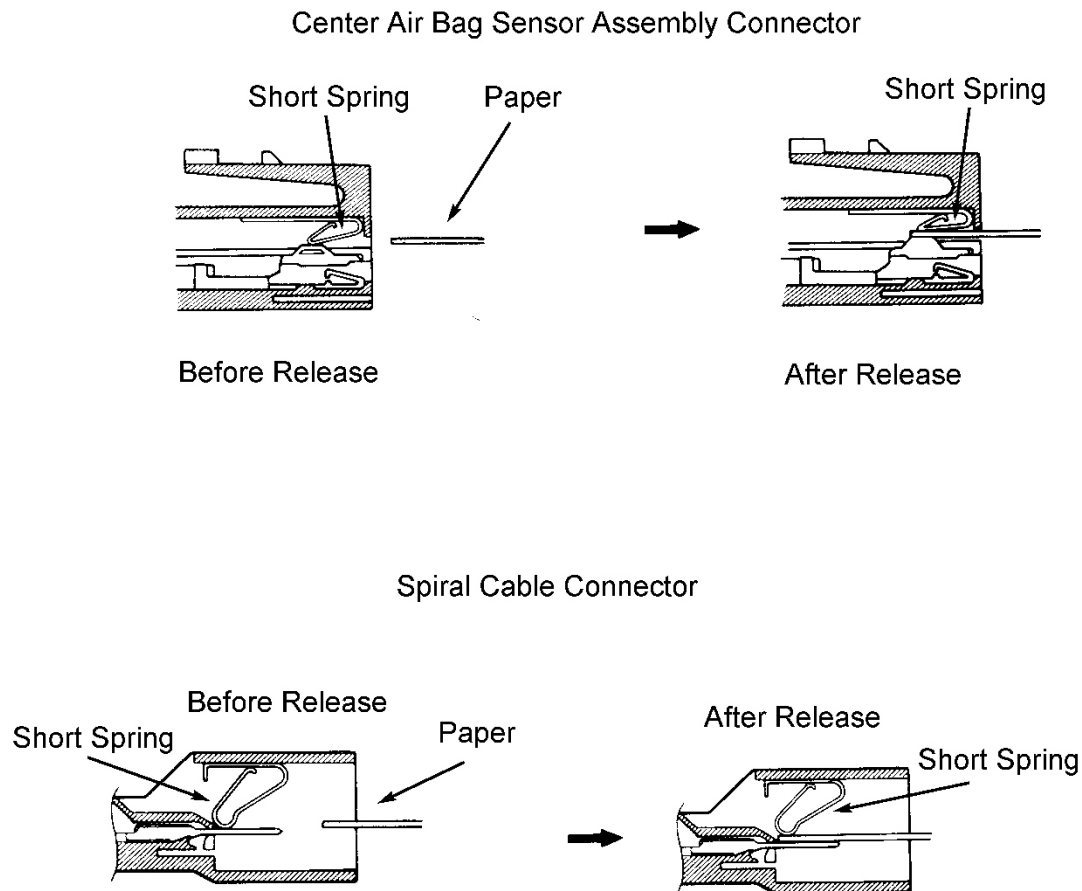


Fig. 14: Identifying Spiral Cable (Upper) To Passenger-Side Air Bag Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

RELEASING SHORTING BAR SPRING (ACTIVATION PREVENTION)

NOTE: In the following procedure, "squib circuit connector" refers to any SRS connector that has a shorting bar on it. Perform this procedure only if you were sent here from TROUBLE SHOOTING.

1. If voltage is accidentally applied across the air bag squib circuit (as when testing, for example), the air bag may deploy. To prevent this, a spring-loaded shorting bar automatically connects both wires of the squib circuit when the squib circuit connector is disconnected.
2. Some testing procedures require the shorting bar to be in the released position with the connector disconnected. To hold shorting bar in the released position, obtain a piece of paper that is the same thickness as the male terminal blade that slides under the shorting bar spring when the connector is connected. See **Fig. 15**.



96E05330

Fig. 15: Releasing Shorting Bar Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

WARNING: Paper must not be thicker than male terminal. If paper is thicker, connector terminal may be damaged, possible resulting in system fault.

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

TESTING - DIAGNOSTIC

NOTE: Use Diagnosis Check Wiring (09843-18020) when connecting jumper wire between terminals of DLC. Spiral cable upper connector is same as steering wheel pad (squib) connector. Spiral cable lower connector (located under steering column) connects the harness between spiral cable and center air bag sensor.

NO CODES - SOURCE VOLTAGE DROP

1. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag harness connector, accessible through finish plate in glove box. See **Fig. 2**. Disconnect air bag sensor assembly connector.
2. Reconnect negative battery cable. Turn ignition switch to ON position. Measure voltage between ground and terminals IG2 and ACC of air bag sensor connector. See **Fig. 13**. Operate electrical components (defogger, wiper, headlights, heater blower, etc.). If voltage is 8-14 volts, go to next step. If voltage is not 8-14 volts, check harness between battery and air bag sensor assembly and check battery and charging system.
3. Turn ignition switch to LOCK position. Connect steering wheel pad connector. Connect passenger-side air bag connector. Turn ignition switch to ON position. Operate electrical components as in step 2) and check that SRS warning light goes off. If light does not go off, check diagnostic trouble code and go to appropriate CODE under TESTING - DIAGNOSTIC. If a normal code is output, replace air bag sensor assembly. If warning light goes off, no problem detected at this time.

CODE 11

NOTE: During testing, if codes other than Code 11 are displayed, disregard them.

1. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag harness connector, accessible through finish plate in glove box. See **Fig. 2**. Disconnect air bag sensor assembly connector.
2. Measure resistance on spiral cable side of connector between spiral cable and steering wheel pad between D+, D- and ground. If resistance is 1000 ohms or more, go to next step. If resistance is less than 1000 ohms, go to step 7).
3. Measure resistance on air bag sensor assembly side of connector between air bag sensor and passenger-

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side air bag assembly between P+, P- and ground. If resistance is 1000 ohms or more, go to next step. If resistance is less than 1000 ohms, replace harness or connector between air bag sensor assembly and passenger-side air bag assembly.

4. Connect connector to air bag sensor assembly. Use a jumper wire to connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad. Use a jumper to connect P+ and P- on air bag sensor assembly side of connector between air bag sensor assembly and passenger-side air bag assembly. Connect negative battery cable and wait 2 seconds. Turn ignition switch to ACC or ON position and wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait 20 seconds. Turn ignition switch to ACC or ON position and wait at least 20 seconds. Using Diagnosis Wire (09843-18020), connect terminals Tc and E1 of DLC1. If DTC 11 is output, go to next step. If DTC 11 is not output, Replace air bag sensor assembly.
5. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait 90 seconds. Connect steering wheel pad connector. Connect negative battery cable. Wait 2 seconds. Turn ignition switch to ACC or ON position. Wait 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Use Diagnosis Wire (09843-18020), connect terminals Tc and E1 of DLC1. If DTC 11 is output, replace steering wheel pad. If DTC 11 is output, go to next step.
6. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Connect passenger-side air bag assembly connector. Connect negative battery cable. Wait at least 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Use Diagnosis Wire (09843-18020) to connect terminals Tc and E1 of DLC1. If DTC 11 is output, replace passenger-side air bag assembly. If DTC 11 is not output, go to next step.
7. Disconnect connector between air bag sensor assembly and spiral cable. Measure resistance between D+ on spiral cable side of connector between spiral cable and steering wheel pad and body ground. If resistance is 1000 ohms or more, replace harness or connector between air bag sensor assembly and spiral cable. If resistance is less than 1000 ohms, replace spiral cable.

CODE 12

NOTE: During testing, if codes other than Code 12 are displayed, disregard them.

1. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag connector, accessible through finish plate inside glove box. See **Fig. 2** . Disconnect air bag sensor assembly connector
2. Check voltage between ground, D+ and D- of connector (spiral cable side) between spiral cable and steering wheel pad. If voltage is zero volts, go to next step. If voltage is not zero volts, go to step 7).
3. Check voltage between P+, P- and ground of connector (air bag sensor assembly side) between air bag sensor assembly and passenger-side air bag assembly. If voltage is zero volts, go to next step. If voltage is not zero volts, replace harness or connector between air bag sensor assembly and passenger-side air bag assembly.
4. Connect connector to air bag sensor assembly. Use jumper wire to connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad. Use a jumper wire to connect P+ and P- on air

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bag sensor assembly side of connector between airbag sensor assembly and passenger-side air bag assembly. Connect negative battery cable. Wait 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Using Diagnosis Wire (09843-18020) connect terminals Tc and E1 of DLC1. If DTC 12 is output, replace air bag sensor assembly. If DTC 12 is output, go to next step.

5. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait 90 seconds. Connect steering wheel pad connector. Connect negative battery cable. Wait 2 seconds. Turn ignition to ACC or On. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition to ACC or On. Wait at least 20 seconds. Using Diagnosis Wire (09843-18020) connect terminals Tc and E1 of DLC1. If DTC 12 is output, replace passenger-side air bag. If DTC 12 is not output, go to next step.
6. Turn ignition switch to LOCK position. Disconnect connector between air bag sensor assembly and spiral cable. Turn ignition ON. Measure voltage between D+ terminal on spiral cable side of connector between spiral cable and steering wheel pad. If voltage is zero volts, replace harness or connector between air bag sensor assembly and spiral cable. If voltage is not zero volts, replace spiral cable.

CODE 14

NOTE: During testing, if codes other than Code 14 are displayed, disregard them.

1. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag connector, accessible through finish plate inside glove box. See **Fig. 2** . Disconnect air bag sensor assembly connector.
2. Use a jumper wire to connect D+ and D- on air bag sensor assembly connector. Measure resistance between D+ and D-. If resistance is less than one ohm, go to next step. If resistance is more than one ohm, go to step 5).
3. Connect connector to air bag sensor assembly. Using a jumper wire, connect D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad. Connect negative battery cable. Wait 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Using Diagnosis Wire (09843-18020), connect terminals Tc and E1 of DLC1. If DTC 14 is output, replace air bag sensor assembly. If DTC 14 is not output, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Connect steering wheel pad (squib) connector. Connect negative battery cable. Wait 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Using Diagnosis Wire (09843-18020), connect terminals Tc and E1 of DLC1. If DTC 14 is output, replace steering wheel pad. If DTC 14 is not output, no problem is detected at this time..
5. Disconnect connector between air bag sensor assembly and spiral cable. Measure resistance between terminals D+ and D- on spiral cable side of connector between spiral cable and steering wheel pad. If resistance is less than one ohm, go to next step. If resistance is more than one ohm, replace spiral cable.
6. Use a jumper wire to connect D+ and D- on air bag sensor assembly connector. Measure resistance between D+ and D- on air bag side of connector between air bag sensor assembly and spiral cable. If

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resistance is less than one ohm, no problem detected at this time. If resistance is more than one ohm, replace harness or connector between air bag sensor and spiral cable.

CODE 31

NOTE: During testing, if codes other than Code 14 are displayed, disregard them.

1. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag connector, accessible through finish plate inside glove box. See **Fig. 2** . Disconnect air bag sensor assembly connector.
2. Turn ignition switch to ON position. Measure voltage between terminals IG2 and ACC of air bag sensor assembly and ground. If voltage is less than 16 Volts, go to next step. If voltage is more than 16 volts, check battery and charging system.
3. Clear malfunction code. 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 these steps at least 5 times. Using Diagnosis Wire (09843-18020), connect terminals Tc and E1 of DLC1. Check DTC. If CODE 31 is output, replace air bag sensor assembly. If CODE 31 is not output, check for intermittent fault. See **AIR BAG WARNING LIGHT INTERMITTENT** under DIAGNOSIS.

CODE 54

NOTE: During testing, if codes other than Code 54 are displayed, disregard them.

1. Disconnect negative battery cable. Wait at least 90 seconds. Remove steering wheel pad. See **STEERING WHEEL PAD & SPIRAL CABLE** under REMOVAL & INSTALLATION. Disconnect passenger-side air bag connector, accessible through finish plate inside glove box. See **Fig. 2** . Disconnect air bag sensor assembly connector.
2. Using a jumper wire, connect P+ and P- of air bag sensor connector. Measure resistance between terminals of passenger-side air bag connector. If resistance is less than one ohm, go to next step. If resistance is more than one ohm, replace harness or connector between air bag sensor assembly and passenger-side air bag assembly.
3. Connect connector to center air bag sensor assembly. Using a jumper wire, connect P+ and P- terminals (on center air bag sensor assembly side of connector between center air bag sensor assembly) and passenger-side air bag assembly. Connect negative battery cable and wait 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait for at least 20 seconds. Using Diagnosis Wire (09843-18020), check for DTC 54. If DTC 54 is output, replace air bag sensor assembly. If DTC 54 is not output, go to next step.
4. Turn ignition switch to LOCK position. Disconnect negative battery cable. Wait at least 90 seconds. Connect passenger-side air bag assembly connector. Connect negative battery cable. Wait 2 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Clear malfunction codes. Turn ignition switch to LOCK position. Wait at least 20 seconds. Turn ignition switch to ACC or ON position. Wait at least 20 seconds. Using Diagnosis Wire (09843-18020), check for DTC 54. If DTC 54 is output, replace passenger-side air bag assembly. If DTC 54 is not output, the malfunction is now normal.

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AIR BAG SENSOR CONNECTOR TERMINAL IDENTIFICATION

Terminal	Circuit
"A" (L1)	Shorting Bar
"B" (L2)	Shorting Bar
1 (P-)	Squib "-" Passenger-Side
2 (P+)	Squib "+" Passenger-Side
3 (D+)	Squib "+" Driver-Side
4 (D-)	Squib "-" Driver-Side
5 (E1)	Ground
6 (E2)	Ground
7 (Tc)	Diagnosis
8 (LA)	Air Bag Warning Light
9 (IG2)	Power Source (IGN Fuse)
10 (ACC)	Power Source (CIG Fuse)

POST-COLLISION AIR BAG SAFETY INSPECTION

POST-COLLISION AIR BAG SAFETY INSPECTION

Action	Components
Replace After Deployment	Air Bag Module(s), Air Bag Sensor Assembly
Inspect & If Damaged, Replace Component (Even If Air Bag Did Not Deploy)	Glove Compartment Door, Instrument Panel, Instrument Panel Reinforcement, Spiral Cable Steering Wheel, Wiring Harness & Connectors
Comments	If any components are damaged or bent, they must be replaced.

WIRE REPAIR

WARNING: No part of the SRS system or harnesses can be repaired. If wiring harness is damaged, replace complete wiring harness assembly.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Air Bag Sensor Screw	15 (21)
Instrument Panel Reinforcement	14 (19)
Passenger-Side Air Bag Bolt	15 (21)
Steering Wheel Nut	26 (35)
	INCH Lbs. (N.m)
Steering Wheel Pad Torx Screw	80 (9)

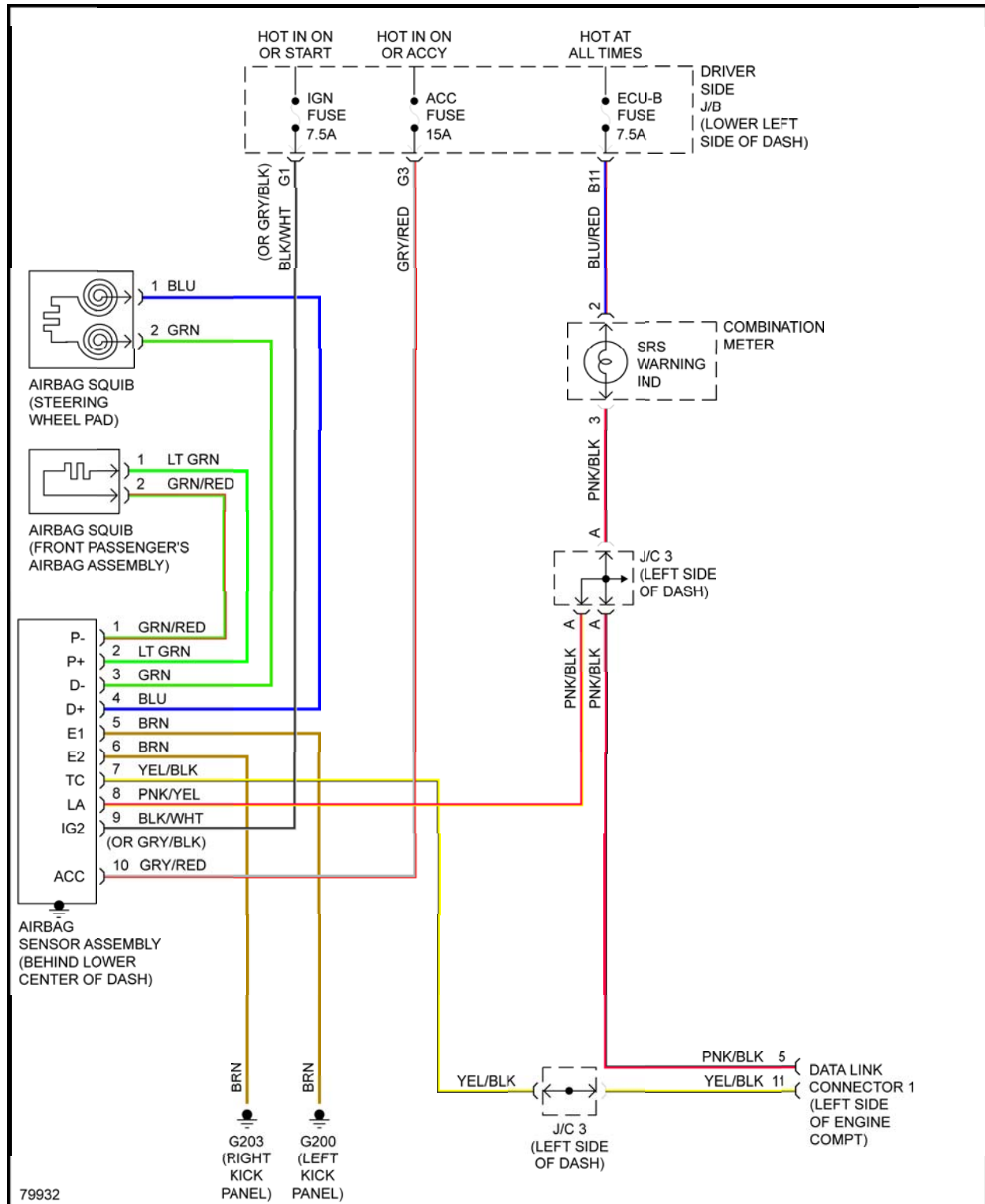
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WIRING DIAGRAMS

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Fig. 16: SRS Wiring Diagram (4-Runner)