

AIR BAG RESTRAINT SYSTEM

1994 ACCESSORIES/SAFETY EQUIPMENT Mazda Air Bags

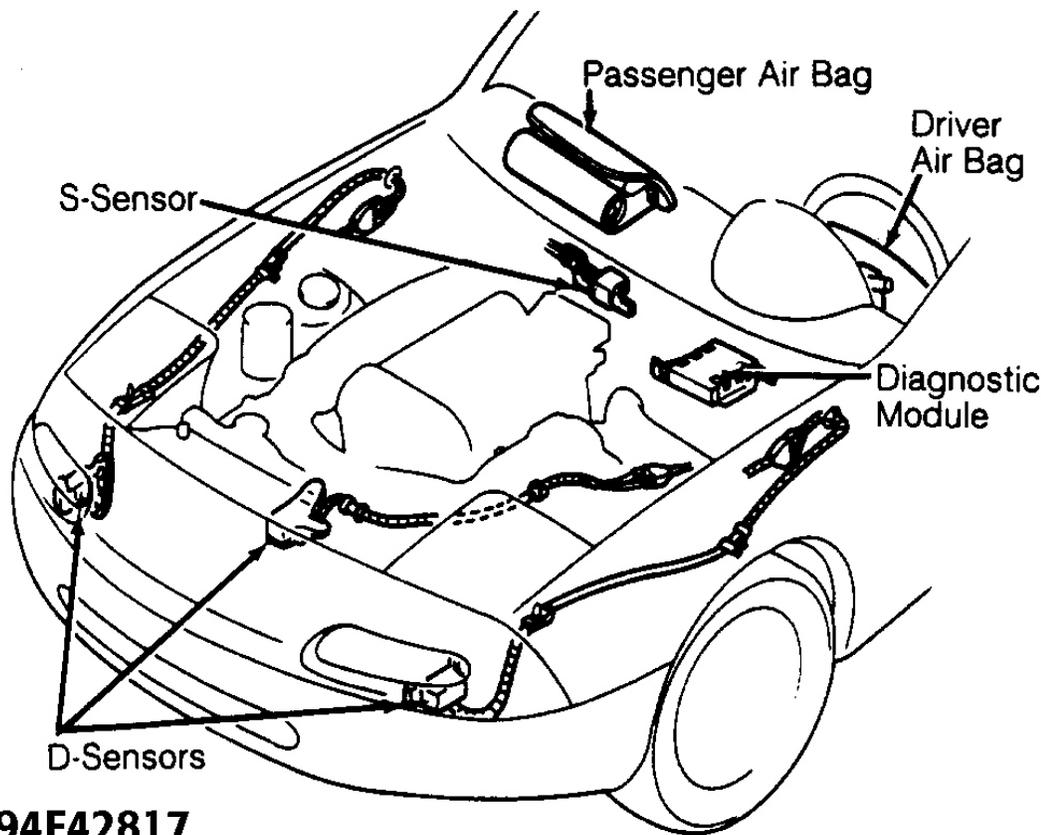
DESCRIPTION & OPERATION

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

The Supplemental Restraint System (SRS), when used in conjunction with seat belt, provides increased protection for driver and passenger in a collision. The air bag restraint system consists of AIR BAG warning light, driver's air bag module, passenger's air bag module, clockspring, diagnostic module, back-up battery (located inside diagnostic module), 4 crash sensors and wiring harness. One crash sensor (S-sensor) is located above heater unit in passenger compartment. Three other crash sensors (D-sensor) are located left front, right front, and center front of vehicle. See **Fig. 1**.

The air bag is designed to deploy when S-sensor (rear) and at least one D-sensor (front) close in a collision when ignition is on. The back-up battery supplies current for the ignitor if the vehicle battery or fuses fail during a collision.

The diagnostic module monitors the air bag system for failures. If diagnostic module detects a short between air bag module and ground or a malfunction with S-sensor or any D-sensor, diagnostic module will melt system fuse to prevent unintended air bag deployment. If a failure occurs, the diagnostic module turns on the AIR BAG warning light. If AIR BAG warning light is burned out, diagnostic module will sound a buzzer to alert driver of a system malfunction.



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Fig. 1: Identifying Air Bag System Components
 Courtesy of MAZDA MOTORS CORP.

SERVICE PRECAUTIONS

Following precautions should be observed when working with air bag systems:

- Disable SRS before servicing any SRS 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** .
- After an accident, all SRS components, including harness and brackets, must be inspected. If any components are damaged or bent, they must be replaced, even if a deployment did not occur. Check steering column, knee bolster, instrument panel steering column reinforcement plate and lower brace for damage. DO NOT service any component or wiring. If components or wiring are damaged or defective, replacement is necessary. DO NOT use components from another vehicle. Only use new replacement parts.
- After repairs, turn ignition on while ensuring any accidental air bag deployment will not cause injury. Ensure SRS indicator light is working properly and no system faults are indicated. See **TESTING -**

SYSTEM OPERATION CHECK .

- Always wear safety glasses when servicing or handling an air bag.
- Air bag module must be stored in its original special container until used for service. It must be stored in a clean, dry place, away from sources of extreme heat, sparks and high electrical energy.
- When placing a live air bag module on a bench or other surface, always face air bag and trim cover up, 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 can irritate skin. Always wear safety glasses, rubber gloves and long-sleeved shirt during clean-up, and wash hands using mild soap and water. Follow correct disposal procedures. See **DISPOSAL PROCEDURES** .
- NEVER allow any electrical source near inflator on back of air bag module.
- If the ignition is on, DO NOT bump the SRS unit. This could cause the air bags to deploy.
- When carrying a live air bag module, trim cover should be pointed away from your body to minimize injury in case of deployment.
- DO NOT probe a wire through insulator; this will damage wire and eventually cause failure due to corrosion.
- When performing electrical tests, always use specified digital multimeter and SRS test harnesses recommended by manufacturer. See SPECIAL TOOLS. DO NOT directly probe the component connector pins or wires.
- When installing SRS wiring harnesses, ensure they will not be pinched or interfere with other vehicle components.
- Inspect all ground connections. Ensure they are clean and tight.
- DO not use any type of electrical equipment not specified by manufacturer. See SPECIAL TOOLS.
- If SRS is not fully functional for any reason, vehicle should not be driven until system is repaired. DO NOT remove any component or in any way disable system from operating normally. If SRS is not functional, park vehicle until repairs can be made.

DISABLING & ACTIVATING AIR BAG SYSTEM

WARNING: After disabling air bag system, wait at least 10 minutes before servicing. Air bag system voltage is maintained for about 10 minutes after system is disabled. Failure to wait at least 10 minutes may cause accidental air bag deployment and possible personal injury.

PROCEDURES**Disabling System**

Cancel radio anti-theft function. See **CANCELING & ACTIVATING RADIO ANTI-THEFT** under DISABLING & ACTIVATING AIR BAG SYSTEM. Disconnect and shield negative battery cable. Wait at least 10 minutes for back-up power supply to be depleted. Remove cover panel below left side of instrument panel. Disconnect Orange and Blue clockspring connectors for driver air bag. See **Fig. 2** . Remove glove compartment. Disconnect Orange and Blue passenger air bag module connectors. See **Fig. 3** .

Activating System

Ensure negative battery cable is disconnected. Connect Orange and Blue passenger air bag module connectors. See **Fig. 3** . Install glove compartment. Connect driver air bag Orange and Blue clockspring connectors. See **Fig. 2** . Install lower cover panel. Connect negative battery cable. See **TESTING - SYSTEM OPERATION CHECK** . Activate radio anti-theft function. See **CANCELING & ACTIVATING RADIO ANTI-THEFT** under **DISABLING & ACTIVATING AIR BAG SYSTEM**.

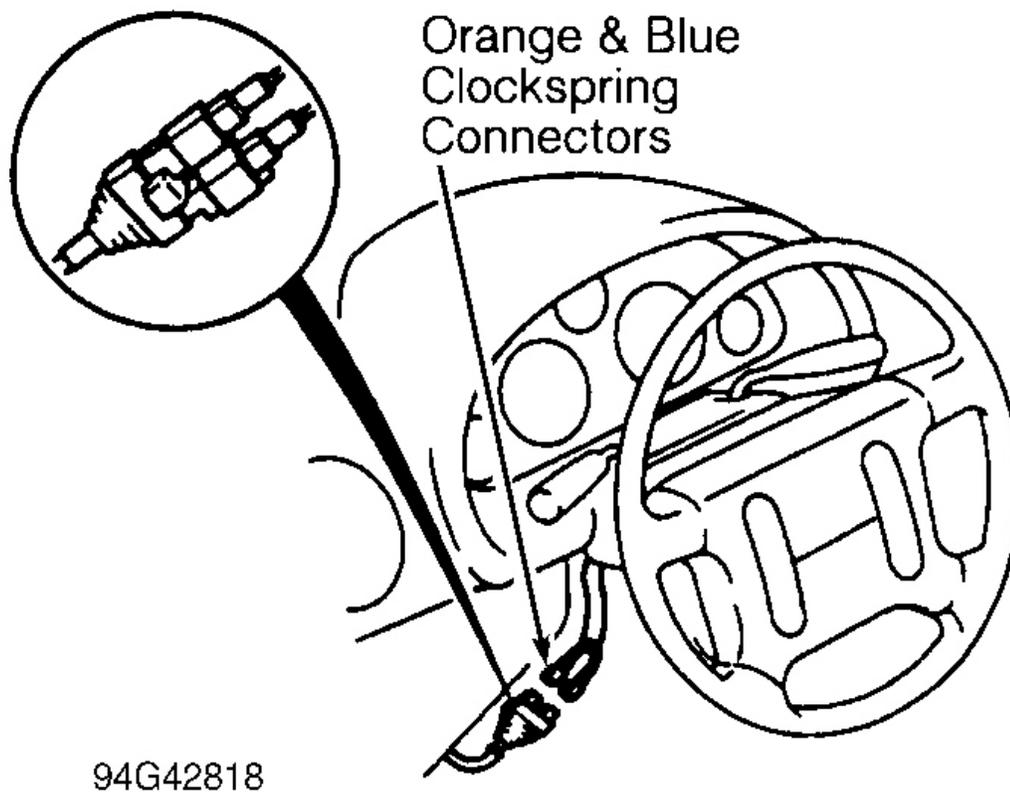


Fig. 2: Locating Driver Air Bag Clockspring Connectors
Courtesy of MAZDA MOTORS CORP.

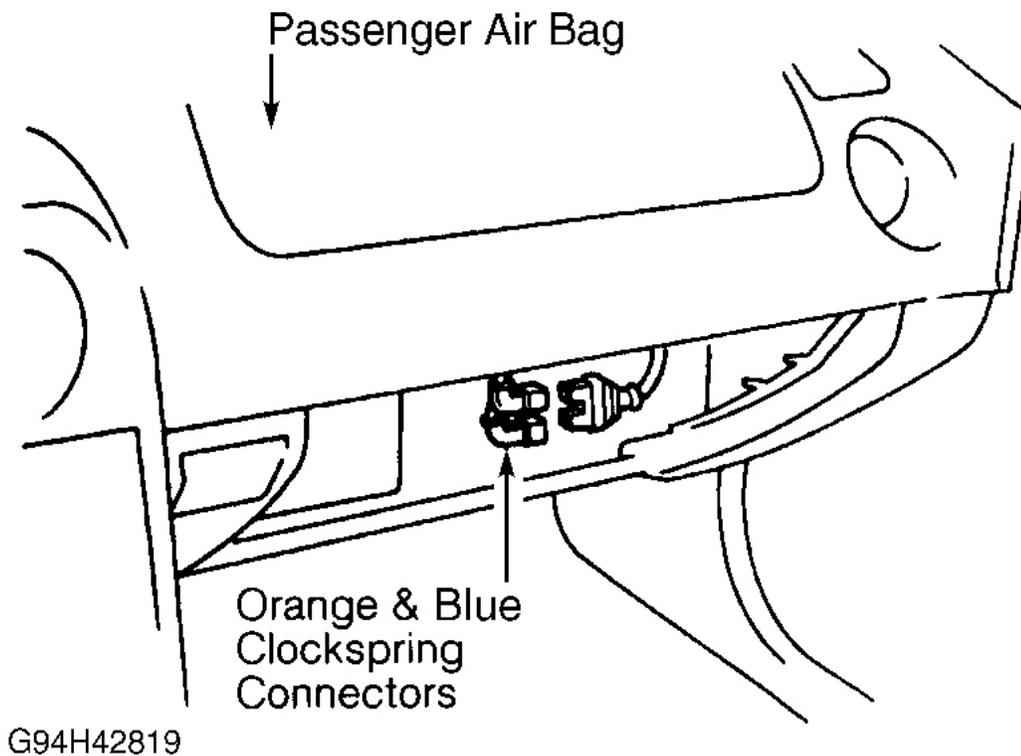


Fig. 3: Locating Passenger Air Bag Clockspring Connectors
Courtesy of MAZDA MOTORS CORP.

CANCELING & ACTIVATING RADIO ANTI-THEFT

Canceling

1. Obtain radio anti-theft code from vehicle owner. Turn ignition on. Push REW and FF until radio displays bars. Use channel preset buttons 1-4 to enter current code number.
2. Use preset button 1 to enter first digit of code, preset button 2 to enter second digit of code, etc. After entering all 4 digits of code, press and hold REW and FF for approximately 2 seconds until a beep is heard.
3. Radio will display CODE for approximately 5 seconds, then disappear to indicate radio is operative with anti-theft function by-passed. If radio displays ERR, repeat procedure.

NOTE: If 3 consecutive errors are made during activation of radio anti-theft, radio will become completely inoperable. If this happens, contact Panasonic.

Activating

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1. Turn ignition on. Press REW and FF until radio displays bars. While radio is displaying bars, use channel preset buttons 1-4 to enter code number.
2. Use preset button 1 to enter first digit of code, preset button 2 to enter second digit of code, etc. After entering all 4 digits of code, press and hold REW and FF for approximately 2 seconds until a beep is heard.
3. Radio will display COD with a backwards 9. This display will flash for 5 seconds, then disappear to indicate radio is operational with anti-theft activated. If radio displays ERR, repeat procedure.

POST-COLLISION INSPECTION

If air bags deployed, replace air bag modules and clockspring. Whether air bags deployed or not, inspect the following components and replace them if damaged: diagnostic module, impact sensors, instrument panel, steering column, and steering wheel. **DO NOT** attempt to repair any component or wiring harness. After replacing components as necessary, perform **TESTING - SYSTEM OPERATION CHECK** .

ADJUSTMENTS

CLOCKSPRING CENTERING

Set front wheels in straight-ahead position. Turn clockspring clockwise until it stops (**DO NOT** force). Return clockspring 2 3/4 turns counterclockwise until mark on clockspring aligns with steering column cover mark.

DISPOSAL PROCEDURES

DEPLOYED AIR BAG

Wrap deployed air bag module in a plastic bag and dispose of as you would any other part. Wear gloves and safety glasses when handling air bag module.

SCRAPPED VEHICLE

NOTE: When scrapping vehicles with an undeployed air bag(s), air bag(s) must be deployed inside vehicle.

Driver Air Bag

1. Before deploying air bag, inspect operating condition of Deployment Tool (49 H066 002). See **INSPECTING DEPLOYMENT TOOL** under DISPOSAL PROCEDURES. Ensure vehicle is outside and away from other vehicles and people. Open doors. Open convertible top (if equipped). Disconnect negative battery cable.
2. Ensure air bag module is firmly mounted to steering wheel. Remove cover panel below left side of instrument panel. Disconnect Orange and Blue clockspring connectors for driver air bag. See **Fig. 2** .
3. Connect deployment tool connector "A" to driver air bag clockspring connector. See **Fig. 4** . Connect Red deployment tool clip to battery positive terminal. Connect Black deployment tool clip to battery negative

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terminal. Verify deployment tool Red light is on.

4. Ensure all persons are at least 20 feet from vehicle. Press deployment tool activation switch to deploy air bag. Because of heat generated from air bag deployment, wait at least 15 minutes before handling deployed air bag module.

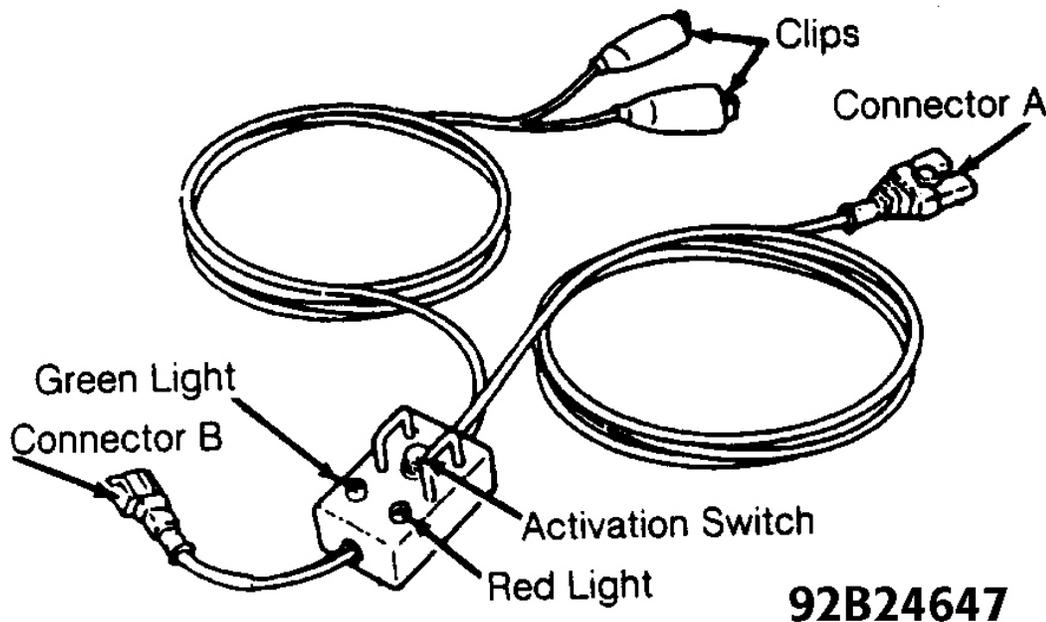
Passenger Air Bag

1. Before deploying air bag, inspect operating condition of Deployment Tool (49 H066 002). See **INSPECTING DEPLOYMENT TOOL** under DISPOSAL PROCEDURES. Ensure vehicle is outside and away from other vehicles and people. Open doors. Open convertible top (if equipped). Disconnect negative battery cable.
2. Remove glove compartment. Disconnect Orange and Blue passenger air bag module connectors. See **Fig. 3**. Connect deployment tool connector "A" to Orange and Blue passenger air bag connector. See **Fig. 4**. Connect Red deployment tool clip to battery positive terminal. Connect Black deployment tool clip to battery negative terminal. Verify deployment tool Red light is on.
3. Ensure all persons are at least 20 feet from vehicle. Press deployment tool activation switch to deploy air bag. Because of heat generated from air bag deployment, wait at least 15 minutes before handling deployed air bag module.

INSPECTING DEPLOYMENT TOOL

NOTE: Deployment tool should always be inspected for proper operation before deploying air bag.

1. Connect Red deployment tool clip to battery positive terminal. Connect Black deployment tool clip to battery negative terminal. Observe deployment tool lights. Green light should be on with Red light off.
2. Connect deployment tool connector "A" to connector "B". See **Fig. 4**. Green light should be off with Red light on. Press deployment tool activation switch. Green light should be on with Red light off.
3. If deployment tool lights function as described, it is safe to use deployment tool to activate air bag. If deployment tool lights do not function as described, DO NOT use deployment tool. Replace deployment tool with another unit and repeat procedure.



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Fig. 4: Identifying Air Bag Deployment Tool Connectors

Courtesy of MAZDA MOTORS CORP.

REMOVAL & INSTALLATION

WARNING: Follow air bag service precautions to prevent accidental air bag deployment and personal injury. See SERVICE PRECAUTIONS .

NOTE: After replacing components, check system to ensure proper operation. See TESTING - SYSTEM OPERATION CHECK .

DRIVER AIR BAG MODULE

Removal

Before proceeding, follow air bag service precautions. See SERVICE PRECAUTIONS . Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Remove 4 driver air bag module nuts. See Fig. 5 . Disconnect driver air bag module connector. Disconnect support rope. See Fig. 5 . Remove driver air bag module.

Installation

1. With driver air bag module removed from vehicle, connect Orange and Blue clockspring connectors

located below left side of instrument panel. Connect negative battery cable. Turn ignition on. Observe AIR BAG light. If code 32 is set, go to next step. If any code other than 32 is set, see **DIAGNOSIS** .

2. Turn ignition off. Disconnect negative battery cable. Disconnect Orange and Blue clockspring connectors located below left side of instrument panel. To install, reverse removal procedure.
3. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **TESTING - SYSTEM OPERATION CHECK** .

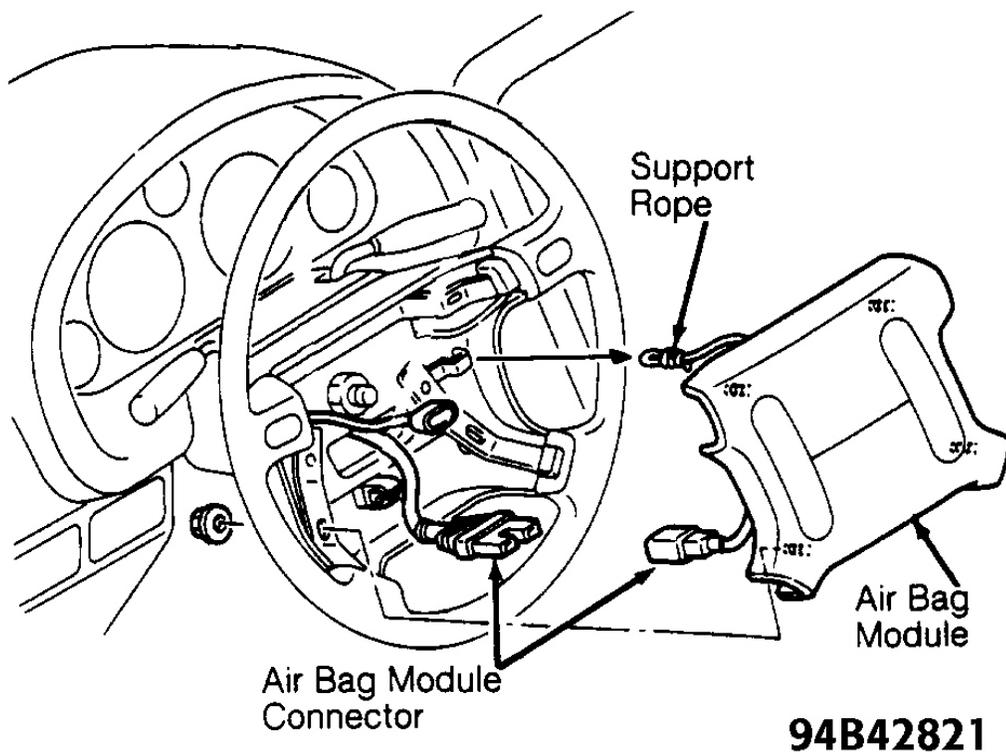


Fig. 5: Removing Driver Air Bag Module
Courtesy of MAZDA MOTORS CORP.

PASSENGER AIR BAG MODULE

Removal

Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Remove 4 passenger air bag module nuts. Disconnect support rope. See **Fig. 6** . Remove passenger air bag module.

Installation

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1. With passenger air bag module removed from vehicle, connect Orange and Blue passenger air bag module connectors. Connect negative battery cable. Turn ignition on. Observe AIR BAG light. If code 33 is set, go to next step. If any code other than 33 is set, see **DIAGNOSIS** .
2. Turn ignition off. Disconnect negative battery cable. Disconnect Orange and Blue passenger air bag module connectors. To install, reverse removal procedure.
3. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **TESTING - SYSTEM OPERATION CHECK** .

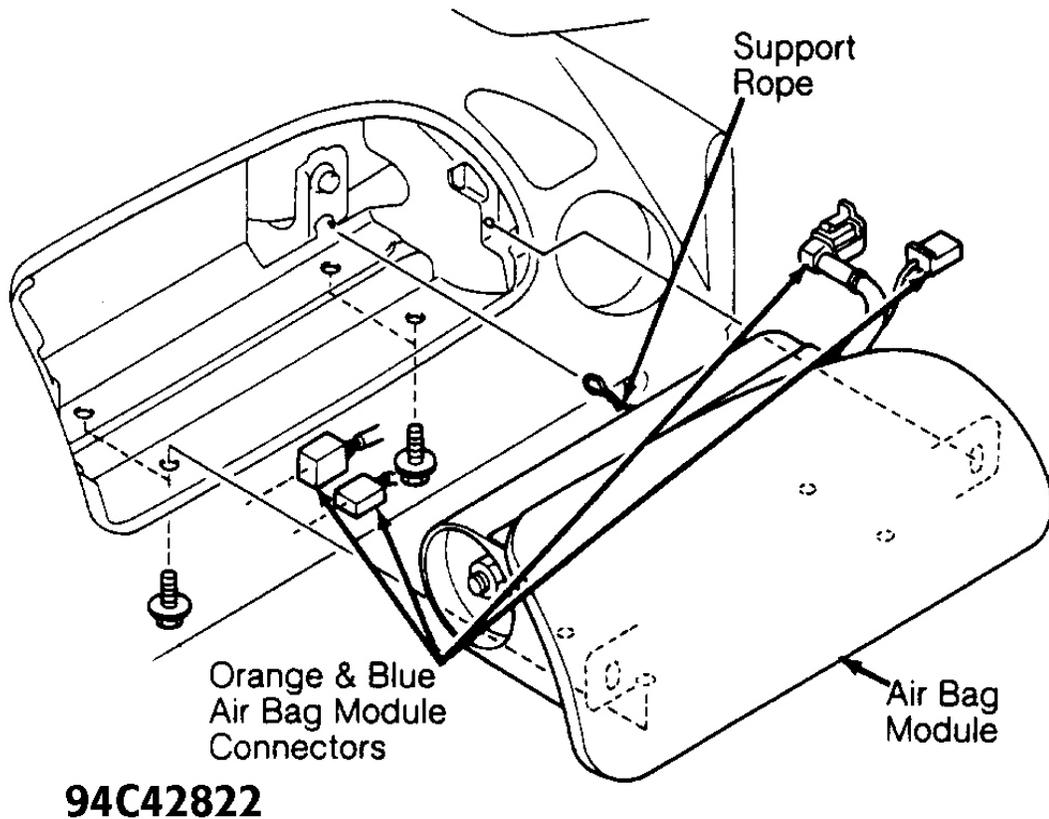


Fig. 6: Removing Passenger Air Bag Module
Courtesy of MAZDA MOTORS CORP.

CLOCKSPRING

NOTE: Clockspring is part of combination switch. When replacing clockspring, replace clockspring and combination switch as an assembly.

Removal

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1. Set front wheels in straight-ahead position. Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Remove driver air bag module. See **DRIVER AIR BAG MODULE** . Remove steering wheel nut. Using a puller, remove steering wheel. Remove steering column covers. Remove clockspring screws. Remove clockspring and combination switch as an assembly.

Installation

1. To install, reverse removal procedure. Before installing steering wheel, center clockspring. See **CLOCKSPRING CENTERING** under ADJUSTMENTS. Tighten steering wheel nut to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article.
2. After installation, activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **TESTING - SYSTEM OPERATION CHECK** .

CRASH SENSORS

WARNING: Crash sensor orientation and mounting is important for proper operation. All sensors must be positioned so arrow points forward. If sheet metal damage exists near sensor mounting point, inspect body structure at sensor mounting point for deformation. If structure is damaged, restore it to original shape.

Removal (Front D-Sensors)

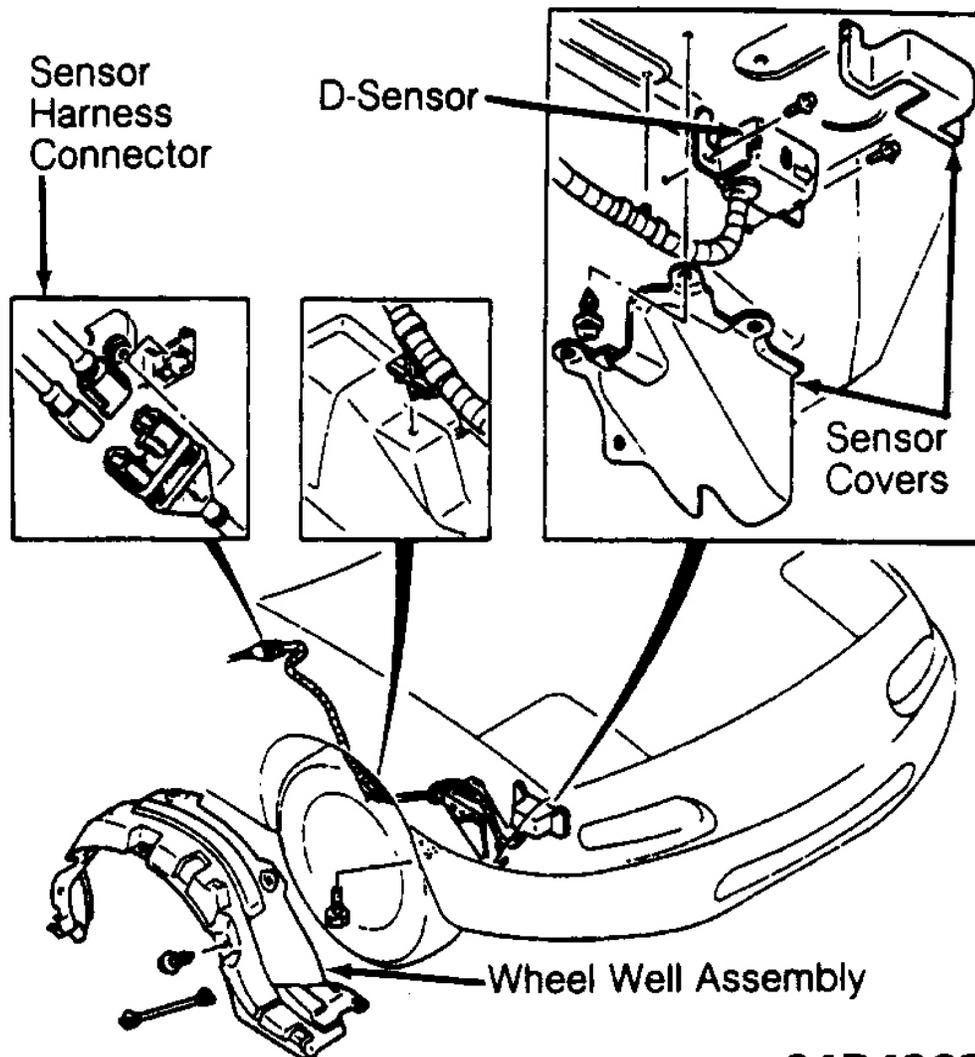
1. Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. To remove center sensor, go to step 4). To remove left or right sensor, raise and support front of vehicle. Remove wheel and tire assembly. Remove wheel well assembly to access sensor.
3. Remove 2 sensor covers. Unbolt sensor from vehicle. Disconnect sensor harness connector located in front of door jamb area. Remove sensor and harness from vehicle. See **Fig. 7** .
4. To remove center sensor, remove top cover located forward of radiator to access sensor. Remove sensor cover. Unbolt sensor from vehicle. Disconnect sensor harness connector located on top of left wheel well in engine compartment. Remove sensor and harness from vehicle.

Removal (Rear S-Sensor)

Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Disable the air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Rear S-sensor is located above heater unit in passenger compartment. See **Fig. 1** . Remove driver and passenger air bag modules. See **DRIVER AIR BAG MODULE** and **PASSENGER AIR BAG MODULE** . Remove dashboard assembly to access sensor. Unbolt sensor from vehicle. Disconnect electrical connectors. Remove sensor from vehicle.

Installation (D-Sensor & S-Sensor)

To install, reverse removal procedure. Position sensor with arrow toward front of vehicle. Install air bag modules (if necessary). Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check AIR BAG warning light to ensure system is functioning properly. See **TESTING - SYSTEM OPERATION CHECK**.



RIGHT SENSOR SHOWN; LEFT IS SIMILAR **94D42823**

Fig. 7: Removing Front (D-Sensor)
Courtesy of MAZDA MOTORS CORP.

DIAGNOSTIC MODULE

Removal & Installation

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1. Before proceeding, follow air bag service precautions. See **SERVICE PRECAUTIONS** . Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** .
2. Diagnostic module is located under left side of instrument panel. See **Fig. 1** . Disconnect diagnostic module connectors. Remove 2 diagnostic module mounting nuts. Remove diagnostic module.
3. To install, reverse removal procedure. After diagnostic module is installed, activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check AIR BAG warning light to ensure system is functioning properly. See **TESTING - SYSTEM OPERATION CHECK** .

TESTING - SYSTEM OPERATION CHECK

Turn ignition on. AIR BAG warning light in instrument cluster should glow for 4-8 seconds and then turn off. If AIR BAG warning light does not function as described, a failure has occurred in Supplemental Restraint System (SRS). Repair malfunctioning SRS. See **SERVICE PRECAUTIONS** . See **DIAGNOSIS** .

WIRE REPAIR

DO NOT repair air bag system wiring. If a problem is found with air bag system wiring, replace faulty wiring.

DIAGNOSIS

WARNING: Follow air bag service precautions to prevent accidental air bag deployment and personal injury. See **SERVICE PRECAUTIONS** .

SELF-DIAGNOSTIC SYSTEM

NOTE: If AIR BAG warning light does not come on and buzzer sounds when ignition is turned on, check and repair warning light circuit first.

Diagnostic module will only display one code at a time. Diagnostic module will always display highest code first. As an example, diagnostic module displays Code 23. After repairing Code 23, if any other codes are stored, diagnostic module will display next code. Next code displayed will be Code 22 or less. After repairing system, perform **TESTING - SYSTEM OPERATION CHECK** . If AIR BAG warning light is still flashing during **TESTING - SYSTEM OPERATION CHECK** , record code displayed. Repair system as necessary.

Retrieving & Clearing Codes

If codes are stored, AIR BAG warning light will flash or remain on when ignition is turned on. Codes are automatically cleared when fault is corrected.

AIR BAG Warning Light Flashes

AIR BAG warning light indicates fault codes by flashing. Count the number of flashes between pauses to determine code. See AIR BAG CODES table. Codes are prioritized. If 2 or more faults are present, diagnostic module will display highest code number first. After identifying code, go to appropriate code test.

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AIR BAG Warning Light Remains On

AIR BAG warning light on all the time when ignition is turned on indicates a Code 0 (zero). See AIR BAG CODES table.

AIR BAG Warning Light Does Not Come On

Check for blown fuses, burned-out bulb, disconnected diagnostic module or open circuit between warning light and diagnostic module.

AIR BAG CODES

Code	Possible Cause
0 ⁽¹⁾	Poor Connection At Diagnostic Module
12	Open Circuit Or Poor Connection Of Power Source
13	Damaged D-Sensor (D-Sensor On)
21	Poor Installation Of S-Sensor
22	Damaged S-Sensor (S-Sensor On)
23	Open Circuit In S-Sensor Feed Circuit
24	S-Sensor Diagnostic Circuit Open
32	High Resistance Or Open Circuit In Driver Air Bag Module Circuit
33	High Resistance Or Open Circuit In Passenger Air Bag Module Circuit
34	Low Resistance In Driver Air Bag Module Circuit
35	Low Resistance In Passenger Air Bag Module Circuit
41	Open Circuit Between Diagnostic Module And D-Sensor
44	Poor Installation Of Right D-Sensor
45	Poor Installation Of Center D-Sensor
46	Poor Installation Of Left D-Sensor
51	System Down (Fuse Open)
52	Damaged Back-Up Battery
53	Damaged Diagnostic Module
99 ⁽²⁾	Poor Connection Of All D-Sensors

(1) AIR BAG warning light remains on all the time indicating a Code 0 (zero).

(2) AIR BAG warning light will flash quickly and continuously, indicating Code 99.

CODE 0

Warning Light Remains On

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1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Ensure diagnostic module connectors are properly connected. Verify that shorting bar is in fully retracted position. Repair as necessary. If diagnostic module connectors and shorting bar are okay, go to next step.
2. Disconnect diagnostic module connector (with shorting bar). Remove shorting bar from diagnostic module connector. Observe AIR BAG warning light. If AIR BAG warning light is on, repair wiring harness between instrument cluster and diagnostic module connector. Perform **TESTING - SYSTEM OPERATION CHECK** . If AIR BAG warning light is off, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 12

NOTE: For connector terminal identification, see **WIRING DIAGRAM** .

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Check INJ fuse (30 amp) located in engine compartment fuse panel. If fuse is okay, go to next step. If fuse is open, go to step 3).
2. Disconnect diagnostic module connectors. Connect negative battery cable. Using a DVOM, measure voltage on diagnostic module connector terminal 1L. If battery voltage is present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If battery voltage is not present, repair wiring harness between air bag fuse and diagnostic module connector. Perform **TESTING - SYSTEM OPERATION CHECK** .
3. Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 1L and ground. If continuity is not present, go to next step. If continuity is present, replace INJ fuse and repair wiring harness between INJ fuse and diagnostic module connector. Perform **TESTING - SYSTEM OPERATION CHECK** .
4. Using a DVOM, check for continuity between diagnostic module connector terminal 1H and ground. If continuity is present, go to next step. If continuity is not present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** .
5. Disconnect S-sensor connector. Using a DVOM, check for continuity between diagnostic module connector terminal 1H and ground. If continuity is present, replace S-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 13

NOTE: For connector terminal identification, see **WIRING DIAGRAM** .

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 13, go to step 4). If AIR BAG warning light displays a code other than 13, go to next step.
2. Disconnect negative battery cable. Remove driver air bag module. See **DRIVER AIR BAG MODULE** under REMOVAL & INSTALLATION. Connect driver air bag module Orange and Blue clockspring connectors. Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 13, replace clockspring assembly. Perform **TESTING - SYSTEM OPERATION CHECK** . If AIR BAG warning light displays a code other than 13, go to next step.

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3. Turn ignition off. Disconnect negative battery cable. Connect passenger air bag module Orange and Blue clockspring connectors. Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 13, replace passenger air bag module. Perform **TESTING - SYSTEM OPERATION CHECK** . If AIR BAG warning light displays a code other than 13, replace driver air bag module. Perform **TESTING - SYSTEM OPERATION CHECK** .
4. Turn ignition off. Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 2F and ground. If continuity is not present, got to next step. If continuity is present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** .
5. Using a DVOM, check for continuity between diagnostic module connector terminal 2G and ground. If continuity is not present, go step XX). If continuity is present, go to next step.
6. Using a DVOM, check for continuity between diagnostic module connector terminal 2D and ground. If continuity is present, go to next step. If continuity is not present, go to step 8).
7. Disconnect S-sensor connector. Using a DVOM, check for continuity between S-sensor connector (sensor side) terminal "C" and ground. If continuity is present, replace S-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** .
8. Using a DVOM, check resistance between diagnostic module connector terminals 1C, 1A, 2L and ground one at a time. If resistance on all terminals was 1.18 k-ohms, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If resistance was not 1.18 k-ohms, on one or more terminals, test suspect D-sensor. See SENSOR IDENTIFICATION table. Go to next step.

SENSOR IDENTIFICATION

Diagnostic Module Connector Terminal	D-Sensor
1A	Center
1C	Right
2L	Left

9. Using a DVOM, check resistance between suspect D-sensor connector (sensor side) terminal "A" and ground. See **Fig. 8** . If resistance is 1.18 k-ohms, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** . If resistance is not 1.18 k-ohms, replace suspect D-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** .

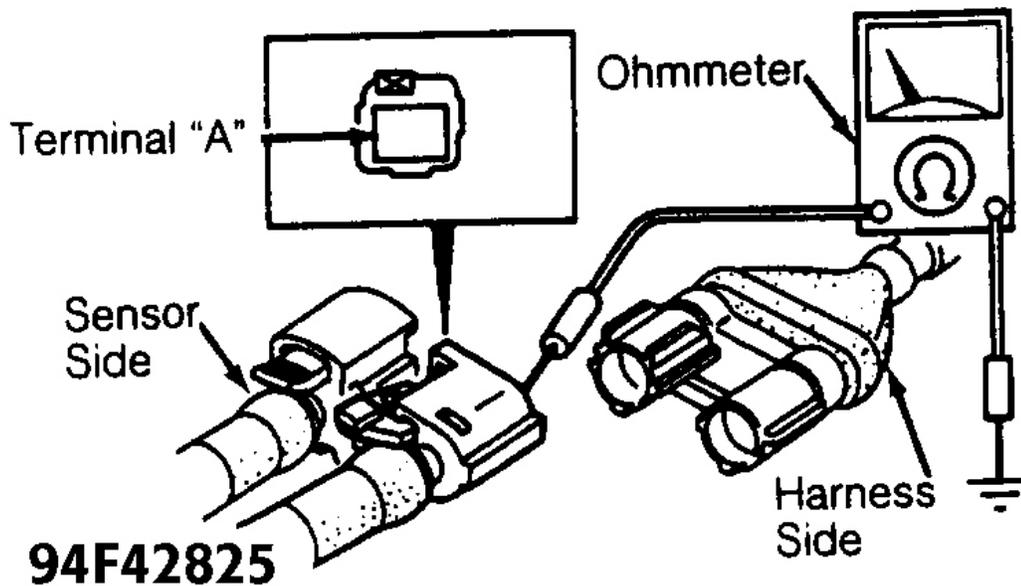


Fig. 8: Identifying D-Sensor Terminal "A"
 Courtesy of MAZDA MOTORS CORP.

CODE 21

NOTE: For connector terminal identification, see WIRING DIAGRAM .

1. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 1E and ground. If continuity is present, replace diagnostic module. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, go to next step.
2. Disconnect Orange and Blue S-sensor connector. Using a DVOM, check for continuity between S-sensor connector (sensor side) terminal "A" and ground. See Fig. 9 . If continuity is present, replace wiring harness. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, replace S-sensor. Perform TESTING - SYSTEM OPERATION CHECK .

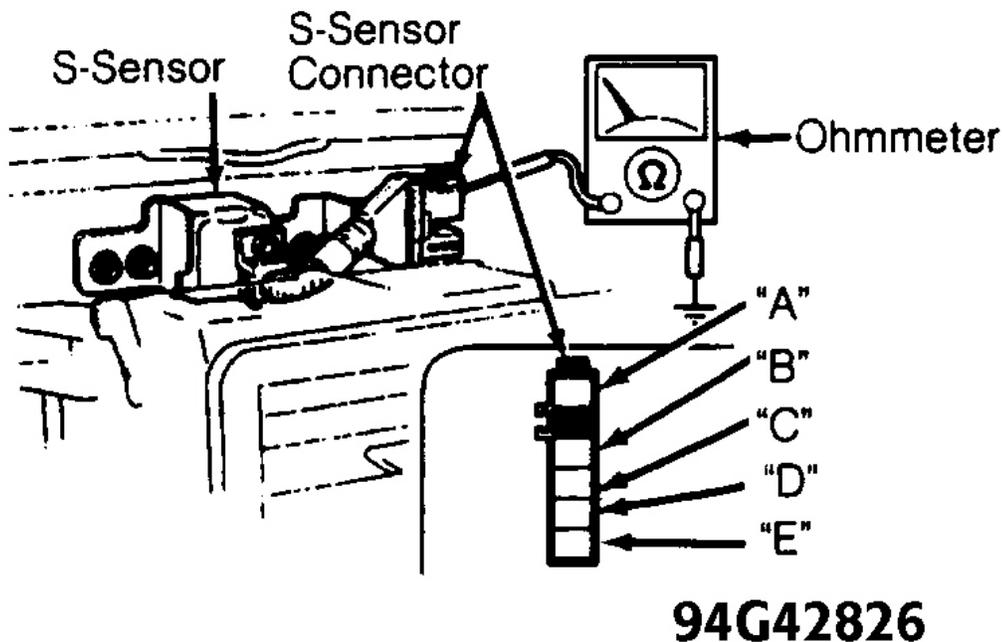


Fig. 9: Identifying S-Sensor Connector Terminals
 Courtesy of MAZDA MOTORS CORP.

CODE 22

NOTE: For connector terminal identification, see WIRING DIAGRAM .

1. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 1H and 2D. If continuity is present, go to next step. If continuity is not present, replace diagnostic module. Perform TESTING - SYSTEM OPERATION CHECK .
2. Disconnect Orange and Blue S-sensor connector. Using a DVOM, check for continuity between S-sensor connector (sensor side) terminals "B" and "D". See Fig. 9 . If continuity is present, replace S-sensor. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, replace wiring harness. Perform TESTING - SYSTEM OPERATION CHECK .

CODE 23

NOTE: For connector terminal identification, see WIRING DIAGRAM .

1. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 1H and 2C. If continuity is present, replace diagnostic module. Perform TESTING -

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SYSTEM OPERATION CHECK . If continuity is not present, go to next step.

2. Disconnect Orange and Blue S-sensor connector. Using a DVOM, check for continuity between S-sensor connector (sensor side) terminals "B" and "E". See **Fig. 9** . If continuity is present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace S-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 24

NOTE: For connector terminal identification, see **WIRING DIAGRAM** .

Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 2B and 2D. If continuity is present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 32

NOTE: For connector terminal identification, see **WIRING DIAGRAM** .

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Connect a jumper wire between driver air bag module clockspring connector (harness side) terminals "B" and "C". See **Fig. 10** . Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 32, go to step 4). If AIR BAG warning light displays a code other than 32, go to next step.

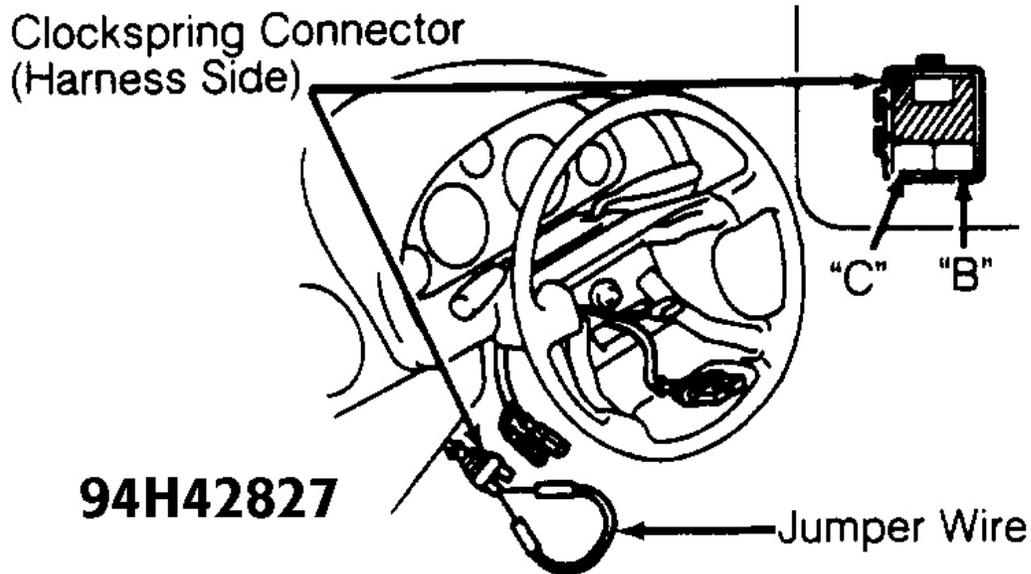


Fig. 10: Clockspring Connector Terminal ID (Harness Side)
Courtesy of MAZDA MOTORS CORP.

2. Turn ignition off. Disconnect negative battery cable. Remove driver air bag module. See **DRIVER AIR BAG MODULE** under REMOVAL & INSTALLATION. Remove jumper wire from driver air bag module clockspring connector (harness side). Connect driver air bag module Orange and Blue clockspring connectors. Connect a jumper wire between driver air bag module clockspring connector terminals "B" and "C". See **Fig. 11**.

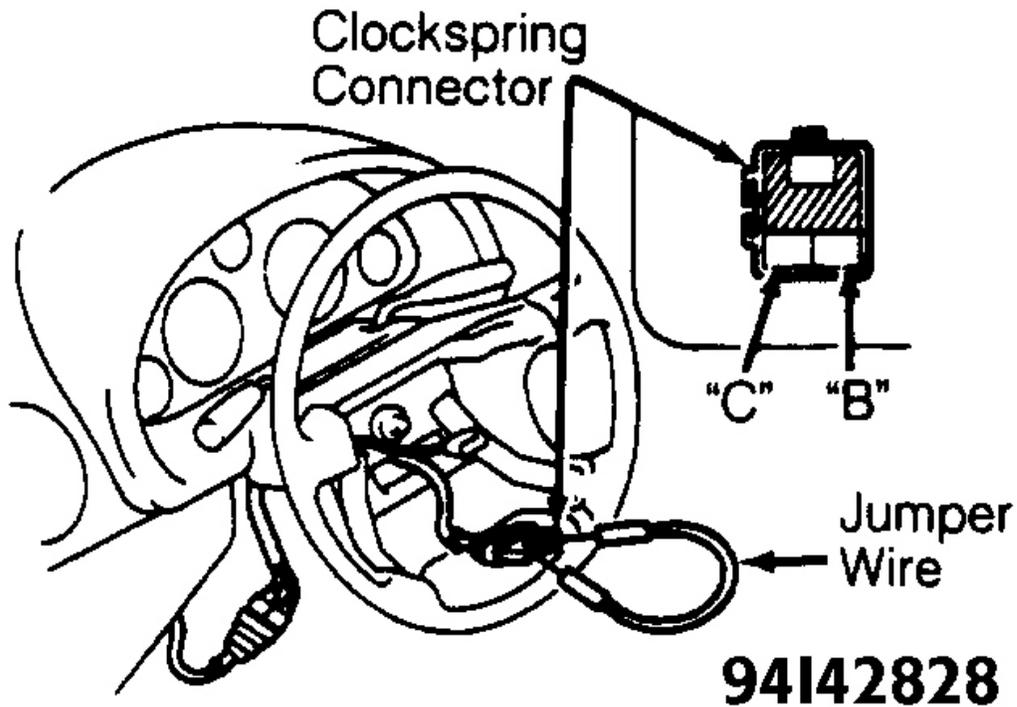


Fig. 11: Identifying Clockspring Connector Terminals
 Courtesy of MAZDA MOTORS CORP.

3. Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 32, replace clockspring assembly. Perform **TESTING - SYSTEM OPERATION CHECK**. If AIR BAG warning light displays a code other than 32, replace driver air bag module. Perform **TESTING - SYSTEM OPERATION CHECK**.
4. Turn ignition off. Disconnect negative battery cable. Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 2D and 2F. If continuity is present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK**. If continuity is not present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK**.

CODE 33

NOTE: For connector terminal identification, see **WIRING DIAGRAM**.

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Connect a one ohm resistor (rated power one watt) between driver air bag module clockspring connector (harness side) terminals "B" and "C". See **Fig. 10**. Connect a jumper wire between passenger air bag module connector

(harness side) terminals "B" and "C". See **Fig. 12**.

2. Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 33, go to next step. If AIR BAG warning light displays a code other than 33, replace passenger air bag module. Perform **TESTING - SYSTEM OPERATION CHECK**.

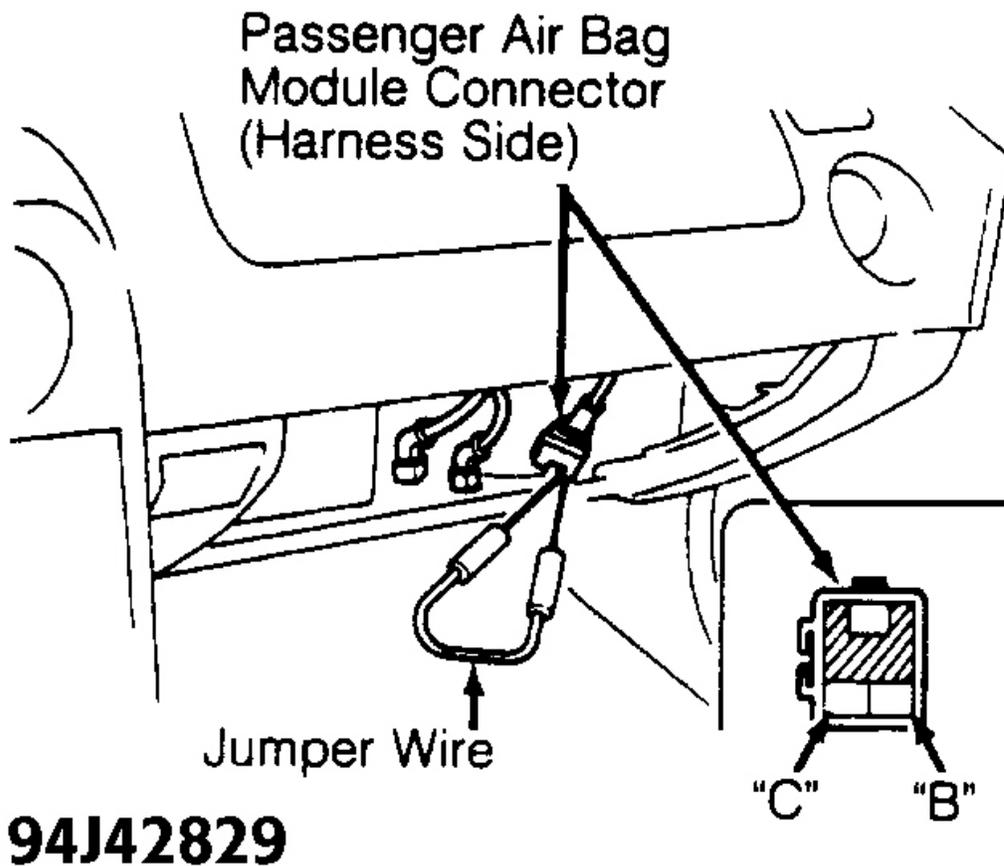


Fig. 12: Passenger Air Bag Module Connector Terminal ID (Harness Side)
 Courtesy of MAZDA MOTORS CORP.

3. Turn ignition off. Disconnect negative battery cable. Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 2D and 2G. If continuity is present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK**. If continuity is not present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK**.

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AIR BAG RESTRAINT SYSTEM 1994 ACCESSORIES/SAFETY EQUIPMENT Mazda Air Bags

NOTE: For connector terminal identification, see WIRING DIAGRAM .

1. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Connect a one ohm resistor (rated power one watt) between passenger air bag module connector (harness side) terminals "B" and "C". See Fig. 12 .
2. Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 34, go to next step. If AIR BAG warning light displays a code other than 34, go to step 4).
3. Turn ignition off. Disconnect negative battery cable. Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 2D and 2F. If continuity is present, replace wiring harness. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, replace diagnostic module. Perform TESTING - SYSTEM OPERATION CHECK .
4. Turn ignition off. Disconnect negative battery cable. Remove driver air bag module. See DRIVER AIR BAG MODULE under REMOVAL & INSTALLATION. Inspect clockspring connector for broken pins. If clockspring connector pins are okay, go to next step. If clockspring connector pins are broken, replace clockspring assembly. Perform TESTING - SYSTEM OPERATION CHECK .
5. Connect clockspring connector. Turn ignition on. Observe AIR BAG warning light. If AIR BAG warning light displays Code 34, replace clockspring assembly. Perform TESTING - SYSTEM OPERATION CHECK . If AIR BAG warning light does not display Code 34, replace driver air bag module. Perform TESTING - SYSTEM OPERATION CHECK .

CODE 35

NOTE: For connector terminal identification, see WIRING DIAGRAM .

1. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Inspect clockspring connector for broken pins. If clockspring connector pins are okay, go to next step. If clockspring connector pins are broken, replace clockspring assembly. Perform TESTING - SYSTEM OPERATION CHECK .
2. Connect a one ohm resistor (rated power one watt) between driver air bag module clockspring connector (harness side) terminals "B" and "C". See Fig. 10 . Connect negative battery cable. Turn ignition on. Observe AIR BAG warning light.
3. If AIR BAG warning light displays Code 35, go to next step. If AIR BAG warning light displays a code other than 35, replace passenger air bag module. Perform TESTING - SYSTEM OPERATION CHECK .
4. Turn ignition off. Disconnect negative battery cable. Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminals 2D and 2G. If continuity is present, replace wiring harness. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, replace diagnostic module. Perform TESTING - SYSTEM OPERATION CHECK .

CODE 41

NOTE: For connector terminal identification, see WIRING DIAGRAM .

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AIR BAG RESTRAINT SYSTEM 1994 ACCESSORIES/SAFETY EQUIPMENT Mazda Air Bags

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect diagnostic module connectors. Using a DVOM, check resistance between diagnostic module connector terminals 1C, 1A, 2L and ground one at a time. If resistance on all terminals was 1.18 k-ohms, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If resistance was not 1.18 k-ohms, on one or more terminals, test suspect D-sensor. See SENSOR IDENTIFICATION table. Go to next step.

SENSOR IDENTIFICATION

Diagnostic Module Connector Terminal	D-Sensor
1A	Center
1C	Right
2L	Left

2. Using a DVOM, check resistance between suspect D-sensor connector (sensor side) terminal "A" and ground. See **Fig. 8** . If resistance is 1.18 k-ohms, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** . If resistance is not 1.18 k-ohms, replace suspect D-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 44

NOTE: For connector terminal identification, see **WIRING DIAGRAM** .

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 2J and ground. If continuity is present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, go to next step.
2. Disconnect right D-sensor connector. Using a DVOM, check for continuity between right D-sensor connector (sensor side) terminal "B" and ground. See **Fig. 13** . If continuity is present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace right D-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** .

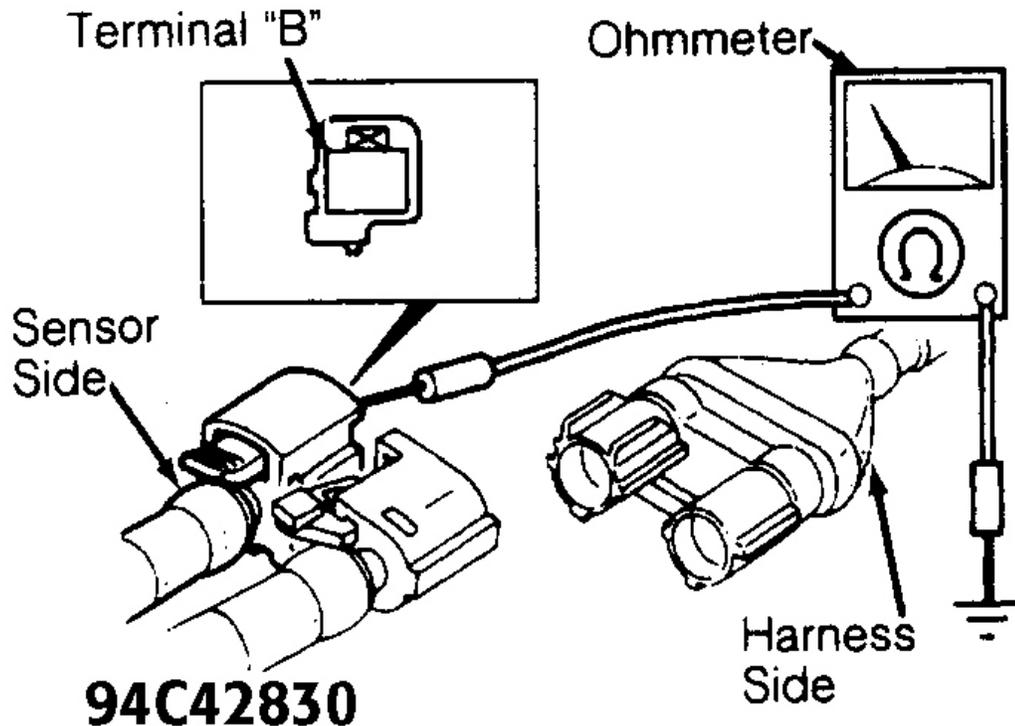


Fig. 13: Identifying D-Sensor Terminal "B"
 Courtesy of MAZDA MOTORS CORP.

CODE 45

NOTE: For connector terminal identification, see WIRING DIAGRAM .

1. Disable air bag system. See DISABLING & ACTIVATING AIR BAG SYSTEM . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 2H and ground. If continuity is present, replace diagnostic module. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, go to next step.
2. Disconnect center D-sensor connector. Using a DVOM, check for continuity between center D-sensor connector (sensor side) terminal "B" and ground. See Fig. 13 . If continuity is present, replace wiring harness. Perform TESTING - SYSTEM OPERATION CHECK . If continuity is not present, replace center D-sensor. Perform TESTING - SYSTEM OPERATION CHECK .

CODE 46

NOTE: For connector terminal identification, see WIRING DIAGRAM .

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AIR BAG RESTRAINT SYSTEM 1994 ACCESSORIES/SAFETY EQUIPMENT Mazda Air Bags

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 2E and ground. If continuity is present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, go to next step.
2. Disconnect left D-sensor connector. Using a DVOM, check for continuity between left D-sensor connector (sensor side) terminal "B" and ground. See **Fig. 13** . If continuity is present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace left D-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 51

Code 51 will set because of one of the following conditions:

- Blown diagnostic module internal fuse (fault conditions no longer present).
- Diagnostic module has not been replaced after Code 13 was set and repaired.
- Intermittent short in air bag deployment circuit.

If Code 13 was set and repaired, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** . If an intermittent short is suspected, inspect wiring harnesses and connectors for damage. If no damage is found in wiring harnesses and connectors, wiggle wiring harness to see if Code 13 sets. If Code 13 sets, see **CODE 13** under DIAGNOSIS to repair system.

CODE 52

NOTE: For connector terminal identification, see **WIRING DIAGRAM** .

1. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect diagnostic module connectors. Using a DVOM, check for continuity between diagnostic module connector terminal 1H and ground. If continuity is present, go to next step. If continuity is not present, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** .
2. Disconnect Orange and Blue S-sensor connector. Using a DVOM, check for continuity between S-sensor connector (sensor side) terminal "B" and ground. See **Fig. 9** . If continuity is present, replace S-sensor. Perform **TESTING - SYSTEM OPERATION CHECK** . If continuity is not present, replace wiring harness. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 53

Code 53 sets when diagnostic module is damaged. To correct this condition, replace diagnostic module. Perform **TESTING - SYSTEM OPERATION CHECK** .

CODE 99

Code 99 sets when poor connections are present between all D-sensors and S-sensor. To correct this condition, ensure all D-sensor and S-sensor connectors are properly connected. Perform **TESTING - SYSTEM OPERATION CHECK** .

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AIR BAG RESTRAINT SYSTEM 1994 ACCESSORIES/SAFETY EQUIPMENT Mazda Air Bags

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Steering Wheel Nut	29-36 (39-49)
(1) Torque specifications are not available for air bag modules, clockspring, crash sensors, and diagnostic module.	

POST-COLLISION AIR BAG SAFETY INSPECTION

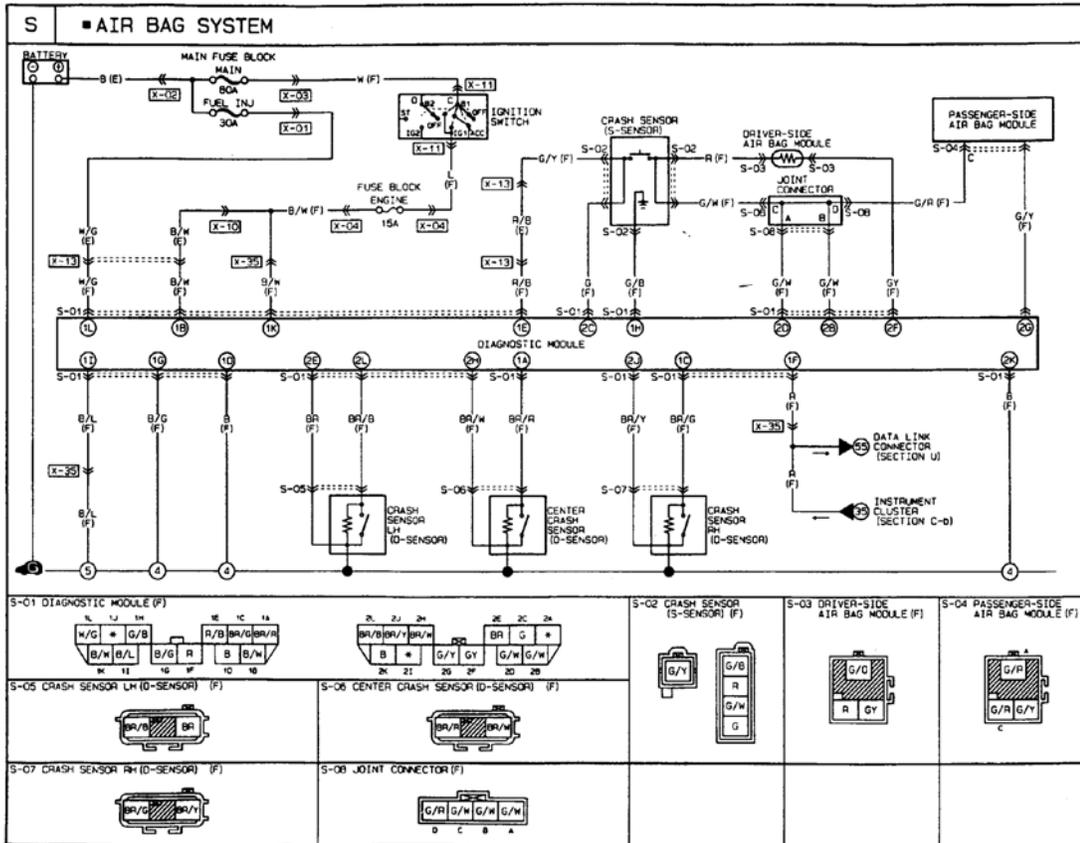
POST-COLLISION AIR BAG SAFETY INSPECTION

Action	Components
Replace After Deployment	<ul style="list-style-type: none">• Air Bag Module(s)• Clockspring
Inspect & If Damaged, Replace Component (Even If Air Bag Did Not Deploy)	<ul style="list-style-type: none">• Air Bag Diagnosis Control Unit• Impact Sensors & Sensors Mountings<ul style="list-style-type: none">• Steering Column• Steering Wheel• Wiring Harness
Comments	<ul style="list-style-type: none">• DO NOT attempt wiring harness repairs. Replace entire wiring harness.• Impact sensors must always be installed with arrow on sensor facing front of vehicle.

WIRING DIAGRAM

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AIR BAG RESTRAINT SYSTEM 1994 ACCESSORIES/SAFETY EQUIPMENT Mazda Air Bags



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Fig. 14: Air Bag System Wiring Diagram
 Courtesy of MAZDA MOTORS CORP.