

RESTRAINTS

14

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AIRBAG SYSTEM

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GENERAL INFORMATION

Description

Available occupant restraints for this vehicle include both active and passive types. Active restraints are those which require the vehicle occupants to take some action to employ, such as fastening a seat belt; while passive restraints require no action by the vehicle occupants to be employed.

Active Restraints

- Front Seat belts
- Rear Seat belts

Passive Restraints

- Driver Airbag
- Passenger Airbag
- Seat Belt Tensioner

Operation

Active Restraints

The primary passenger restraints are the seat belts. Seat belts are referred to as an active restraint because the vehicle occupants are required to physically fasten and properly adjust these restraints in order to benefit from them.

Passive Restraints

The passive restraints are referred to as a supplemental restraint system because they were designed and are intended to enhance the protection for the occupants of the vehicle only when used in conjunction with the seat belts. They are referred to as passive restraints because the vehicle occupants are not required to do anything to make them operate; however, the vehicle occupants must be wearing their seat belts in order to obtain the maximum safety benefit from the supplemental restraint system.

The supplemental restraint system electrical circuits are continuously monitored and controlled by a microprocessor and software contained within the Restraints Control Module (RCM). An airbag indicator in the Instrument Cluster illuminates for about seven seconds as a bulb test each time the ignition switch is turned to the ON or START positions. Following the bulb test, the airbag indicator is turned ON or OFF by the RCM to indicate the status of the supplemental restraint system. If the airbag indicator comes ON at any time other than during the bulb test, it indicates that there is a problem in the supplemental restraint system electrical circuits. Such a problem may cause airbags not to deploy when required, or to deploy when not required.

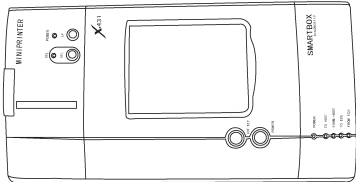
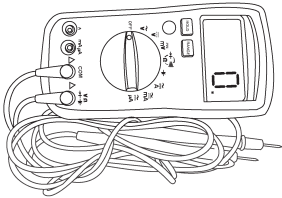
Deployment of the supplemental restraints depends upon the angle and severity of an impact. When an impact is severe enough, the microprocessor in the RCM signals the inflator of the appropriate airbag units to deploy their airbag cushions. The front seat belt tensioners are provided with a deployment signal by the RCM in conjunction with the front airbags.

Specifications

Torque Specifications

DESCRIPTION	TORQUE (N·m)
Driver Airbag Retaining Bolts	10
Restraints Control Module Retaining Nuts	10
Passenger Airbag Retaining Bolts	20

GENERAL INFORMATION**Special Tools**

Diagnostic Scan Tool X-431	 besm030001
Digital Multimeter Fluke 15B & 17B	 besm030002

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

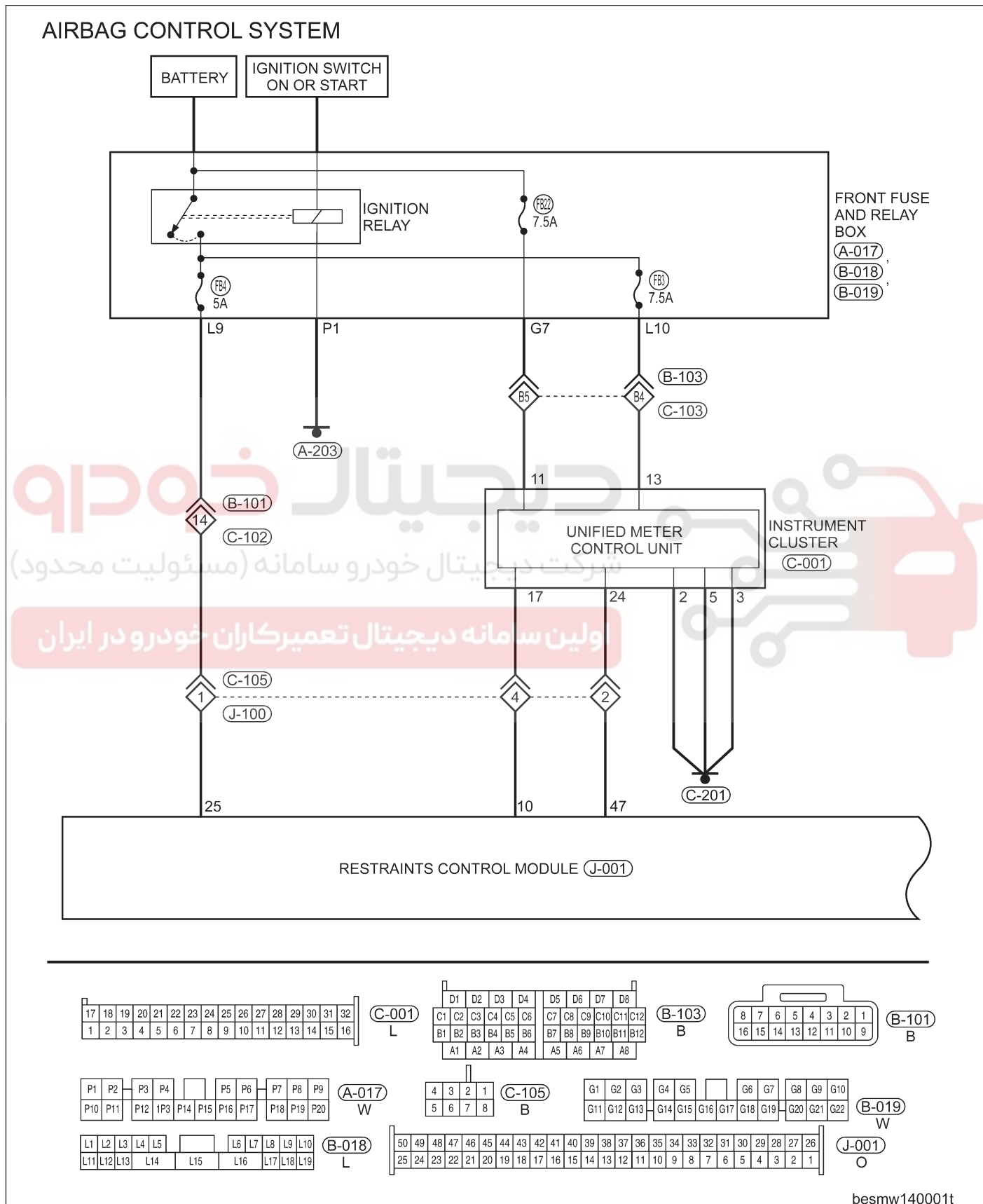
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



GENERAL INFORMATION

Electrical Schematics

Airbag Control System (Page 1 of 3)

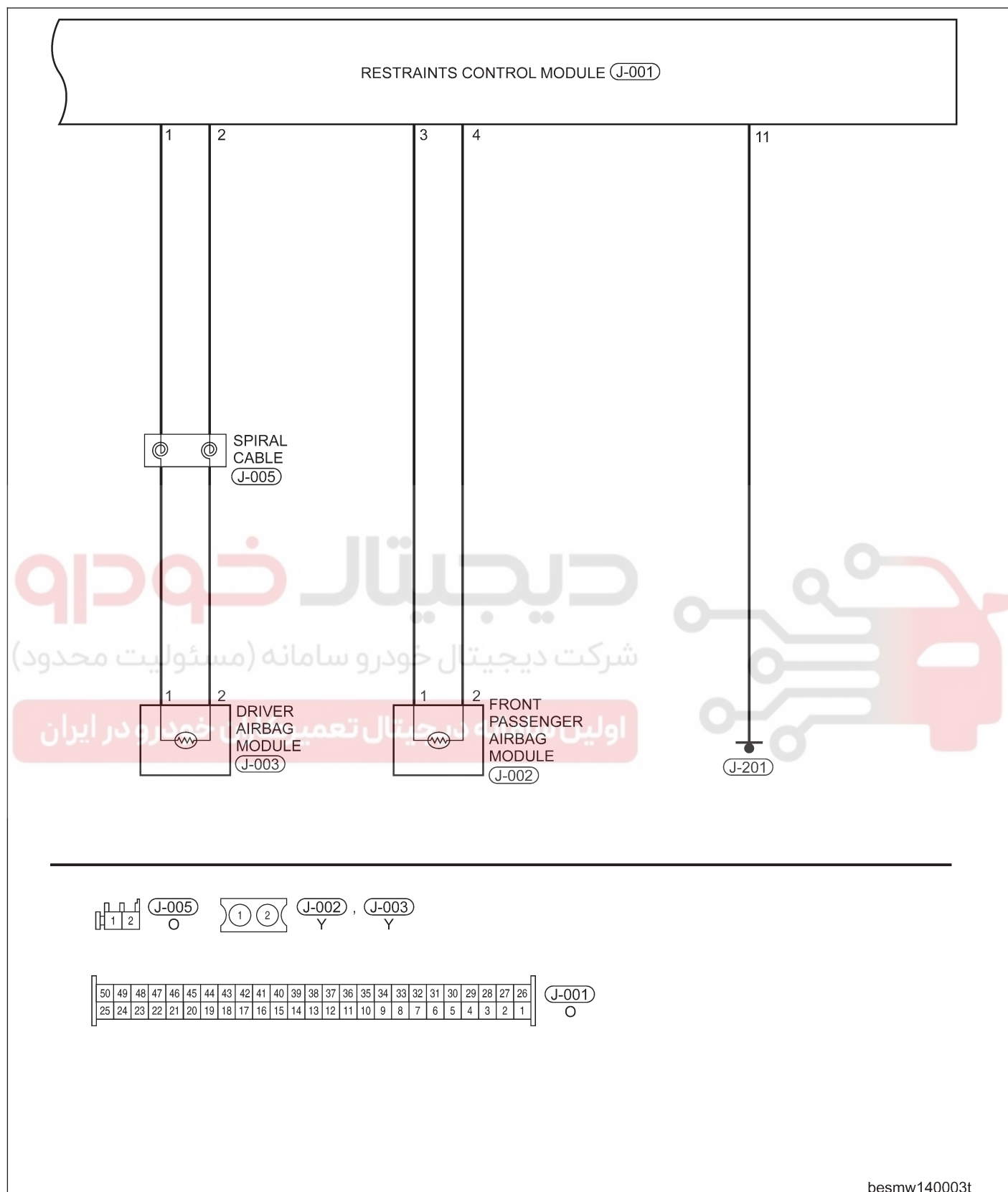


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Airbag Control System (Page 2 of 3)



Airbag Control System (Page 3 of 3)



DIAGNOSIS & TESTING

DIAGNOSIS & TESTING

Diagnostic Help

1. The X-431 scan tool connects to the Data Link Connector (DLC) and communicates with the vehicle electronic modules through the data network.
2. Confirm that the malfunction is current and carry-out the diagnostic tests and repair procedures.
3. If the DTC cannot be deleted, it is a current fault.
4. Use only a digital multimeter to perform voltage readings on electronic systems.
5. Refer to any Technical Service Bulletins that may apply to the failure.
6. Visually inspect the related wiring harness.
7. Inspect and clean all Restraints Control Module (RCM) grounds that are related to the most current DTC.
8. If numerous trouble codes were set, use a wiring schematic and look for any common ground circuits or voltage supply circuits that may apply to the DTC.

Intermittent DTC Troubleshooting

If the failure is intermittent perform the following:

- Check for loose connectors.
- Look for any chafed, pierced, pinched, or partially broken wires.
- Monitor the scan tool data relative to this circuit.
- Wiggle the related wiring harness and connectors while looking for an interrupted signal on the affected circuit.
- If possible, try to duplicate the conditions under which the DTC set.
- Look for the data to change or for the DTC to reset during the wiggle test.
- Look for broken, bent, pushed out or corroded terminals.
- Inspect the sensor and mounting area for any condition that would result in an incorrect signal, such as damage, foreign material.
- A data recorder, and/or oscilloscope should be used to help diagnose intermittent conditions.
- Remove the Restraints Control Module (RCM) from the troubled vehicle and install in a new vehicle and test. If the DTC cannot be deleted, the RCM is malfunctioning. If the DTC can be deleted, return the RCM to the original vehicle and inspect the system again.

Diagnostic Tools اولین سامانه دیجیتال تعمیرکاران

Diagnostic Scan Tool X-431

Read the following when connecting the X-431 scan tool:

- Connect the scan tool to the Data Link Connector (DLC) for communication with the vehicle.
- The DLC is located on the driver side compartment under the steering column (it is attached to the instrument panel and accessible from the driver seat).
- The DLC is rectangular in design and capable of accommodating up to 16 terminals.
- The electrical connector has keying features to allow easy connection.

Airbag Special Load Tool

Use the airbag special load tool to diagnose airbag system faults:

- The airbag special load tool simulates airbag system components.

NOTE :

Using the airbag special load tool will help prevent other airbag DTCs from being set while troubleshooting the system.

Digital Multimeter

Perform the following when using the digital multimeter:

- Troubleshoot electrical problems and wiring systems.
- Use a multimeter for basic fault finding and bench testing.
- Use a multimeter to measure voltage, current and resistance.

DIAGNOSIS & TESTING

Airbag Control Module Connector Pin-Out Table

PIN	CIRCUIT IDENTIFICATION	PIN	CIRCUIT IDENTIFICATION
1	Driver Airbag	26	—
2	Driver Airbag	27	—
3	Passenger Airbag	28	—
4	Passenger Airbag	29	—
5	—	30	—
6	—	31	—
7	—	32	—
8	—	33	—
9	—	34	—
10	Driver Airbag Indicator	35	—
11	GND	36	—
12	Airbag Switch	37	Airbag Switch
13	—	38	—
14	—	39	—
15	—	40	—
16	—	41	—
17	—	42	—
18	—	43	—
19	—	44	—
20	—	45	—
21	—	46	K-Line
22	—	47	Passenger Airbag Indicator
23	—	48	Airbag Unlock Input
24	—	49	—
25	BATT	50	—

Diagnostic Trouble Code (DTC) List

Restraints Control Module DTC List

DTC	DTC DEFINITION
B1001	Line 1 Leakage
B1002	Line 2 Leakage
B1003	Line 3 Leakage
B1004	Line 4 Leakage
B1009	Line 9 Leakage
B100A	Line 10 Leakage
B100B	Line 11 Leakage
B100C	Line 12 Leakage
B10CB	Capacitor Charge Error
B10CC	Capacitance Error

DIAGNOSIS & TESTING

DTC	DTC DEFINITION
B1042	Battery
B1034	Childseat
B10CE	Stack Overflow
B1040	Warning Lamp
B1041	Inhibition Lamp
B1044	Line
B10CF	Children Driver Out Of Order
B10D0	Childseat In Fault
B1081	Low Stage Transistor 1
B1082	Low Stage Transistor 2
B1083	Low Stage Transistor 3
B1084	Low Stage Transistor 4
B1089	Low Stage Transistor 9
B108A	Low Stage Transistor 10
B108B	Low Stage Transistor 11
B108C	Low Stage Transistor 12
B1099	High Stage Transistor 1
B109A	High Stage Transistor 2
B109B	High Stage Transistor 3
B109C	High Stage Transistor 4
B10A1	High Stage Transistor 9
B10A2	High Stage Transistor 10
B10A3	High Stage Transistor 11
B10A4	High Stage Transistor 12
B10B1	Protected Data Corruption
B10B2	CPU Trouble
B10B3	EEPROM Access (R/W) Failure
B10B4	EEPROM Not Programmed
B10B5	Bad EEPROM Checksum
B10B6	EEPROM Out Of Order
B10B7	Calibration Parameter Corruption
B10B8	EEPROM Calibration Parameter Corruption
B10B9	Accelerometer Offset Compensation Trouble
B10Ba	External Watchdog
B10BB	Internal Watchdog
B10BD	A-D Converter Trouble
B10BE	Enable Firing Line Trouble
B10C0	Crash Confirmation Time Too Long
B10C1	Charge Sequence Error
B10C2	X Accelerometer Error
B10C3	Y Accelerometer Error
B10C4	X Safing Error
B10C7	Crash Spy Data Corruption

DIAGNOSIS & TESTING

DTC	DTC DEFINITION
B10CA	Accelerometer Saturation Error
B1043	RSU
B1035	Left RSU
B1036	Right RSU
B10D2	RSU Saturation

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DIAGNOSIS & TESTING

Diagnostic Trouble Code (DTC) Tests

B1003: Line 3 Leakage - Driver Squib Ignition Drive Circuit Shorted

- **When Monitored:** With the ignition switch on.
- **Set Condition:** The Restraints Control Module (RCM) will set this DTC if it detects the voltage or the resistance is out of the acceptable range on the driver squib circuits.

NOTE :

The squib circuit connectors integrate a "shorting" spring (which prevents the air bag from deploying unintentionally due to static electricity by shorting the positive wire to the negative wire in the squib circuit when the connectors are disconnected). Therefore, if the airbag electrical connector or clock spring electrical connector is damaged or improperly connected, the shorting spring may not be released when the electrical connector is connected.

NOTE :

The following tools are required to perform the following test:

- X-431 Scan Tool
- Appropriate Airbag Special Load Tool
- Digital Multimeter

Step 1.

Connect the X-431 scan tool to the Data Link Connector (DLC) - use the most current software available.

Turn the ignition switch on, with the scan tool, view and erase stored DTCs in the RCM.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

Wait one minute, and with the scan tool, view active DTCs in the RCM.

Is DTC B1003 present?

Yes >> • Go to the next step.

No >> • Go to step 6.

Step 2.

Turn the ignition switch off.

Disconnect the negative battery cable.

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Disconnect the driver airbag module electrical connector.

NOTE :

Check connectors - Clean and repair as necessary.

Connect the appropriate airbag special load tool (connect special tool dummy resistor to special tool resistor harness) to the clock spring side of the vehicle harness (in place of the driver airbag module).

Connect the negative battery cable.

Turn the ignition switch on.

WARNING!

To avoid serious or fatal injury, connect the battery, then turn the ignition switch on,

With the scan tool, erase the DTC memory.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

DIAGNOSIS & TESTING

With the scan tool, read the active RCM DTCs

Does the scan tool display: B1003 - Line 3 leakage?

Yes >> • Go to the next step.

No >> • Replace the driver airbag module (See Driver Airbag Module Removal & Installation in Section 14 Restraints).

Step 3.

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Turn the ignition switch off.

Disconnect the negative battery cable.

Disconnect the airbag special load tool.

Disconnect the RCM connectors.

NOTE :

Check connectors - Clean and repair as necessary.

Measure the following circuits with a digital multimeter:

- Measure the resistance of the driver air bag circuit between the RCM electrical connector harness side terminal 1 and the clock spring electrical connector pin.
- Measure the resistance of the driver air bag circuit between the RCM electrical connector harness side terminal 2 and the clock spring electrical connector pin.

Is the resistance below 2.0 ohm?

Yes >> • Go to the next step.

No >> • Replace the circuit(s) between the RCM electrical connector J-001 (terminal 1 or 2) and the clock spring electrical connector terminals for an open.

Step 4.

Remove the cable tie between the terminals and the shorting spring.

Measure the following circuits with a digital multimeter:

- Measure the resistance of the driver air bag circuit between the RCM electrical connector harness side terminal 1 and ground.
- Measure the resistance of the driver air bag circuit between the RCM electrical connector harness side terminal 2 and ground.

Is the resistance above 10,000 ohms?

Yes >> • Go to the next step.

No >> • Replace the circuit(s) between the RCM electrical connector J-001 (terminal 1 or 2) and the clock spring electrical connector terminals for a short to ground.

Step 5.

Disconnect all other relative SRS connectors.

Connect the negative battery cable.

Turn the ignition switch on.

WARNING!

To avoid serious or fatal injury, connect the battery, then turn the ignition switch on.

DIAGNOSIS & TESTING

Measure the following circuits with a digital multimeter:

- Measure the voltage of the driver air bag circuit between the RCM electrical connector harness side terminal 1 and body ground.
- Measure the voltage of the driver air bag circuit between the RCM electrical connector harness side terminal 2 and body ground.

Was any voltage present on either circuit?

Yes >> • Replace the circuit(s) between the RCM electrical connector J-001 (terminal 1 or 2) and the clock spring electrical connector terminals for a short to voltage.

No >> • Replace the RCM (See Restraints Control Module Removal & Installation in Section 14 Restraints).

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

WARNING!

If the Restraints Control Module (RCM) is dropped at any time, it must be replaced. Failure to take the proper precautions can result in accidental airbag deployment and serious or fatal injury.

Step 6.

NOTE :

Diagnose and repair all active codes before diagnosing stored codes (See Restraints Control Module DTC List in Section 14 Restraints).

With the scan tool, record and erase all RCM DTCs.

Using the electrical schematic as a guide, inspect the following:

- Inspect the wiring and connectors of the related airbag system wiring and connectors.
- Look for any chafed, pierced, pinched, or partially broken wires.
- Look for broken, bent, pushed out or corroded terminals.
- Verify that there is good pin to terminal contact in the related connectors.

Were any problems found?

Yes >> • Replace as necessary.

No >> • Go to the next step.

Step 7.

Reconnect all disconnected components and harness connectors.

Monitor the scan tool data relative to this circuit and wiggle test the wiring and connectors:

- Look for the data to change or for the DTC to reset during the wiggle test.

Are any active DTCs present?

Yes >> • Select the appropriate diagnostic procedure from the DTC list in this section (See Restraints Control Module DTC List in Section 14 Restraints).

No >> • The system is now operating properly.
• Reassemble the vehicle and road test to verify the customers complaint is repaired.

DIAGNOSIS & TESTING

B1004: Line 4 Leakage - Passenger Squib Ignition Drive Circuit Shorted

- **When Monitored:** With the ignition switch on.
- **Set Condition:** The Restraints Control Module (RCM) will set this DTC if it detects the voltage or the resistance is out of the acceptable range on the passenger squib circuits.

NOTE :

The squib circuit connectors integrate a "shorting" spring (which prevents the air bag from deploying unintentionally due to static electricity by shorting the positive wire to the negative wire in the squib circuit when the connectors are disconnected). Therefore, if the airbag electrical connector or clock spring electrical connector is damaged or improperly connected, the shorting spring may not be released when the electrical connector is connected.

NOTE :

The following tools are required to perform the following test:

- X-431 Scan Tool
- Appropriate Airbag Special Load Tool
- Digital Multimeter

Step 1.

Connect the X-431 scan tool to the Data Link Connector (DLC) - use the most current software available.

Turn the ignition switch on, with the scan tool, view and erase stored DTCs in the RCM.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

Wait one minute, and with the scan tool, view active DTCs in the RCM.

Is DTC B1004 present?

Yes >> • Go to the next step.

No >> • Go to step 6.

Step 2.

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Disconnect the passenger airbag module electrical connector.

NOTE :

Check connectors - Clean and repair as necessary.

Connect the appropriate airbag special load tool (connect special tool dummy resistor to special tool resistor harness) to the passenger airbag module harness (in place of the passenger airbag module).

Connect the negative battery cable.

Turn the ignition on.

WARNING!

To avoid serious or fatal injury, connect the battery, then turn the ignition switch on.

With the scan tool, erase the DTC memory.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

DIAGNOSIS & TESTING

With the scan tool, read the active RCM DTCs.

Does the scan tool display: B1004 - Line 4 leakage?

Yes >> • Go to the next step.

No >> • Replace the passenger airbag module (See Passenger Airbag Module Removal & Installation in Section 14 Restraints).

Step 3.

Turn the ignition switch off.

Disconnect the negative battery cable.

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Disconnect the airbag special load tool.

Disconnect the RCM connectors.

NOTE :

Check connectors - Clean and repair as necessary.

Measure the following circuits with a digital multimeter:

- Measure the resistance of the passenger air bag circuit between the RCM electrical connector harness side terminal 3 and the passenger airbag electrical connector pin.
- Measure the resistance of the passenger air bag circuit between the RCM electrical connector harness side terminal 4 and the passenger airbag electrical connector pin.

Is the resistance below 2.0 ohm?

Yes >> • Go to the next step.

No >> • Replace the circuit(s) between the RCM electrical connector J-001 (terminal 3 or 4) and the passenger airbag electrical connector terminals for an open.

Step 4.

Remove the cable tie between the terminals and the shorting spring.

Measure the following circuits with a digital multimeter:

- Measure the resistance of the passenger air bag circuit between the RCM electrical connector harness side terminal 3 and ground.
- Measure the resistance of the passenger air bag circuit between the RCM electrical connector harness side terminal 4 and ground.

Is the resistance above 10,000 ohms?

Yes >> • Go to the next step.

No >> • Replace the circuit(s) between the RCM electrical connector J-001 (terminal 3 or 4) and the clock spring electrical connector terminals for a short to ground.

Step 5.

Connect the negative battery cable.

Turn the ignition switch on.

WARNING!

To avoid serious or fatal injury, connect the battery, then turn the ignition switch on.

DIAGNOSIS & TESTING

Measure the following circuits with a digital multimeter:

- Measure the voltage of the passenger air bag circuit between the RCM electrical connector harness side terminal 3 and body ground.
- Measure the voltage of the passenger air bag circuit between the RCM electrical connector harness side terminal 4 and body ground.

Was any voltage present on either circuit?

Yes >> • Replace the circuit(s) between the RCM electrical connector J-001 (terminal 3 or 4) and the clock spring electrical connector terminals for a short to voltage.

No >> • Replace the RCM (See Restraints Control Module Removal & Installation in Section 14 Restraints).

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

WARNING!

If the Restraints Control Module (RCM) is dropped at any time, it must be replaced. Failure to take the proper precautions can result in accidental airbag deployment and serious or fatal injury.

Step 6.

NOTE :

Diagnose and repair all active codes before diagnosing stored codes (See Restraints Control Module DTC List in Section 14 Restraints).

With the scan tool, record and erase all RCM DTCs.

Using the electrical schematic as a guide, inspect the following:

- Inspect the wiring and connectors of the related airbag system wiring and connectors.
- Look for any chafed, pierced, pinched, or partially broken wires.
- Look for broken, bent, pushed out or corroded terminals.
- Verify that there is good pin to terminal contact in the related connectors.

Were any problems found?

Yes >> • Replace as necessary.

No >> • Go to the next step.

Step 7.

Reconnect all disconnected components and harness connectors.

Monitor the scan tool data relative to this circuit and wiggle test the wiring and connectors:

- Look for the data to change or for the DTC to reset during the wiggle test.

Are any ACTIVE DTCs present?

Yes >> • Select the appropriate diagnostic procedure from the DTC list in this section (See Restraints Control Module DTC List in Section 14 Restraints).

No >> • The system is now operating properly.
• Reassemble the vehicle and road test to verify the customers complaint is repaired.

DIAGNOSIS & TESTING

B1040: Warning Lamp

- **When Monitored:** With the ignition switch on. The SRS warning lamp illuminates when the ignition switch is turned to the "ON" position and goes out after approximately 7 seconds if there is not a malfunction in the air-bag system.
- **Set Condition:** This DTC will set if the SRS warning lamp driver circuit is shorted to ground or open between the SRS warning lamp and the Restraints Control Module (RCM).

NOTE :

The following tools are required to perform the following test:

- X-431 Scan Tool
- Appropriate Airbag Special Load Tool
- Digital Multimeter

Step 1.

Connect the X-431 scan tool to the Data Link Connector (DLC) - use the most current software available.

Turn the ignition switch on, with the scan tool, view and erase stored DTCs in the RCM.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

Wait one minute, and with the scan tool, view active DTCs in the RCM.

Is DTC B1040 present?

Yes >> • Go to the next step.

No >> • Go to step 5.

Step 2.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

Observe the SRS warning lamp.

Check if the SRS warning lamp illuminated for approximately 3 seconds then goes out when the ignition switch is turned to the "ON" position. After that the SRS warning lamp illuminated constantly.

Is the check result normal?

Yes >> • Go to step 4.

No >> • Go to the next step.

Step 3.**WARNING!**

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Turn the ignition switch off.

Disconnect the negative battery cable.

Disconnect the RCM electrical connector J-001.

Disconnect the instrument cluster electrical connector C-001.

Disconnect the front fuse and relay box electrical connector B-018, A-017 or B-019.

NOTE :

Check connectors - Clean and repair as necessary.

- Check and ensure the fuse FB22 and FB3 are OK.

Measure the following circuits with a digital multimeter:

- Measure the harness for an open between the front fuse and relay box electrical connector (terminal G7 and L10) and instrument cluster C-001 (terminal 11 and 13).

DIAGNOSIS & TESTING

- Measure the harness for open between the instrument cluster C-001 (terminal 17 and 24) and RCM electrical connector J-001 (terminal 10 and 47).

Is the resistance below 2.0 ohm?

- Yes** >> • Replace the Instrument Cluster.
- Repeat Step 1.
 - The SRS system is considered normal, if the SRS warning lamp illuminates for approximately 3 seconds, then goes out when the ignition switch is turned to the "ON" position. The SRS warning lamp will not be illuminated and DTC B1040 is not current.
 - If the test result is not normal, replace the RCM.
- No** >> • Repair the harness wires between the RCM electrical connector J-001 (terminal 10 and 47) and instrument cluster C-001 (terminal 17 and 24) and the harness wires between combination meter C-001 (terminal 11 and 13) and front fuse and relay box electrical connector (terminal G7 and L10) for an open.

Step 4.

Turn the ignition switch off.

Disconnect the negative battery cable.

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Disconnect the RCM electrical connector J-001.

Disconnect the instrument cluster electrical connector C-001.

Measure the following circuits with a digital multimeter:

- Measure the resistance of the SRS warning lamp driver circuit between the RCM electrical connector harness side terminal 10 and ground.
- Measure the resistance of the SRS warning lamp driver circuit between the RCM electrical connector harness side terminal 47 and ground.

Is the resistance above 10,000 ohms?

- Yes** >> • Replace the RCM (See Restraints Control Module Removal & Installation in Section 14 Restraints).
- No** >> • Repair the circuit(s) between the RCM electrical connector J-001 (terminal 10 or 47) and the instrument cluster electrical connector C-001 (terminal 17 or 24) for a short to ground.

Step 5.

NOTE :

Diagnose and repair all active codes before diagnosing stored codes (See Restraints Control Module DTC List in Section 14 Restraints).

With the scan tool, record and erase all RCM DTCs.

Turn the ignition switch off.

Disconnect the battery cable.

Using the electrical schematic as a guide, inspect the following:

- Inspect the wiring and connectors of the related airbag system wiring and connectors.
- Look for any chafed, pierced, pinched, or partially broken wires.
- Look for broken, bent, pushed out or corroded terminals.

DIAGNOSIS & TESTING

- Verify that there is good pin to terminal contact in the related connectors.

Were any problems found?

Yes >> • Replace as necessary.

No >> • Go to the next step.

Step 6.

Reconnect all disconnected components and harness connectors.

Connect the battery cable.

Turn the ignition switch on.

Monitor the scan tool data relative to this circuit and wiggle test the wiring and connectors:

- Look for the data to change or for the DTC to reset during the wiggle test.

Are any ACTIVE DTCs present?

Yes >> • Select the appropriate diagnostic procedure from the DTC list in this section (See Restraints Control Module DTC List in Section 14 Restraints).

No >> • The system is now operating properly.
• Reassemble the vehicle and road test to verify the customers complaint is repaired.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



DIAGNOSIS & TESTING

B1042: Battery

- **When Monitored:** The Restraints Control Module (RCM) monitors the fused ignition relay output circuit voltage.
- **Set Condition:** If the RCM detects that the fused ignition relay output voltage is less than about 9 volts.

NOTE :

Troubleshoot any Engine Control Module (ECM) charging/cranking DTCs before proceeding.

NOTE :

The following tools are required to perform the following test:

- X-431 Scan Tool
- Appropriate Airbag Special Load Tool
- Digital Multimeter

Step 1.

Connect the X-431 scan tool to the Data Link Connector (DLC) - use the most current software available.

Turn the ignition switch on, with the scan tool, view and erase stored DTCs in the RCM.

Turn the ignition switch off, and wait 30 seconds, then turn the ignition switch on.

Wait one minute, and with the scan tool, view active DTCs in the RCM.

Is DTC B1042 present?

Yes >> • Go to the next step.

No >> • Go to step 6.

Step 2.

Turn the ignition switch off.

Disconnect the negative battery cable.

WARNING!

To avoid serious or fatal injury, turn the ignition switch off, disconnect the negative battery cable and wait two minutes before proceeding.

Disconnect the RCM electrical connector J-001.

NOTE :

Check connectors - Clean and repair as necessary.

Connect the negative battery cable.

Turn the ignition switch on.

WARNING!

To avoid serious or fatal injury, connect the battery, then turn the ignition switch on.

Measure the voltage between the fused ignition relay output circuit, RCM electrical connector J-001 terminal 25 and ground.

Is the voltage above 9.0 volts?

Yes >> • Replace the RCM (See Restraints Control Module Removal & Installation in Section 14 Restraints).

No >> • Go to the next step.

DIAGNOSIS & TESTING

Step 3.

Turn the ignition switch off, Disconnect the battery cable, disconnect the front fuse and relay box connectors.

NOTE :

Check connectors - Clean and repair as necessary.

Connect the battery cable.

Turn the ignition switch on.

Measure the voltage between the fused ignition relay output circuit and ground at the front fuse and relay box electrical connector terminal L9.

Is the voltage above 9.0 volts?

- Yes** >> • Repair or replace the fused ignition relay output circuit for a open or high resistance between the front fuse and relay box connector B-018, terminal L9 and RCM connector J-001, terminal 25.
- No** >> • Verify the ignition relay output voltage fuse FB4 (5A) is OK. If OK, go to the next step. If not OK, repair the RCM power supply circuit.

Step 4.

Turn the ignition switch off.

Disconnect the ignition switch relay.

Install a known good relay and recheck the voltage between ground and the fused ignition relay output circuit at the front fuse and relay box electrical connector terminal L9.

Is the test result normal?

- Yes** >> • Replace the ignition switch relay.

- No** >> • Go to the next step.

Step 5.

Disconnect the ignition switch relay.

Connect a jumper wire between the ignition switch relay pin 30 and pin 87.

Check the voltage between ground and the fused ignition relay output circuit at the front fuse and relay box electrical connector terminal L9.

Is the test result normal?

- Yes** >> • Check and Repair the ignition relay switch control supply circuit or the ground circuit.
• If the ignition relay switch control supply circuit or the ground circuit is OK, replace the front fuse and relay box.
- No** >> • Repair the front fuse and relay box or the supply circuit.

Step 6.

NOTE :

Diagnose and repair all active codes before diagnosing stored codes (See Restraints Control Module DTC List in Section 14 Restraints).

With the scan tool, record and erase all RCM DTCs.

Turn the ignition switch off.

Disconnect the battery cable.

Using the electrical schematic as a guide, inspect the following:

- Inspect the wiring and connectors of the related airbag system wiring and connectors.
- Look for any chafed, pierced, pinched, or partially broken wires.
- Look for broken, bent, pushed out or corroded terminals.

DIAGNOSIS & TESTING

- Verify that there is good pin to terminal contact in the related connectors.

Were any problems found?

Yes >> • Replace as necessary.

No >> • Go to the next step.

Step 7.

Reconnect all disconnected components and harness connectors.

Connect the battery cable.

Turn the ignition switch on.

Monitor the scan tool data relative to this circuit and wiggle test the wiring and connectors:

- Look for the data to change or for the DTC to reset during the wiggle test.

Are any ACTIVE DTCs present?

Yes >> • Select the appropriate diagnostic procedure from the DTC list in this section (See Restraints Control Module DTC List in Section 14 Restraints).

No >> • The system is now operating properly.
• Reassemble the vehicle and road test to verify the customers complaint is repaired.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



ON-VEHICLE SERVICE

Airbag System Disarming Procedure

Airbag System Disarming Procedure

WARNING!

The steering column contains the driver's airbag. The airbag system is a sensitive, complex electro-mechanical unit. Before attempting to diagnose, remove or install the airbag system components, you must first disconnect and isolate the negative battery (ground) cable. Then wait two minutes for the system capacitor to discharge. Failure to do so could result in accidental deployment of the airbag and possible personal injury. The fasteners, screws, and bolts, originally used for the airbag components, have special coatings and are specifically designed for the airbag system. They must never be replaced with any substitutes. Anytime a new fastener is needed, replace with the correct fasteners provided in the service package or fasteners listed in the parts books.

1. Turn the ignition switch off.
2. Disconnect and isolate the negative battery cable.
3. Wait two minutes for the system capacitor to discharge.
4. The airbag system can now be serviced safely.

Driver Airbag

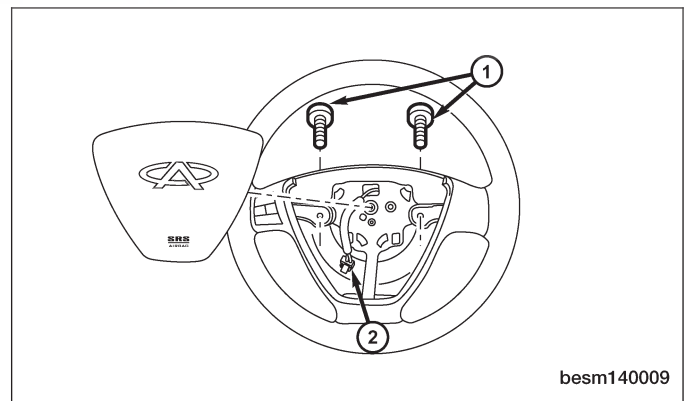
Removal & Installation

1. Turn the ignition switch off.
2. Disconnect the negative battery cable.

WARNING!

Wait two minutes for the airbag system reserve capacitor to discharge before beginning any airbag system or component service. Failure to do so may result in accidental airbag development, serious or fatal injury (See Airbag System Disarming Procedure in Section 14 Restraints).

3. Loosen the two driver airbag retaining bolts (1).
(Tighten: Driver airbag retaining bolts to 10 N·m)
4. Pull the driver airbag rearward and disconnect the airbag squib electrical connector (2).
5. Remove the driver airbag from the vehicle.
6. Installation is in the reverse order of removal.



Passenger Airbag

Removal & Installation

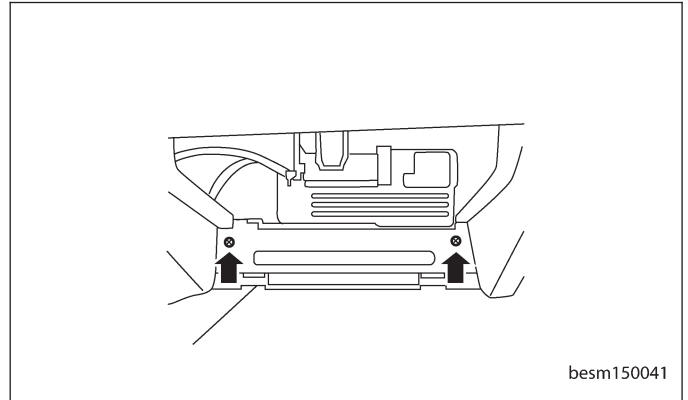
1. Turn the ignition switch off.
2. Disconnect the negative battery cable.

ON-VEHICLE SERVICE

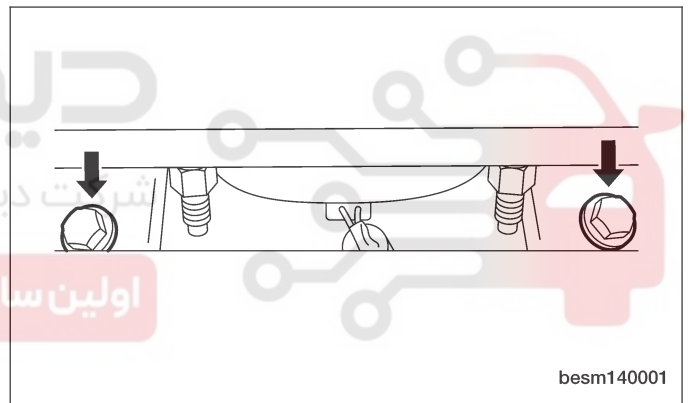
WARNING!

Wait two minutes for the airbag system reserve capacitor to discharge before beginning any airbag system or component service. Failure to do so may result in accidental airbag development, serious or fatal injury (See Airbag System Disarming Procedure in Section 14 Restraints).

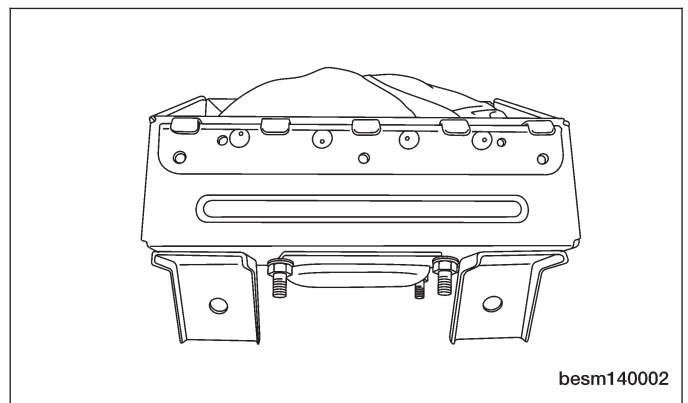
3. Remove the glove box bolts.



4. Remove the passenger airbag cover.
5. Disconnect the passenger airbag squib electrical connector.
6. Remove the two passenger airbag retaining bolts to the instrument panel.
(Tighten: Passenger airbag retaining bolts to 10 N·m)



7. Remove the passenger airbag from the vehicle.



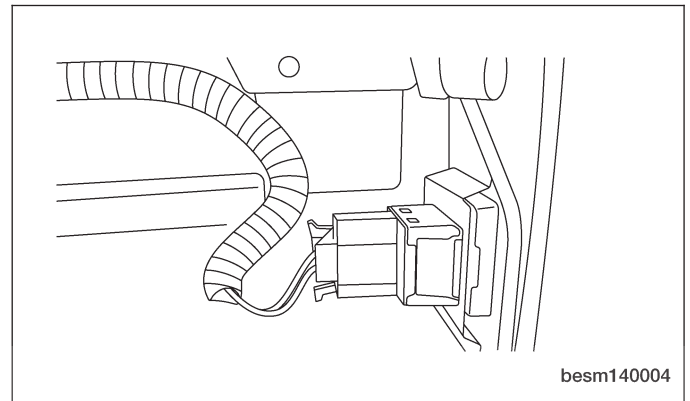
8. Installation is in the reverse order of removal.

ON-VEHICLE SERVICE

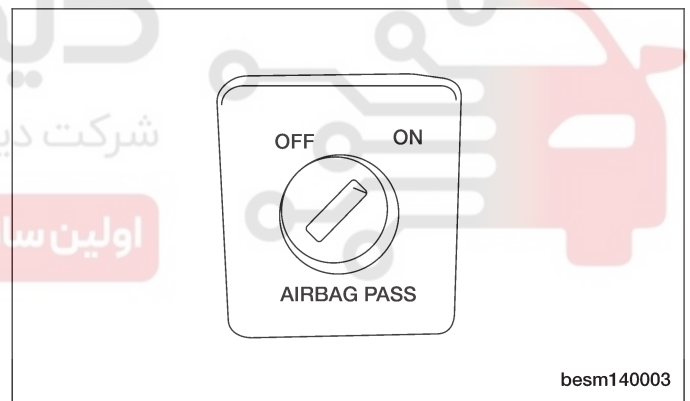
Passenger Airbag Switch

Removal & Installation

1. Turn the ignition switch off.
2. Disconnect the negative battery cable.
3. Remove the right trim cover.
4. Remove the switch cover.
5. Remove the glove box (See Glove Box Removal & Installation in Section 15 Body & Accessories).
6. Disconnect the front passenger airbag switch electrical connector.



7. Remove the front passenger airbag switch.



8. Installation is in the reserve order of removal.

Restraints Control Module

Removal & Installation

1. Turn the ignition switch off.
2. Disconnect the negative battery cable.

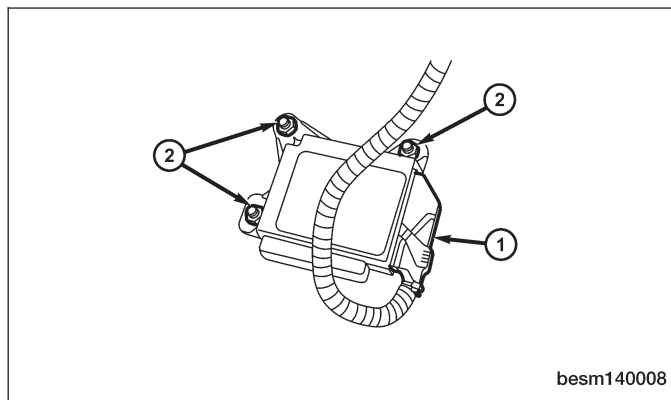
WARNING!

Wait two minutes for the airbag system reserve capacitor to discharge before beginning any airbag system or component service. Failure to do so may result in accidental airbag development, serious or fatal injury (See Airbag System Disarming Procedure in Section 14 Restraints).

3. Remove the center console (See Center Console Removal & Installation in Section 15 Body & Accessories).

ON-VEHICLE SERVICE

4. Disconnect the Restraints Control Module (RCM) electrical connector (1).
5. Remove the RCM retaining bolts (2).
(Tighten: RCM retaining bolts to 10 N·m)
6. Remove the RCM from the vehicle.
7. Installation is in the reverse order of removal.



دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

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SEATBELT SYSTEM

GENERAL INFORMATION	14-28	Seatbelt Slider Track	14-29
Description	14-28	Removal & Installation	14-29
Operation	14-28	Rear Seatbelt	14-29
Specifications	14-28	Removal & Installation	14-29
Special Tools	14-28		
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Front Seatbelt and Retractor	14-29		
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GENERAL INFORMATION

Description

The left and right seat belt buckles are bolted to the base frame of the seat. The seat belt buckles are a typical buckle design with a release button on the top to free the seat belt.

Operation

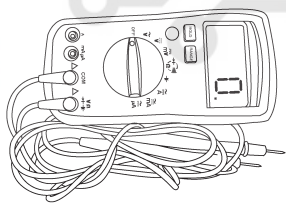
The primary passenger restraints are the seat belts. Seat belts are referred to as an active restraint because the vehicle occupants are required to physically fasten and properly adjust these restraints in order to benefit from them. The passive restraints are referred to as a supplemental restraint system because they were designed and are intended to enhance the protection for the occupants of the vehicle only when used in conjunction with the seat belts.

Specifications

Torque Specifications

DESCRIPTION	TORQUE (N·m)
Front Seatbelt Buckle Retaining Bolt	50
Front Seatbelt Retractor Lower Retaining Bolt	50
Front Seatbelt Upper Turning Loop Retaining Bolt	50
Rear Center Seatbelt Retaining Bolts	50
Rear Seatbelt Retractor Bolts	50

Special Tools

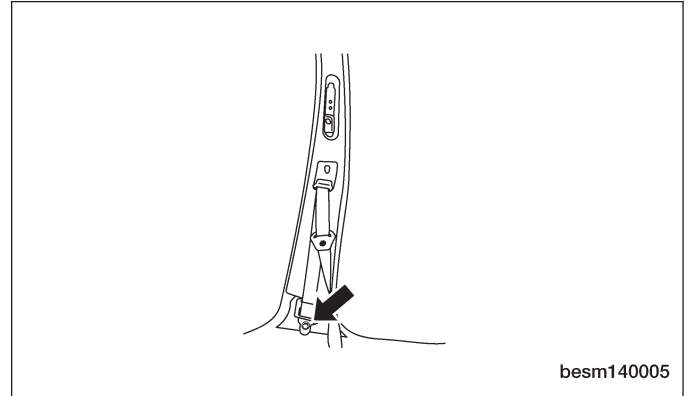
شرکت دیجیتال خودرو سامانه (مسئولیت محدود) اولین سامانه دیجیتال تعمیرکاران خودرو در ایران Digital Multimeter Fluke 15B & 17B	 besm030002
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ON-VEHICLE SERVICE

Front Seatbelt and Retractor

Removal & Installation

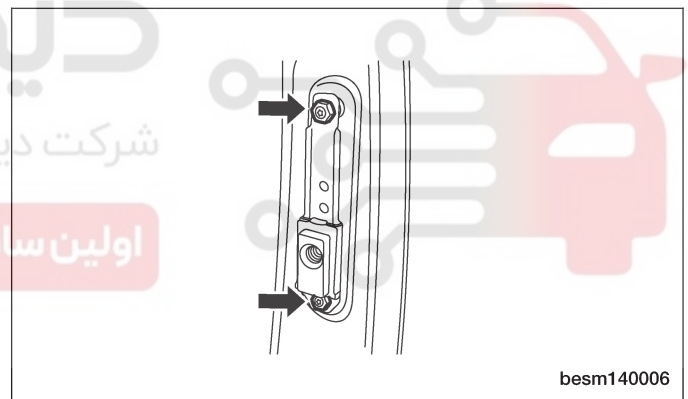
1. Turn the ignition switch off.
2. Disconnect the negative battery cable.
3. Remove the seatbelt cover.
4. Remove the "B" pillar lower trim panel.
5. Remove the front seatbelt retaining bolts.
(Tighten: Front seatbelt retaining bolts to 50 N·m)
6. Remove the front seatbelt and retractor.
7. Installation is in the reverse order of removal.



Seatbelt Slider Track

Removal & Installation

1. Remove the "B" pillar upper trim panel.
2. Remove the two bolts and then remove the seatbelt slider track.
(Tighten: Seatbelt slider track bolts to 50 N·m)
3. Installation is in the reverse order of removal.



Rear Seatbelt

Removal & Installation

1. Remove the rear lower seat and the rear seat back.
2. Remove the rear seatbelt mounting bolts.
(Tighten: Rear seatbelt mounting bolts to 50 N·m)
3. Installation is in the reverse order of removal.

