

SUPPLEMENTAL RESTRAINT SYSTEM

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B0020-11	30	B1215-00	84
B0020-12	30	B1230-79	84
B0020-1A	30	B1240-00	84
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GENERAL INFORMATION

Description

This vehicle adopts the occupant restraint system, which includes active and supplemental types. Active restraint system requires occupants to take some actions, such as fastening seat belt; while supplemental restraint system requires no actions from occupants.

Active restraint system:

- Driver seat belt and front passenger seat belt
- Rear seat belt

Supplemental restraint system:

- Airbag system
- Driver seat belt pretensioner and front passenger seat belt pretensioner

Airbag system consists of following components:

- Driver airbag

Driver airbag is installed in the steering wheel, which will inflate to protect driver in the event of a severe collision.

- Front passenger airbag

Front passenger airbag is installed at the upper right side of instrument panel, which will inflate to protect front passenger in the event of a severe collision.

- Front side airbag (if equipped)

Front side airbag is installed in both sides of front seat, which will mitigate injury caused by side impact, and prevent the direct contact between torso and door panel, thus protecting front passenger safety effectively.

- Curtain shield airbag (if equipped)

Curtain shield airbag is installed in both sides of roof, which will inflate to protect occupants in the event of a severe collision.

- SRS control module assembly

SRS control module assembly has a built-in collision sensor, which is installed on the body floor of auxiliary fascia console assembly. It controls the inflation of airbag so as to protect driver and other occupants in the event of a severe collision.

- Spiral cable

It is used to connect driver airbag while ensuring that steering wheel has enough steering angle.

- Airbag malfunction indicator

After engine switch is turned to ON, if malfunction indicator goes off after coming on for approximately 6 seconds, it means that supplemental restraint system operates normally. If malfunction indicator does not come on, remains on or flashes, it means that supplemental restraint system has a problem, and it is necessary to perform tests and repairs.

- Wire harness

Generally, it is yellow and used to connect each element of supplemental restraint system. Connector has a safety mechanism.

Airbag system function:

- Airbag must work together with seat belt, and it is not a substitute for seat belt. Driver and passengers should always fasten their seat belts when driving, and adjust the belts to a proper position according to their size.
- Minor collision will not activate airbag system. Airbags will quickly inflate to protect driver and front passenger only when severe collision occurs.

Seat belt pretensioner consists of following components:

- Driver seat belt pretensioner

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Driver seat belt pretensioner is located on driver seat belt retractor, which will retract driver seat belt to protect driver in the event of a severe collision.

- Front passenger seat belt pretensioner

Front passenger seat belt pretensioner is located on front passenger seat belt retractor, which will retract front passenger seat belt to protect front passenger in the event of a severe collision.

Seat belt pretensioner function:

- At the moment of collision, pretensioner retracts seat belt before occupant moves forward, and restrains occupant onto the seat, then locks seat belt to prevent occupant from leaning forward, thus protecting occupant safety.
- Seat belt pretensioner works with airbag system. Once a frontal collision impact higher than specified value is detected, seat belt with pretensioner will work together with airbag system to protect occupant safety.

Left side collision sensor (if equipped)

- The sensor transmits collision signals from left side to SRS module to control the airbag to inflate quickly, thus protecting persons in vehicle.

Right side collision sensor (if equipped)

- The sensor transmits collision signals from right side to SRS module to control the airbag to inflate quickly, thus protecting persons in vehicle.

Operation

Supplemental restraint system can improve the safety of occupants only when used in combination with seat belts. Occupants must fasten their seat belts in order to gain full protection from supplemental restraint system.

Supplemental restraint system circuit is continuously monitored and controlled by SRS control module assembly. Airbag indicator on instrument cluster illuminates for approximately 6 seconds for a test each time engine switch is turned ON. Airbag indicator goes off after the test is completed. If indicator comes on at any time other than test time, it indicates that there is a problem in supplemental restraint system circuit.

Whether airbag deploys or not depends on the angle and severity of an impact. When vehicle is subjected to a severe collision, microprocessor in airbag module of supplemental restraint system sends signals to corresponding inflator units of airbags to deploy the airbags quickly, thus protecting occupants.

CAUTION

- Before removing airbag system components, disconnect the negative battery cable and wait for at least 90 seconds. Before servicing steering system, remove the driver airbag and spiral cable for safekeeping.
- If vehicle has been involved in a minor collision but airbags do not deploy, always inspect airbag components.
- If airbags may be touched during servicing, remove the airbags as necessary for safekeeping before servicing.
- Never use airbag components from another vehicle. When replacing airbag components, replace with new ones.
- If an airbag component is dropped or if there are any cracks, dents or other defects in case, bracket or connector, replace the airbag component with a new one.
- Information labels are attached to the periphery of airbag components. Always follow the cautions and instructions on labels.

⚠ WARNING

- Never expose airbag components directly to hot air or open flames.
- Never attempt to disassemble or repair airbag components.
- Removed airbags should be kept properly. Never put other objects on them. If triggered accidentally, it may cause personal injury.
- As a disposable component, airbag must be replaced after deployment and avoid reusing it.
- Always dispose of vehicle together with airbags, or airbags may be triggered accidentally to cause personal injury.

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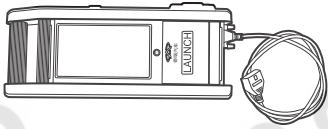
Specifications

Torque Specifications

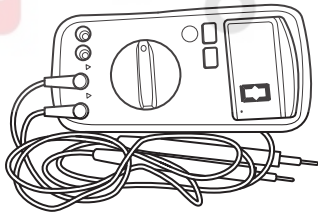
Description	Torque (N·m)
Coupling Bolt Between Front Passenger Airbag Assembly and Instrument Panel Crossmember Assembly	23 ± 2
Coupling Bolt Between Curtain Shield Airbag Assembly and Body	10 ± 1
Coupling Bolt Between SRS Control Module Assembly and Body	9 ± 1

Tools

Special Tool

X-431 3G Diagnostic Tester	 RCH0000001
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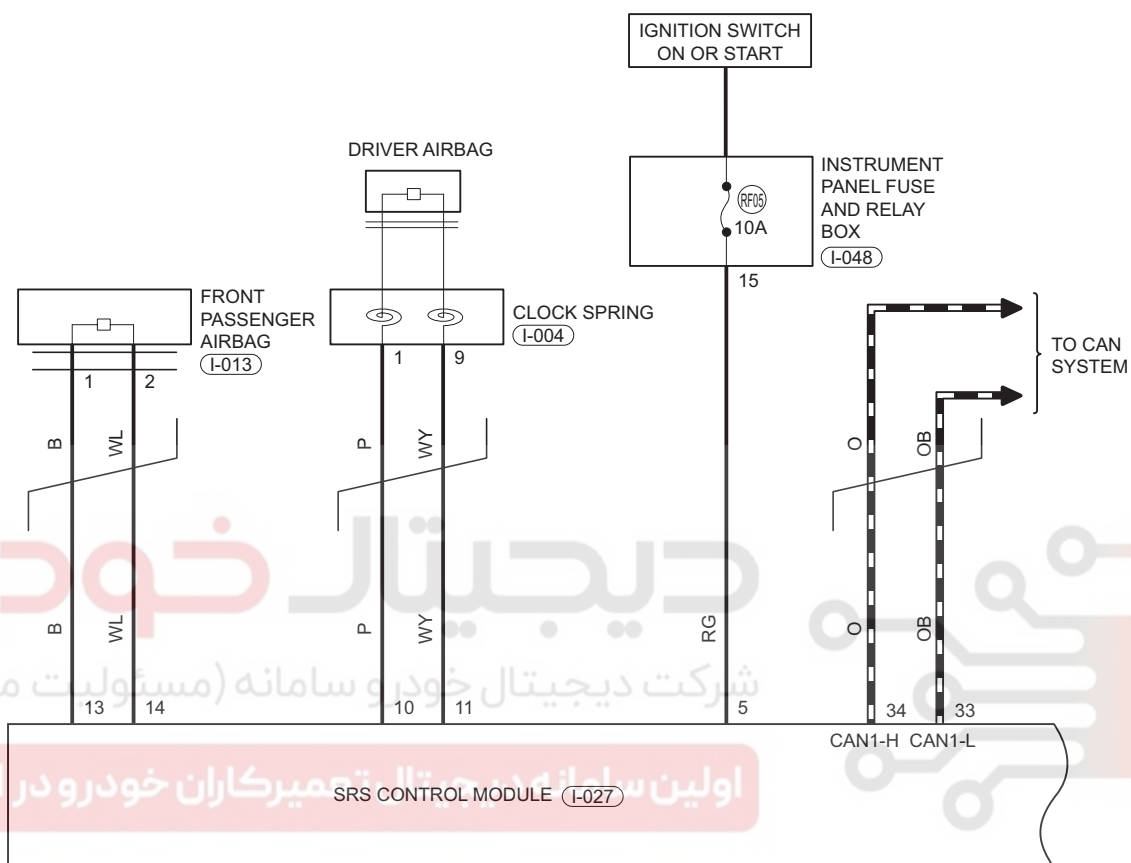
General Tool

Digital Multimeter	 RCH0000002
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Circuit Diagram

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Supplemental Restraint System (Page 1 of 3)



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

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8	7	6	5	4	3	2	1
16	15	14	13	12	11	10	9

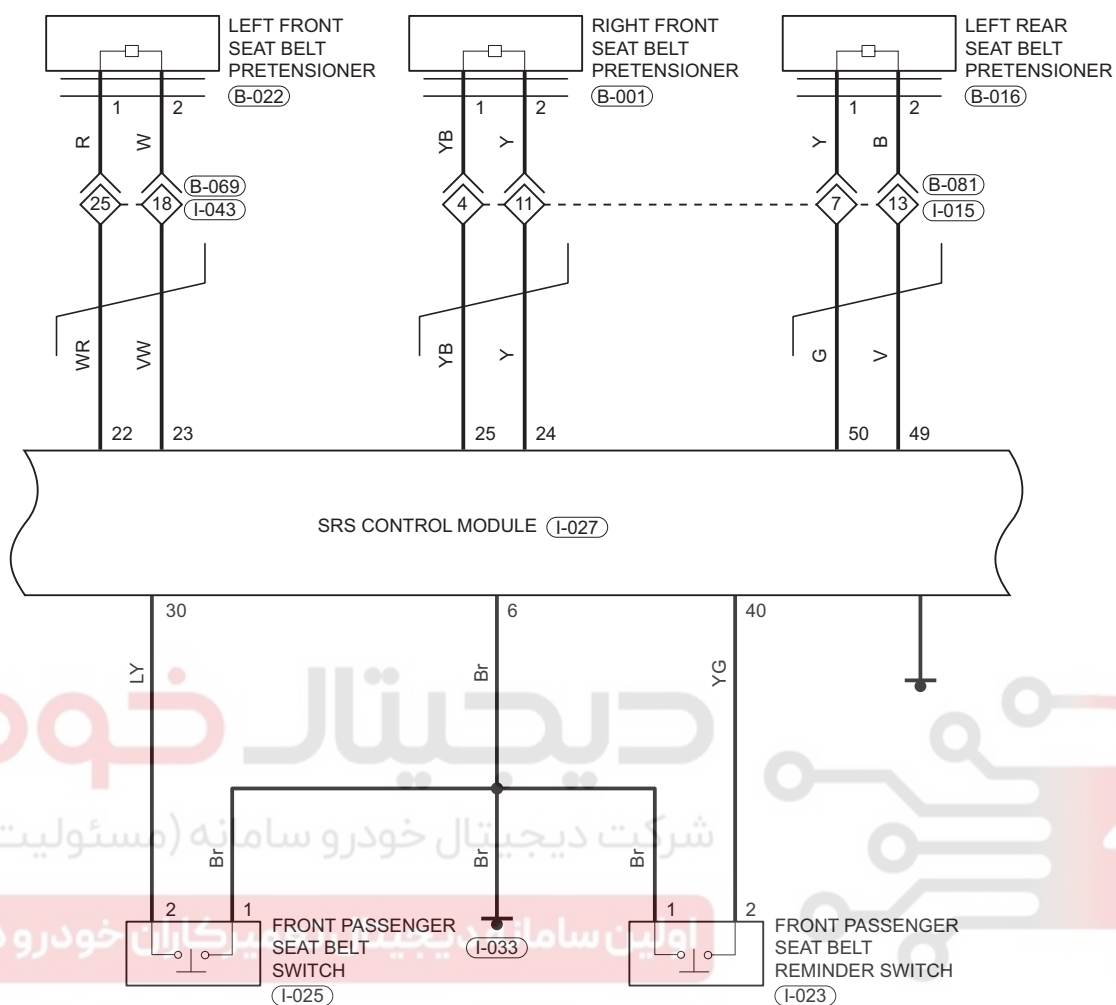
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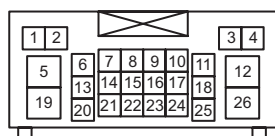
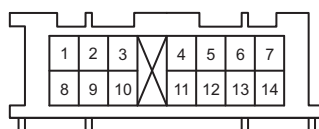
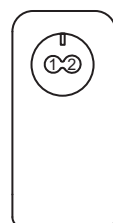
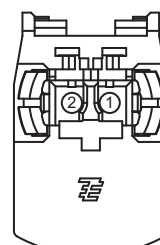
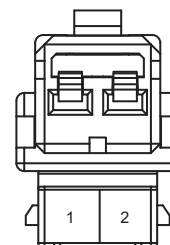
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Supplemental Restraint System (Page 2 of 3)



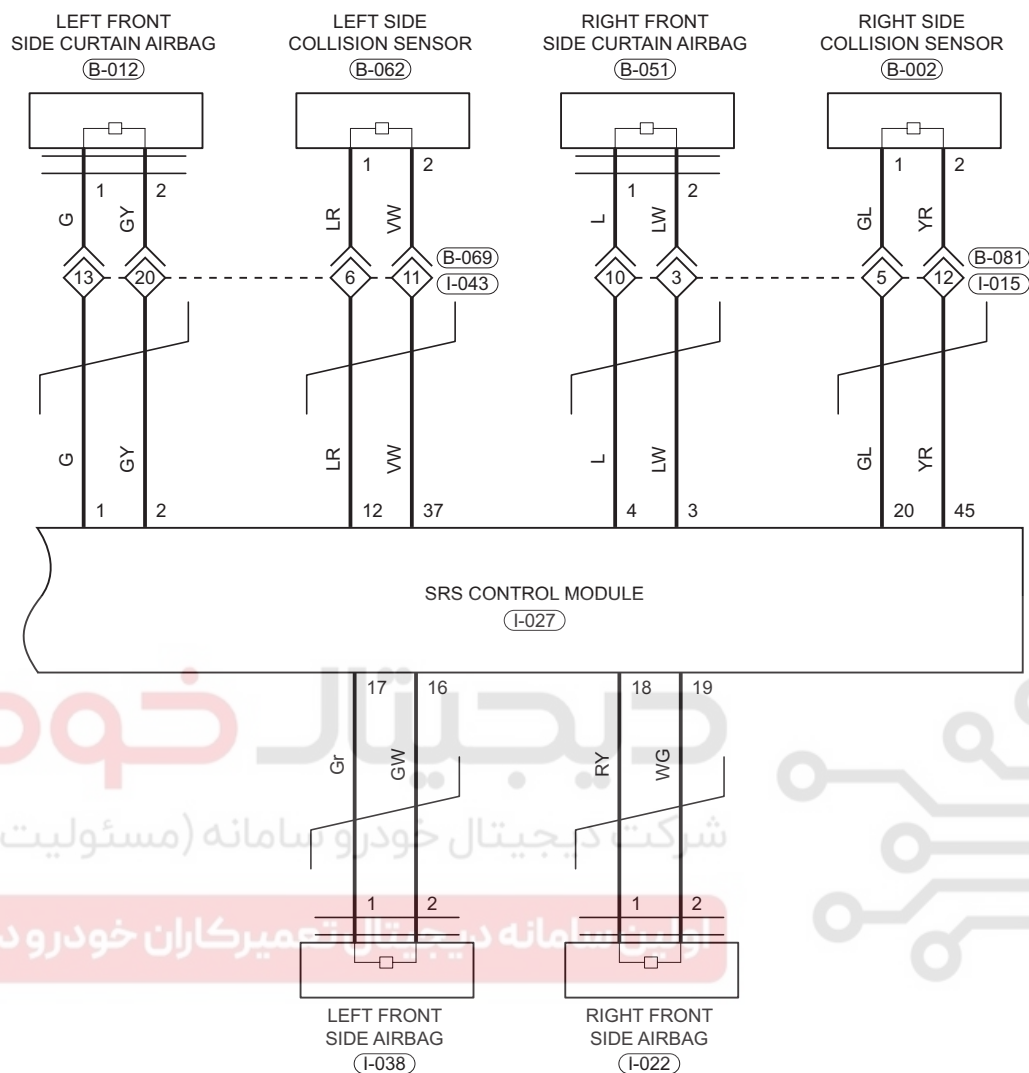
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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(B-001) Y(B-016)
Y(I-023)
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DIAGNOSIS & TESTING

SRS Control Module Assembly Terminal List

Terminal No.	Terminal Definition	Terminal No.	Terminal Definition
1	Left Side Curtain Shield Airbag+	26	-
2	Left Side Curtain Shield Airbag-	27	-
3	Right Side Curtain Shield Airbag-	28	-
4	Right Side Curtain Shield Airbag+	29	-
5	KL15-IGN/Power Supply	30	Passenger Seat Belt Buckle
6	-	31	-
7	-	32	-
8	-	33	CAN-L
9	-	34	CAN-H
10	Driver Airbag+	35	-
11	Driver Airbag-	36	-
12	Left Acceleration Sensor+	37	Left Acceleration Sensor-
13	Passenger Airbag+	38	-
14	Passenger Airbag-	39	-
15	-	40	Passenger Detection
16	Left Side Airbag-	41	-
17	Left Side Airbag+	42	-
18	Right Side Airbag+	43	-
19	Right Side Airbag-	44	-
20	Right Acceleration Sensor+	45	Right Acceleration Sensor-
21	-	46	-
22	Driver Seat Belt Pretensioner+	47	-
23	Driver Seat Belt Pretensioner-	48	-
24	Passenger Seat Belt Pretensioner-	49	Rear Left Seat Belt Pretensioner-
25	Passenger Seat Belt Pretensioner+	50	Rear Left Seat Belt Pretensioner+

45

DTC Confirmation Procedure

Confirm that battery voltage is over 12 V before performing following procedures.

- Turn engine switch to OFF.
- Connect X-431 3G diagnostic tester (the latest software) to Data Link Connector (DLC).
- Turn engine switch to ON.
- Use X-431 3G diagnostic tester to record and clear DTCs stored in supplemental restraint system.
- Turn engine switch to OFF and wait for a few seconds.
- Turn engine switch to ON, and then select Read Code.
- If DTC is detected, malfunction indicated by DTC is current. Go to diagnosis procedure - Step 1.
- If no DTC is detected, malfunction indicated by DTC is intermittent.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Monitor X-431 3G diagnostic tester (the latest software) data that is related to this circuit.
- Wiggle related wire harnesses and connectors and observe if signal in related circuit is interrupted.
- If possible, try to duplicate the conditions under which DTC was set.
- Look for data that has changed or DTC to reset during wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect airbag components and mounting areas for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and ground parts related to DTC.
- If multiple trouble codes were set, refer to circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to any Technical Bulletin that may apply to the malfunction.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) can increase resistance which will change the way in which a circuit works.

Electrical control circuits are very sensitive to proper grounding. A loose or corroded ground can affect the control circuit. Operations to check the ground points are as follows:

1. Remove the ground nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in good condition.
4. Reinstall the ground nut securely.
5. Check if add-on accessories interfere with ground circuit.
6. If several wire harnesses are crimped into one ground eyelet terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:

Use following procedures to troubleshoot the Supplemental Restraint System (SRS).

1	Vehicle brought to workshop
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NEXT

2	Check battery voltage
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Standard voltage: 11 to 14 V

If voltage is below 11 V, recharge or replace battery before proceeding to next step.

NEXT

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3

Check SRS warning light

NEXT

4

Check for DTCs (current DTC and history DTC)

DTC
occurs

For current DTC, go to step 5

No
DTC

For history DTC, go to step 6

5

Diagnostic Trouble Code (DTC) Chart

NEXT

6

Circuit inspection

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

⚠ WARNING

- DO NOT release the activation prevention mechanism, unless specially directed by troubleshooting procedure.
- During circuit troubleshooting for airbag system, make sure to cut off battery power supply, and wait for at least 90 seconds to discharge the system condenser.
- When performing circuit diagnosis and test, always refer to circuit diagram for specific circuit and component information.

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NEXT

7

Repair

NEXT

8

Clear DTCs (current DTC and history DTC)

NEXT

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9	Check DTCs (current DTC and history DTC)
---	--

DTC occurs	Go to step 5
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No DTC	Go to next step
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10	Confirmation test
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NEXT

11	End
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Diagnostic Trouble Code (DTC) Chart

Failure Type Byte (Hex)	Description
11	Circuit short to ground
13	Circuit open
12	Circuit short to battery
14	Circuit short to ground or open
15	Circuit short to battery or open
16	Circuit voltage below threshold
17	Circuit voltage above threshold
1A	Circuit resistance below threshold
1B	Circuit resistance above threshold
1F	Circuit intermittent
47	Watchdog/safety μ C failure
48	Supervision software failure
71	Actuator stuck
79	Mechanical linkage failure
86	Signal invalid
87	Missing message
91	Parametric
92	Performance or incorrect operation
95	Incorrect assembly
96	Component Internal failures

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DTC	DTC Definition
B0001-11	Driver Frontal Airbag Deployment Control
B0001-12	Driver Frontal Airbag Deployment Control
B0001-1A	Driver Frontal Airbag Deployment Control
B0001-1B	Driver Frontal Airbag Deployment Control
B0010-11	Passenger Frontal Airbag Deployment Control
B0010-12	Passenger Frontal Airbag Deployment Control
B0010-1A	Passenger Frontal Airbag Deployment Control
B0010-1B	Passenger Frontal Airbag Deployment Control
B0020-11	Left Side Airbag Deployment Control
B0020-12	Left Side Airbag Deployment Control
B0020-1A	Left Side Airbag Deployment Control
B0020-1B	Left Side Airbag Deployment Control
B0028-11	Right Side Airbag Deployment Control
B0028-12	Right Side Airbag Deployment Control
B0028-1A	Right Side Airbag Deployment Control
B0028-1B	Right Side Airbag Deployment Control
B0021-11	Left Curtain Deployment Control
B0021-12	Left Curtain Deployment Control
B0021-1A	Left Curtain Deployment Control
B0021-1B	Left Curtain Deployment Control
B0029-11	Right Curtain Deployment Control
B0029-12	Right Curtain Deployment Control
B0029-1A	Right Curtain Deployment Control
B0029-1B	Right Curtain Deployment Control
B1285-11	Front Row Left Seatbelt Pretensioner Deployment Control
B1285-12	Front Row Left Seatbelt Pretensioner Deployment Control
B1285-1A	Front Row Left Seatbelt Pretensioner Deployment Control
B1285-1B	Front Row Left Seatbelt Pretensioner Deployment Control
B1286-11	Front Row Right Seatbelt Pretensioner Deployment Control
B1286-12	Front Row Right Seatbelt Pretensioner Deployment Control
B1286-1A	Front Row Right Seatbelt Pretensioner Deployment Control
B1286-1B	Front Row Right Seatbelt Pretensioner Deployment Control
B0073-11	Second Row Left Seatbelt Pretensioner Deployment Control
B0073-12	Second Row Left Seatbelt Pretensioner Deployment Control
B0073-1A	Second Row Left Seatbelt Pretensioner Deployment Control
B0073-1B	Second Row Left Seatbelt Pretensioner Deployment Control
B1217-95	Squib Invalid Configuration (Pin 31, Pin 32)

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DTC	DTC Definition
B121D-95	Squib Invalid Configuration (Pin 16, Pin 17)
B121E-95	Squib Invalid Configuration (Pin 18, Pin 19)
B00C7-95	Passenger Presence Detection Switch
B1233-95	Passenger Buckle Switch (Config Data Invalid)
B0091-12	Left Side Restraints Sensor
B0091-13	Left Side Restraints Sensor
B0091-16	Left Side Restraints Sensor
B0091-96	Left Side Restraints Sensor
B0091-91	Left Side Restraints Sensor
B0091-86	Left Side Restraints Sensor
B0091-95	Left Side Restraints Sensor
B0096-12	Right Side Restraints Sensor
B0096-13	Right Side Restraints Sensor
B0096-16	Right Side Restraints Sensor
B0096-96	Right Side Restraints Sensor
B0096-91	Right Side Restraints Sensor
B0096-86	Right Side Restraints Sensor
B0096-95	Right Side Restraints Sensor
B1250-16	Power Supply
B1250-17	Power Supply
B1215-00	Squib Cross Coupling Error
B1230-79	Satellite Cross Link
B1240-00	ICM Airbag Lamp Failed
U0140- 87	Lost Communication with Body Control Module
U0129-87	Lost Communication with Brake System Control Module
B120F-48	This Fault is Invalid and Shall Not Occurred
B1251-00	ECU Internal Error
B1271-47	Crash Belt Pretensioners
B1272-47	Crash Left Side
B1273-47	Crash Right Side
B1216-47	Crash Front
B127F-47	Crash Recording Locked

DTC	B1250-16	Power Supply - Circuit Voltage Below Threshold
DTC	B1250-17	Power Supply - Circuit Voltage Above Threshold

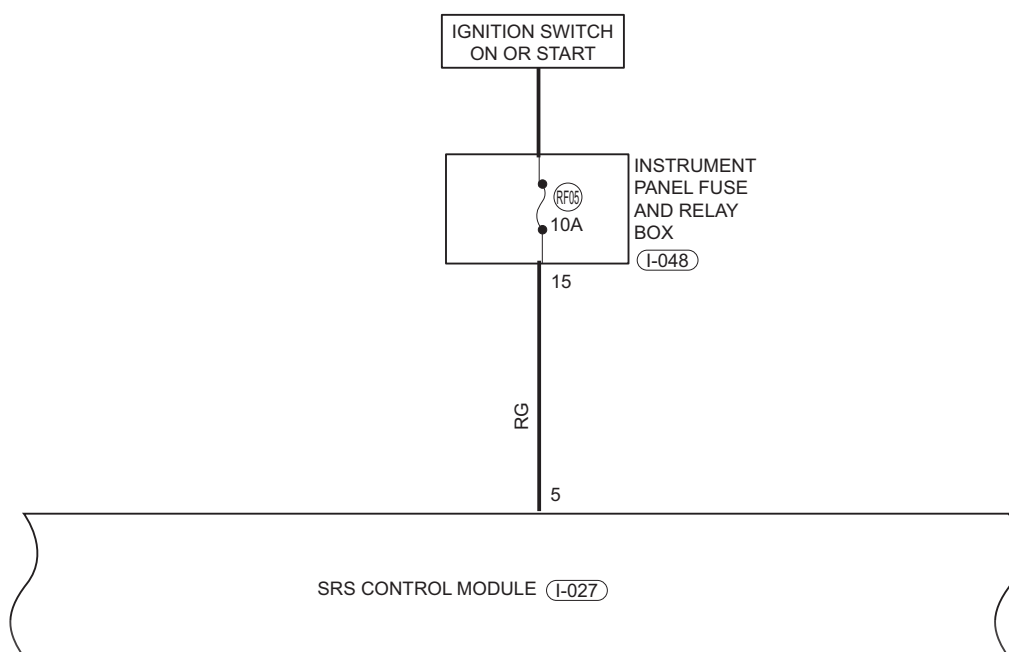
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DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B1250-16	Power Supply	Voltage is less than 7.2 V	Malfunction indicator ON	Excessive low vehicle power supply voltage
B1250-17		Voltage is more than 19.5 V		Excessive high vehicle power supply voltage

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1	Check fuse
----------	-------------------

Use circuit diagram as a guide to perform the following procedures:

- a. Check continuity of fuse RF05 (10A) in instrument panel fuse and relay box with a multimeter.

NG	Replace fuse
OK	Go to next step

NEXT

2	Check system voltage
----------	-----------------------------

Use circuit diagram as a guide to perform the following procedures:

- a. Start engine, and use voltage band of multimeter to check if battery voltage is normal.

Standard Voltage

Multimeter Connection	Condition	Standard Voltage
Battery positive (+) - Battery negative (-)	Engine switch ON	13.8 V - 14 V

NG	Check charging system of battery
OK	End

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DTC	B0001-11	Driver Frontal Airbag Deployment Control - Circuit Short to Ground
DTC	B0001-12	Driver Frontal Airbag Deployment Control - Circuit Short to Battery
DTC	B0001-1A	Driver Frontal Airbag Deployment Control - Circuit Resistance Below Threshold
DTC	B0001-1B	Driver Frontal Airbag Deployment Control - Circuit Resistance Above Threshold

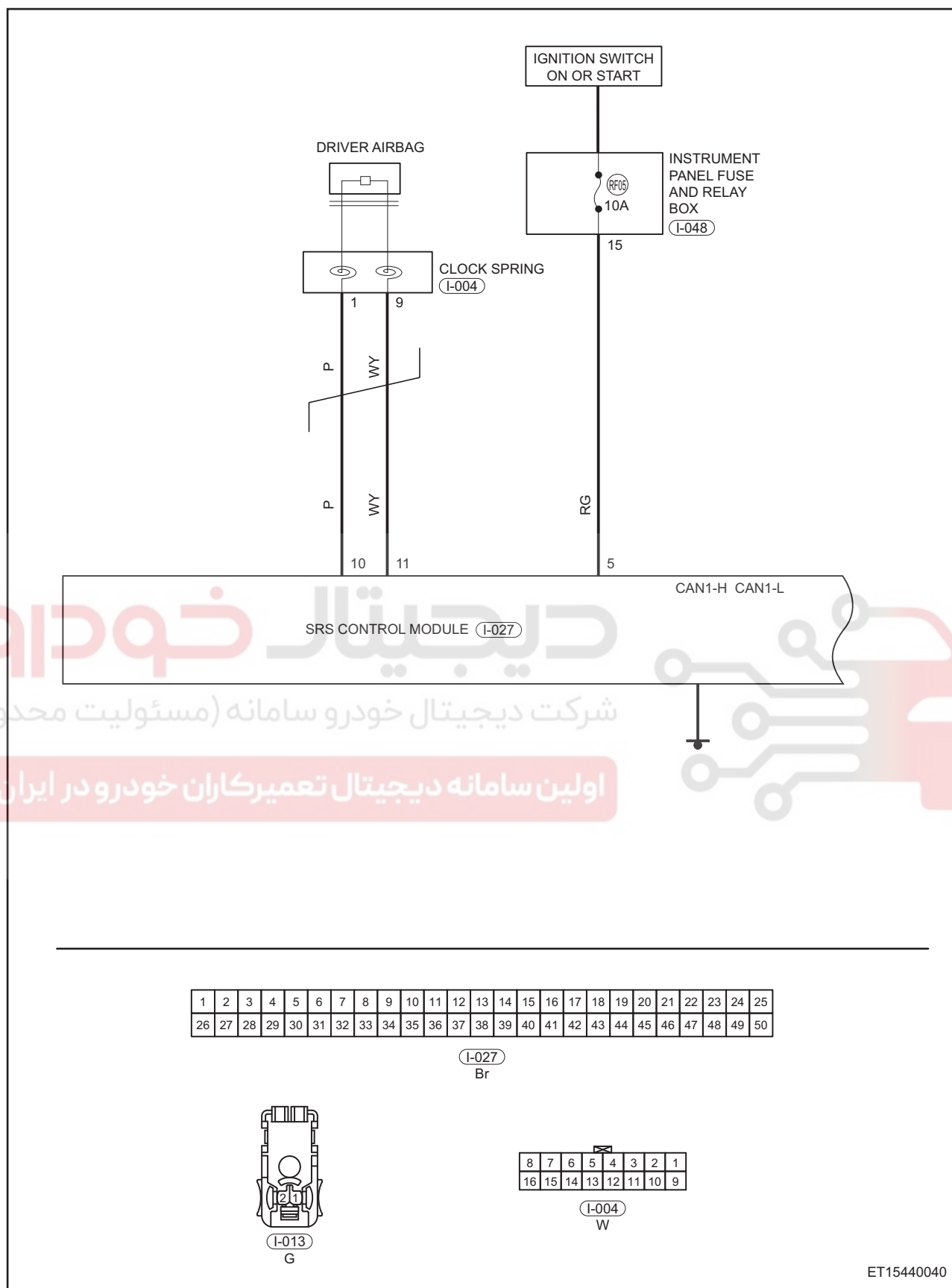
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DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0001-11	Driver Frontal Airbag Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Driver frontal airbag ignition circuit short to ground, short-circuit current detected by controller
B0001-12		Leakage resistance is less than 1.8 k Ω		Driver frontal airbag ignition circuit short to power supply, short-circuit current detected by controller
B0001-1A		Airbag resistance is less than 1.1 Ω		Driver frontal airbag ignition circuit resistance below set threshold
B0001-1B		Airbag resistance is more than 5.0 Ω		Driver frontal airbag ignition circuit resistance above set threshold

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1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and driver frontal airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (10) and ground, and continuity between I-027 (11) and ground separately.

Specified Condition

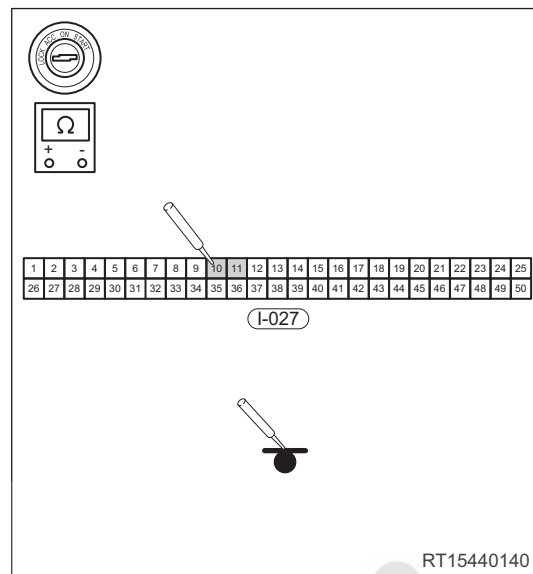
Multimeter Connection	Condition	Specified Condition
I-027 (10) - Ground	Engine switch OFF	No continuity
I-027 (11) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



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NEXT**2 Check for a short circuit to power supply in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and driver frontal airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (10) and battery positive (+), and continuity between I-027 (11) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (10) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (11) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

45 - SUPPLEMENTAL RESTRAINT SYSTEM

OK

Go to next step

NEXT

3

Check if circuit resistance is below or above threshold

Use circuit diagram as a guide to perform the following procedures:

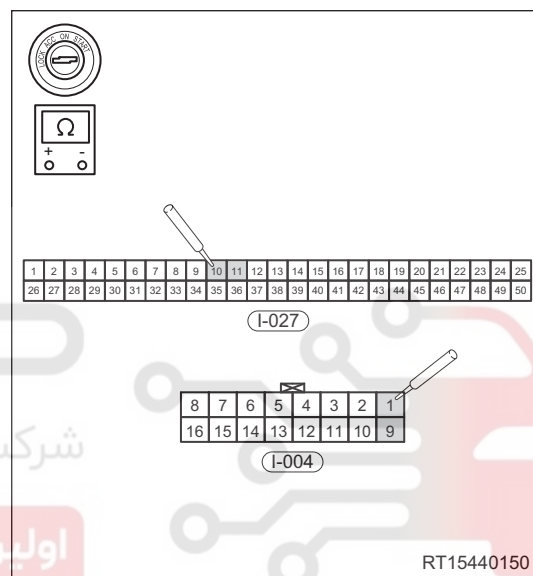
- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace driver frontal airbag with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in driver frontal airbag resistance, and a further inspection is needed.
- Disconnect spiral cable connector I-004 and airbag module connector I-027 separately.
- Using ohm band of multimeter, check for continuity between I-004 (1) and I-027 (10), and continuity between I-004 (9) and I-027 (11) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
I-004 (1) - I-027 (10)	Engine switch OFF	Continuity
I-004 (9) - I-027 (11)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.



45

NG

Replace wire harness and connector of driver frontal airbag

OK

Replace airbag module assembly

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0010-11	Passenger Frontal Airbag Deployment Control - Circuit Short to Ground
DTC	B0010-12	Passenger Frontal Airbag Deployment Control - Circuit Short to Battery
DTC	B0010-1A	Passenger Frontal Airbag Deployment Control - Circuit Resistance Below Threshold
DTC	B0010-1B	Passenger Frontal Airbag Deployment Control - Circuit Resistance Above Threshold

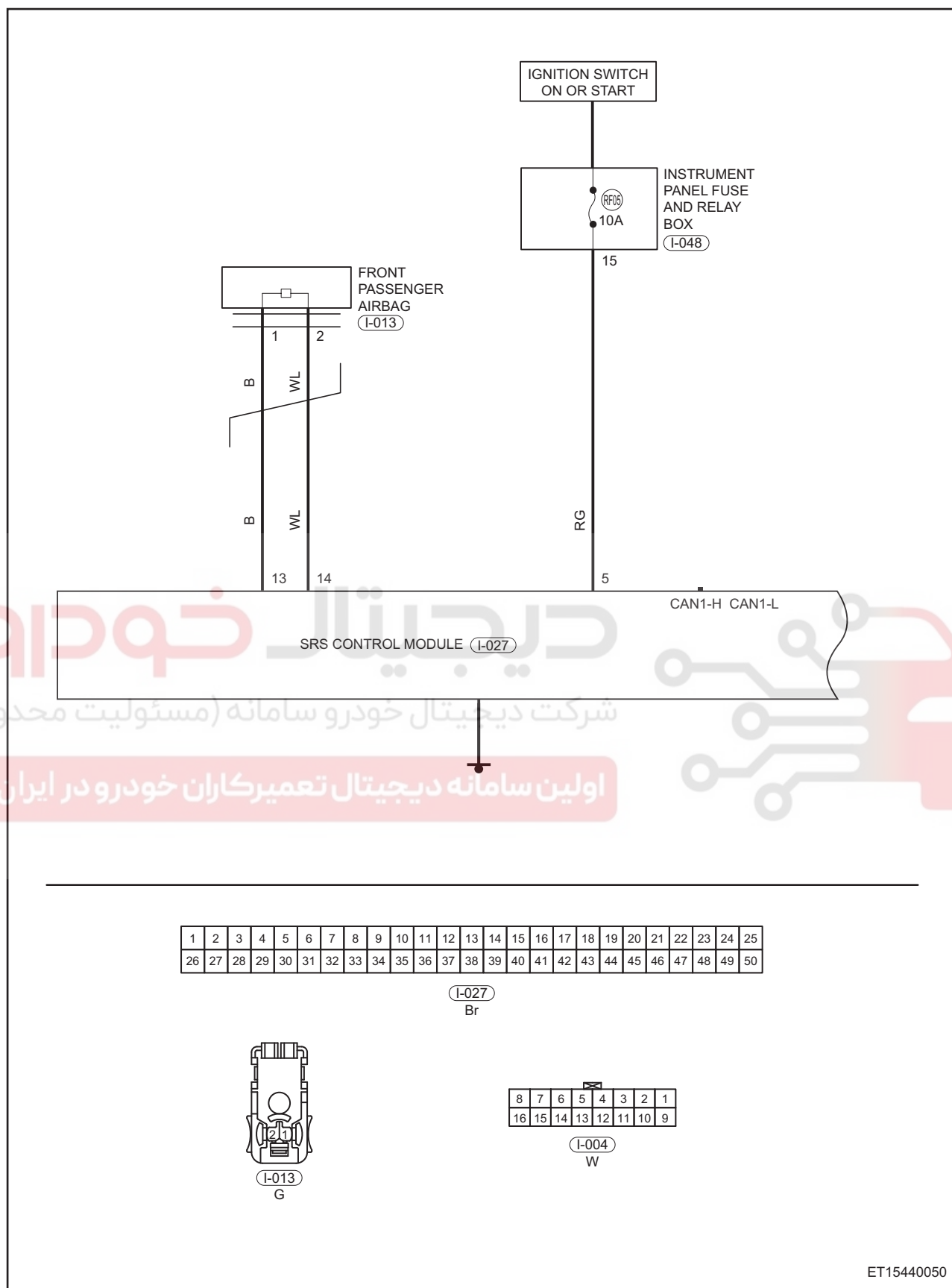
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DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0010-11	Passenger Frontal Airbag Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Front passenger frontal airbag ignition circuit short to ground, short-circuit current detected by controller
B0010-12		Leakage resistance is less than 1.8 k Ω		Front passenger frontal airbag ignition circuit short to power supply, short-circuit current detected by controller
B0010-1A		Airbag resistance is less than 1.1 Ω		Front passenger frontal airbag ignition circuit resistance below set threshold
B0010-1B		Airbag resistance is more than 5.0 Ω		Front passenger frontal airbag ignition circuit resistance above set threshold

 CAUTION

When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

Diagnosis Procedure**1****Check for a short circuit to ground in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and front passenger frontal airbag connector.

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

- c. Using ohm band of multimeter, check for continuity between I-027 (13) and ground, and continuity between I-027 (14) and ground separately.

Specified Condition

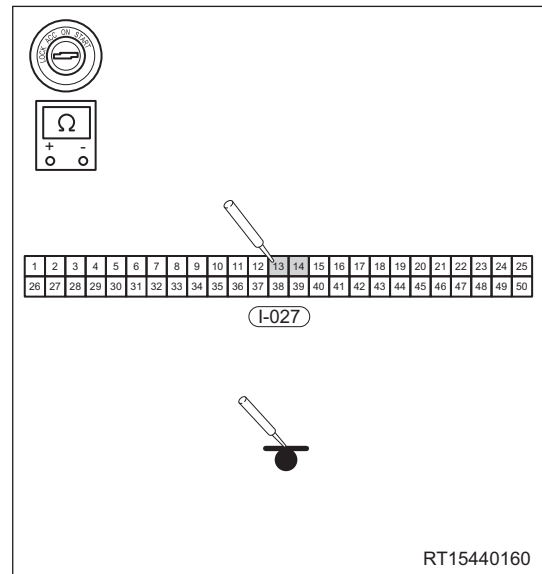
Multimeter Connection	Condition	Specified Condition
I-027 (13) - Ground	Engine switch OFF	No continuity
I-027 (14) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



RT15440160

NEXT

2

Check for a short circuit to power supply in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and front passenger frontal airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (13) and battery positive (+), and continuity between I-027 (14) and battery positive (+) separately.

Specified Condition

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Multimeter Connection	Condition	Specified Condition
I-027 (13) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (14) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT

3**Check if circuit resistance is below or above threshold**

Use circuit diagram as a guide to perform the following procedures:

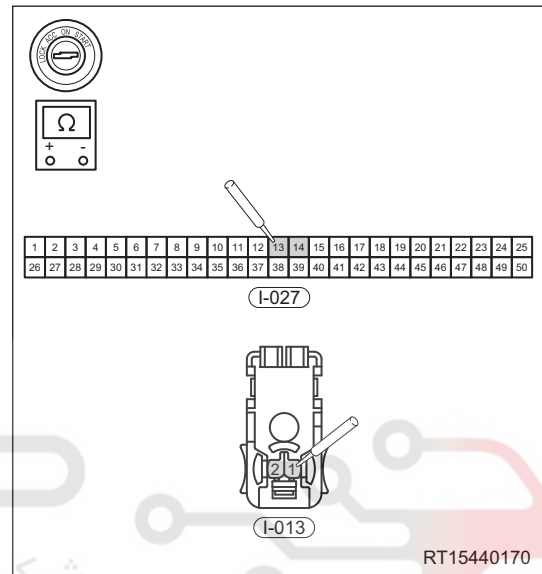
- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace front passenger frontal airbag with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in front passenger frontal airbag resistance, and a further inspection is needed.
- Disconnect front passenger frontal airbag connector I-013 and airbag module connector I-027 separately.
- Using ohm band of multimeter, check for continuity between I-013 (1) and I-027 (13), and continuity between I-013 (2) and I-027 (14) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
I-013 (1) - I-027 (13)	Engine switch OFF	Continuity
I-013 (2) - I-027 (14)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.



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NG

Replace wire harness and connector of front passenger frontal airbag

OK

Replace airbag module assembly

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0020-11	Left Side Airbag Deployment Control - Circuit Short to Ground
DTC	B0020-12	Left Side Airbag Deployment Control - Circuit Short to Battery
DTC	B0020-1A	Left Side Airbag Deployment Control - Circuit Resistance Below Threshold
DTC	B0020-1B	Left Side Airbag Deployment Control - Circuit Resistance Above Threshold

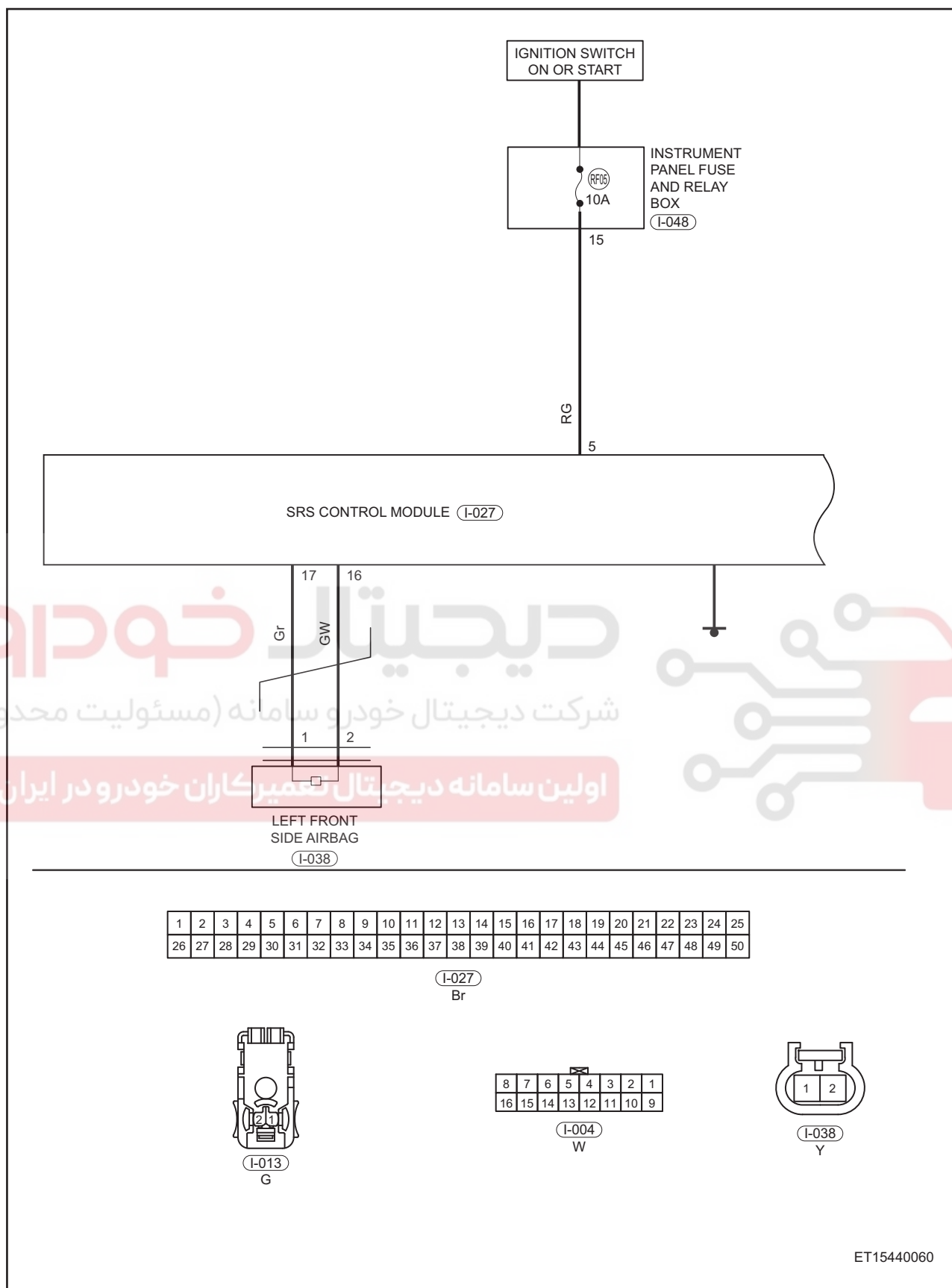
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DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0020-11	Left Side Airbag Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Left side airbag ignition circuit short to ground, short-circuit current detected by controller
B0020-12		Leakage resistance is less than 1.8 k Ω		Left side airbag ignition circuit short to power supply, short-circuit current detected by controller
B0020-1A		Airbag resistance is less than 1.1 Ω		Left side airbag ignition circuit resistance below set threshold
B0020-1B		Airbag resistance is more than 5.0 Ω		Left side airbag ignition circuit resistance above set threshold

 CAUTION

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left side airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (16) and ground, and continuity between I-027 (17) and ground separately.

Specified Condition

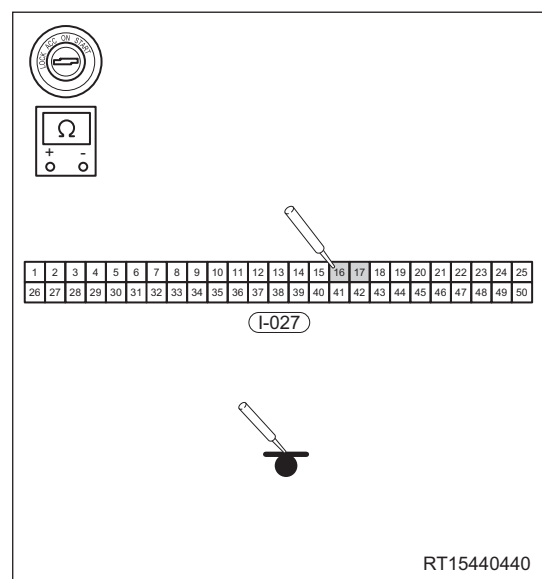
Multimeter Connection	Condition	Specified Condition
I-027 (16) - Ground	Engine switch OFF	No continuity
I-027 (17) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



NEXT

2 Check for a short circuit to power supply in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left side airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (16) and battery positive (+), and continuity between I-027 (17) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (16) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (17) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT

3 Check if circuit resistance is below or above threshold

45

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace left side airbag with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in left side airbag resistance, and a further inspection is needed.
- Disconnect left side airbag connector I-038 and airbag module connector I-027 separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

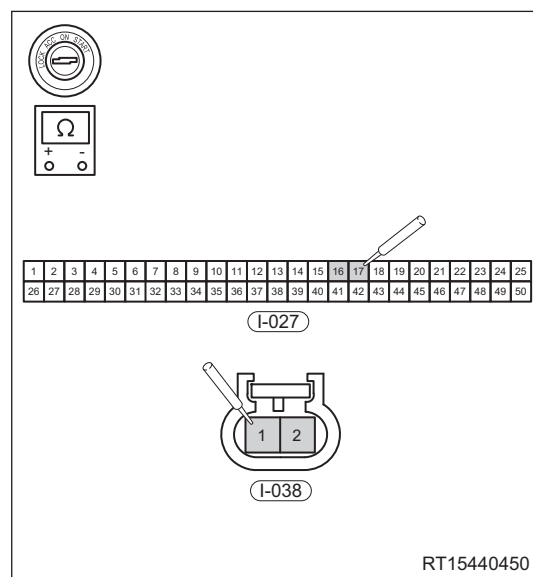
- d. Using ohm band of multimeter, check for continuity between I-038 (1) and I-027 (17), and continuity between I-038 (2) and I-027 (16) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
I-038 (1) - I-027 (17)	Engine switch OFF	Continuity
I-038 (2) - I-027 (16)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

**NG**

Replace wire harness and connector of left side airbag

OK

Replace airbag module assembly

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0028-11	Right Side Airbag Deployment Control - Circuit Short to Ground
DTC	B0028-12	Right Side Airbag Deployment Control - Circuit Short to Battery
DTC	B0028-1A	Right Side Airbag Deployment Control - Circuit Resistance Below Threshold
DTC	B0028-1B	Right Side Airbag Deployment Control - Circuit Resistance Above Threshold

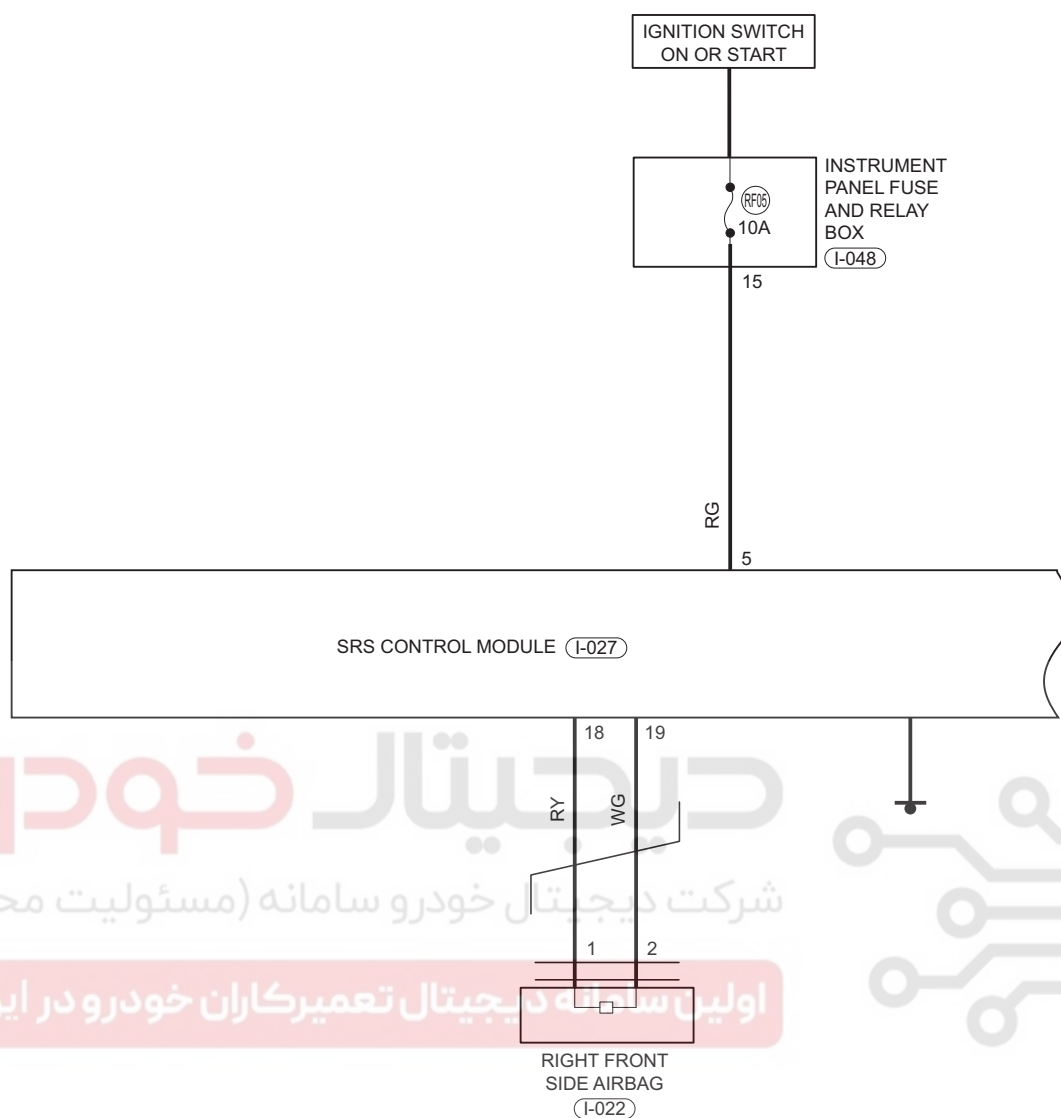
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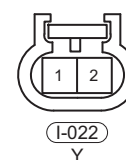
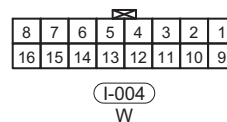
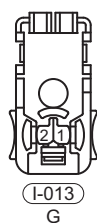


45 - SUPPLEMENTAL RESTRAINT SYSTEM



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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0028-11	Right Side Airbag Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Right side airbag ignition circuit short to ground, short-circuit current detected by controller
B0028-12		Leakage resistance is less than 1.8 k Ω		Right side airbag ignition circuit short to power supply, short-circuit current detected by controller
B0028-1A		Airbag resistance is less than 1.1 Ω		Right side airbag ignition circuit resistance below set threshold
B0028-1B		Airbag resistance is more than 5.0 Ω		Right side airbag ignition circuit resistance above set threshold

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right side airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (18) and ground, and continuity between I-027 (19) and ground separately.

Specified Condition

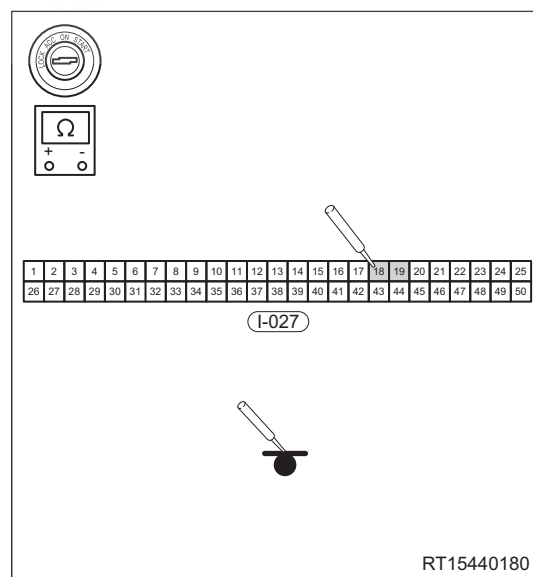
Multimeter Connection	Condition	Specified Condition
I-027 (18) - Ground	Engine switch OFF	No continuity
I-027 (19) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



45

NEXT

45 - SUPPLEMENTAL RESTRAINT SYSTEM

2**Check for a short circuit to power supply in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right side airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (18) and battery positive (+), and continuity between I-027 (19) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (16) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (17) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT**3****Check if circuit resistance is below or above threshold****45**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace right side airbag with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in right side airbag resistance, and a further inspection is needed.
- Disconnect right side airbag connector I-022 and airbag module connector I-027 separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

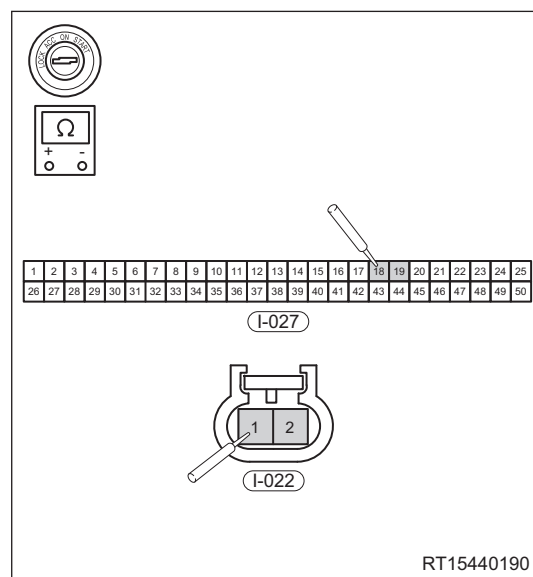
- d. Using ohm band of multimeter, check for continuity between I-022 (1) and I-027 (18), and continuity between I-022 (2) and I-027 (19) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
I-022 (1) - I-027 (18)	Engine switch OFF	Continuity
I-022 (2) - I-027 (19)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

**NG**

Replace wire harness and connector of right side airbag

OK

Replace airbag module assembly

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DTC	B0021-11	Left Curtain Deployment Control - Circuit Short to Ground
DTC	B0021-12	Left Curtain Deployment Control - Circuit Short to Battery
DTC	B0021-1A	Left Curtain Deployment Control - Circuit Resistance Below Threshold
DTC	B0021-1B	Left Curtain Deployment Control - Circuit Resistance Above Threshold

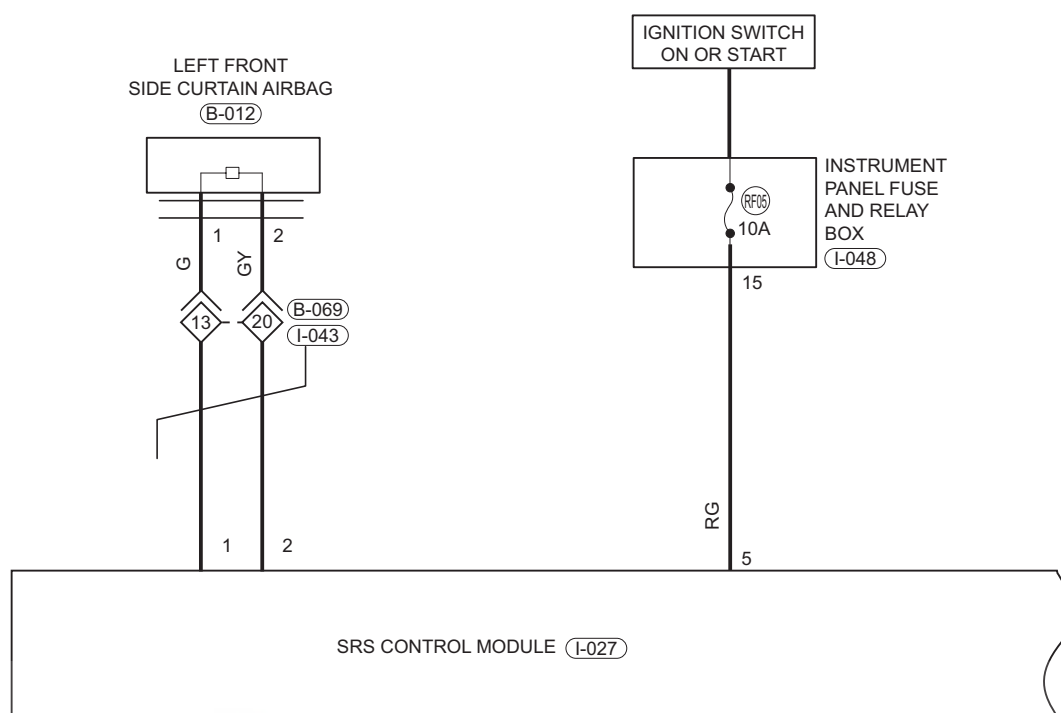
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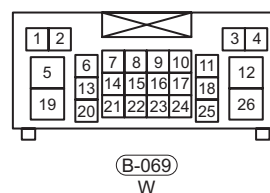
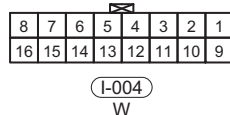
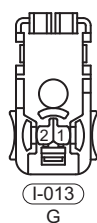
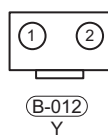
45 - SUPPLEMENTAL RESTRAINT SYSTEM



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26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0021-11	Left Curtain Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Left curtain shield airbag ignition circuit short to ground, short-circuit current detected by controller
B0021-12		Leakage resistance is less than 1.8 k Ω		Left curtain shield airbag ignition circuit short to power supply, short-circuit current detected by controller
B0021-1A		Airbag resistance is less than 1.1 Ω		Left curtain shield airbag ignition circuit resistance below set threshold
B0021-1B		Airbag resistance is more than 5.0 Ω		Left curtain shield airbag ignition circuit resistance above set threshold

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left curtain shield airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (1) and ground, and continuity between I-027 (2) and ground separately.

Specified Condition

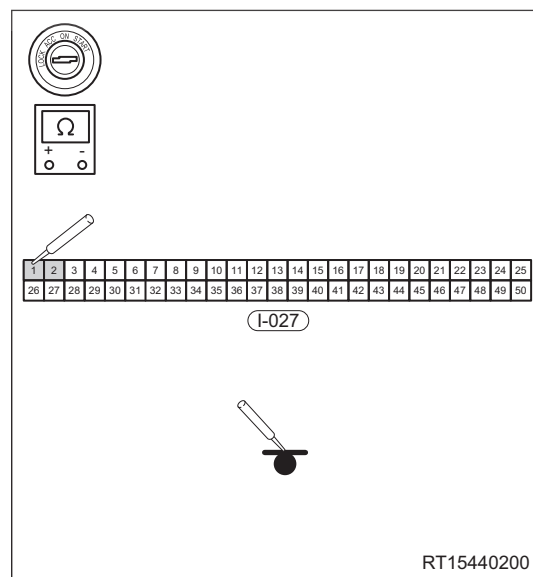
Multimeter Connection	Condition	Specified Condition
I-027 (1) - Ground	Engine switch OFF	No continuity
I-027 (2) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



NEXT

2**Check for a short circuit to power supply in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left curtain shield airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (1) and battery positive (+), and continuity between I-027 (2) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (1) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (2) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT**3****Check if circuit resistance is below or above threshold**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace left curtain shield airbag with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in left curtain shield airbag resistance, and a further inspection is needed.
- Disconnect left curtain shield airbag connector B-012 and airbag module connector I-027 separately.

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

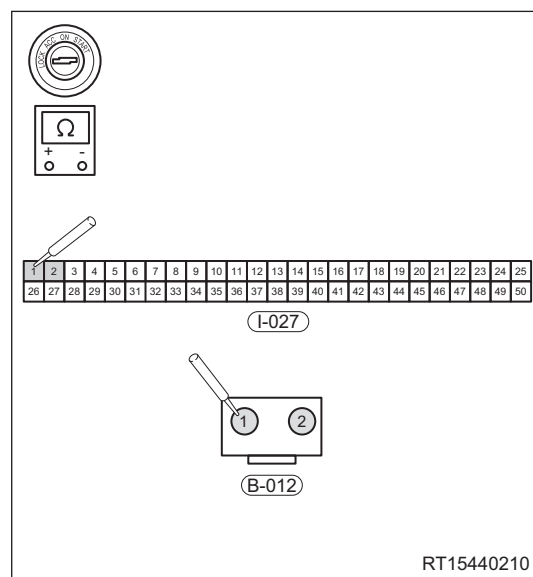
- d. Using ohm band of multimeter, check for continuity between B-012 (1) and I-027 (1), and continuity between B-012 (2) and I-027 (2) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
B-012 (1) - I-027 (1)	Engine switch OFF	Continuity
B-012 (2) - I-027 (2)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

**NG**

Replace wire harness and connector of left curtain shield airbag

OK

Replace airbag module assembly

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0029-11	Right Curtain Deployment Control - Circuit Short to Ground
DTC	B0029-12	Right Curtain Deployment Control - Circuit Short to Battery
DTC	B0029-1A	Right Curtain Deployment Control - Circuit Resistance Below Threshold
DTC	B0029-1B	Right Curtain Deployment Control - Circuit Resistance Above Threshold

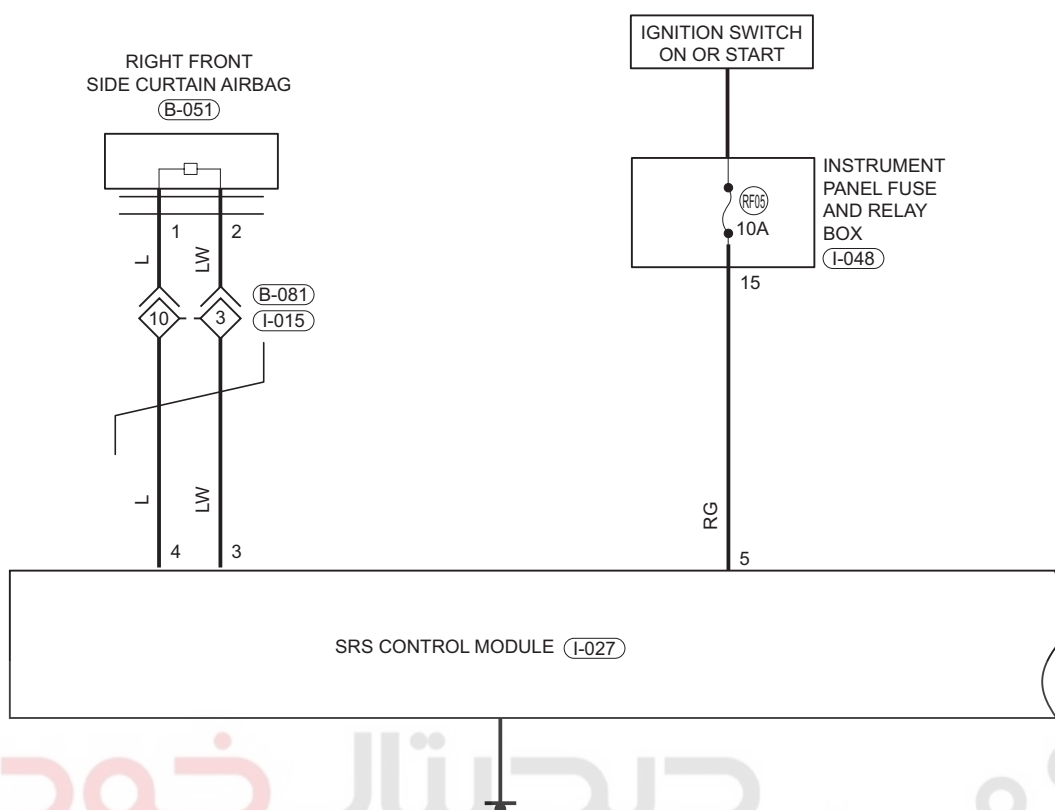
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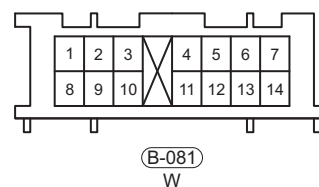
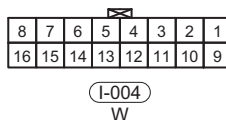
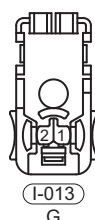
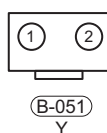
45 - SUPPLEMENTAL RESTRAINT SYSTEM



45

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26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0029-11	Right Curtain Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Right curtain shield airbag ignition circuit short to ground, short-circuit current detected by controller
B0029-12		Leakage resistance is less than 1.8 k Ω		Right curtain shield airbag ignition circuit short to power supply, short-circuit current detected by controller
B0029-1A		Airbag resistance is less than 1.1 Ω		Right curtain shield airbag ignition circuit resistance below set threshold
B0029-1B		Airbag resistance is more than 5.0 Ω		Right curtain shield airbag ignition circuit resistance above set threshold

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right curtain shield airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (4) and ground, and continuity between I-027 (3) and ground separately.

Specified Condition

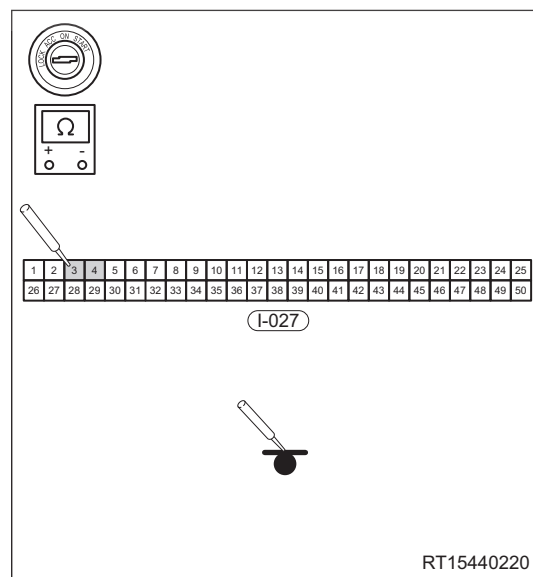
Multimeter Connection	Condition	Specified Condition
I-027 (4) - Ground	Engine switch OFF	No continuity
I-027 (3) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



45

NEXT

45 - SUPPLEMENTAL RESTRAINT SYSTEM

2**Check for a short circuit to power supply in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right curtain shield airbag connector.
- Using ohm band of multimeter, check for continuity between I-027 (4) and battery positive (+), and continuity between I-027 (3) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (4) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (3) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT**3****Check if circuit resistance is below or above threshold**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace right curtain shield airbag with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in right curtain shield airbag resistance, and a further inspection is needed.
- Disconnect right curtain shield airbag connector B-051 and airbag module connector I-027 separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

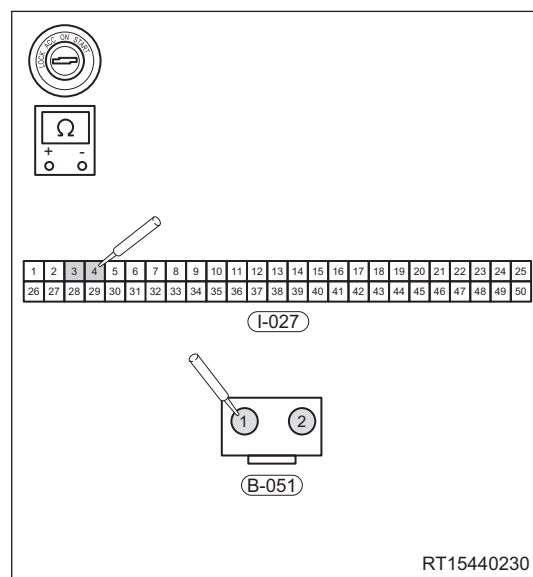
- d. Using ohm band of multimeter, check for continuity between B-051 (1) and I-027 (4), and continuity between B-051 (2) and I-027 (3) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
B-051 (1) - I-027 (4)	Engine switch OFF	Continuity
B-051 (2) - I-027 (3)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

**NG**

Replace wire harness and connector of right curtain shield airbag

OK

Replace airbag module assembly

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B1285-11	Front Row Left Seatbelt Pretensioner Deployment Control - Circuit Short to Ground
DTC	B1285-12	Front Row Left Seatbelt Pretensioner Deployment Control - Circuit Short to Battery
DTC	B1285-1A	Front Row Left Seatbelt Pretensioner Deployment Control - Circuit Resistance Below Threshold
DTC	B1285-1B	Front Row Left Seatbelt Pretensioner Deployment Control - Circuit Resistance Above Threshold

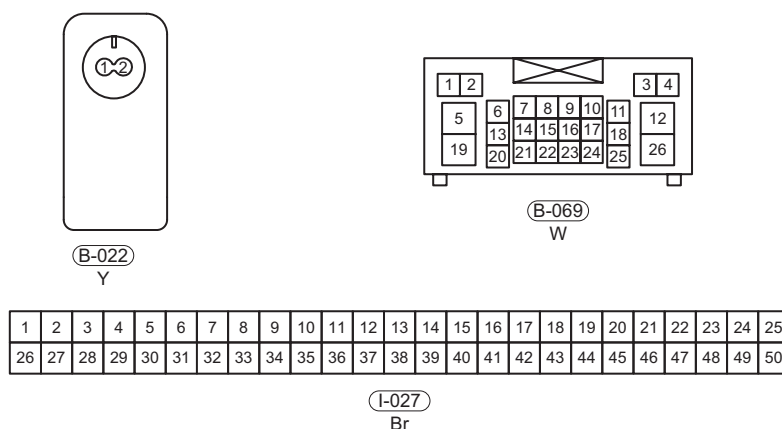
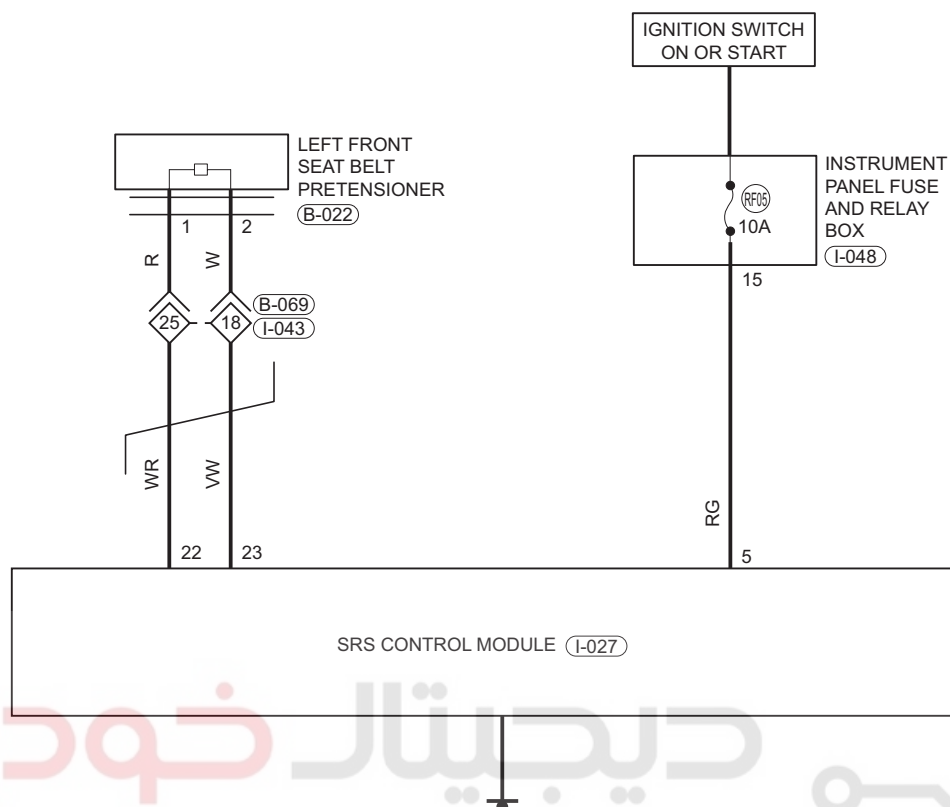
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM



ET15440100

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B1285-11	Front Row Left Seatbelt Pretensioner Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Front left seat belt pretensioner ignition circuit short to ground, short-circuit current detected by controller
B1285-12		Leakage resistance is less than 1.8 k Ω		Front left seat belt pretensioner ignition circuit short to power supply, short-circuit current detected by controller
B1285-1A		Airbag resistance is less than 1.1 Ω		Front left seat belt pretensioner ignition circuit resistance below set threshold
B1285-1B		Airbag resistance is more than 5.0 Ω		Front left seat belt pretensioner ignition circuit resistance above set threshold

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and front left seat belt connector.
- Using ohm band of multimeter, check for continuity between I-027 (23) and ground, and continuity between I-027 (22) and ground separately.

Specified Condition

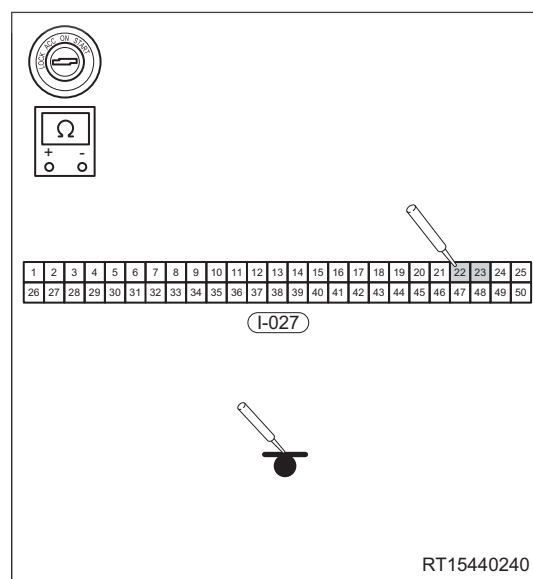
Multimeter Connection	Condition	Specified Condition
I-027 (23) - Ground	Engine switch OFF	No continuity
I-027 (22) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



NEXT

2**Check for a short circuit to power supply in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and front left seat belt connector.
- Using ohm band of multimeter, check for continuity between I-027 (23) and battery positive (+), and continuity between I-027 (22) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (23) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (22) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT**3****Check if circuit resistance is below or above threshold**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace front left seat belt pretensioner with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in front left seat belt pretensioner resistance, and a further inspection is needed.
- Disconnect front left seat belt pretensioner connector B-022 and airbag module connector I-027 separately.

45

45 - SUPPLEMENTAL RESTRAINT SYSTEM

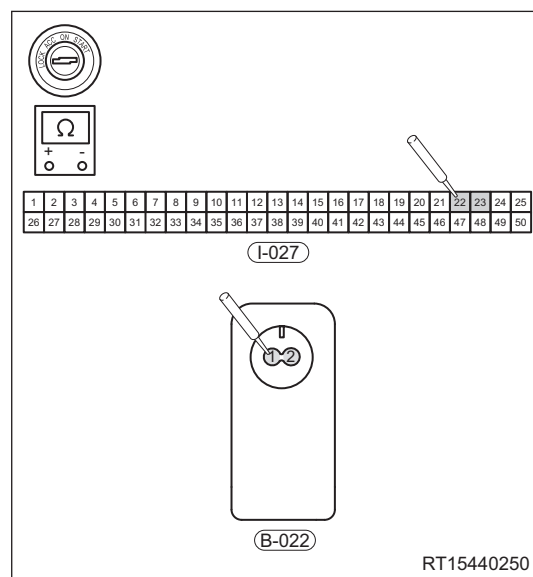
- d. Using ohm band of multimeter, check for continuity between B-022 (1) and I-027 (22), and continuity between B-022 (2) and I-027 (23) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
B-022 (1) - I-027 (22)	Engine switch OFF	Continuity
B-022 (2) - I-027 (23)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

**NG**

Replace wire harness and connector of front left seat belt pretensioner

OK

Replace airbag module assembly

DTC	B1286-11	Front Row Right Seatbelt Pretensioner Deployment Control - Circuit Short to Ground
DTC	B1286-12	Front Row Right Seatbelt Pretensioner Deployment Control - Circuit Short to Battery
DTC	B1286-1A	Front Row Right Seatbelt Pretensioner Deployment Control - Circuit Resistance Below Threshold
DTC	B1286-1B	Front Row Right Seatbelt Pretensioner Deployment Control - Circuit Resistance Above Threshold

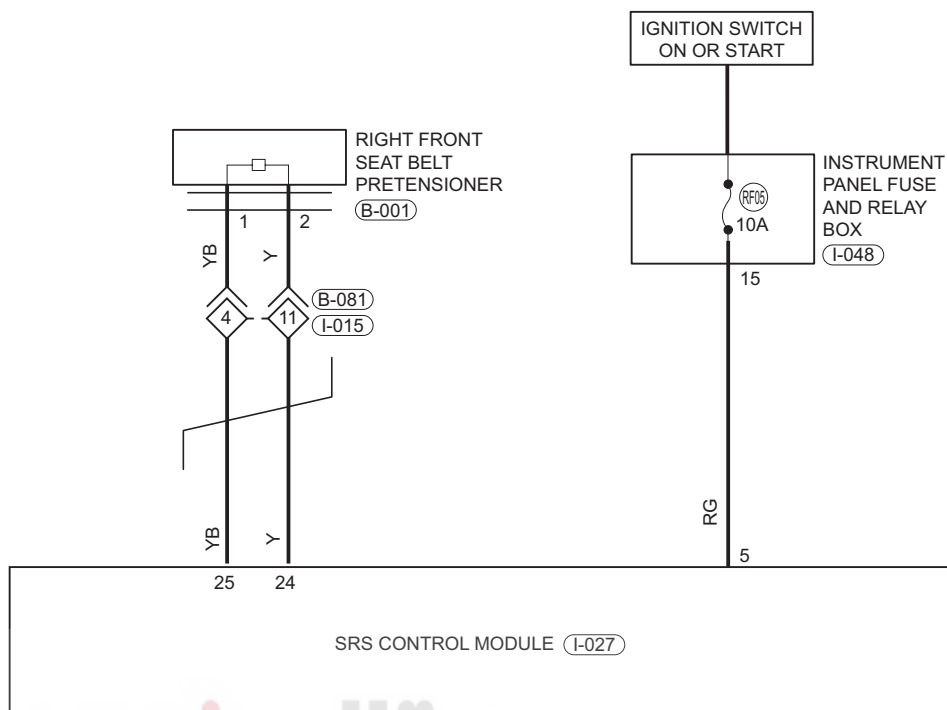
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

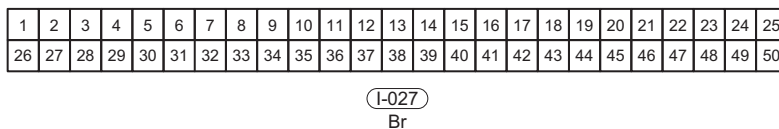
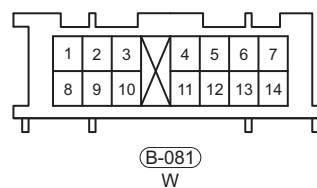
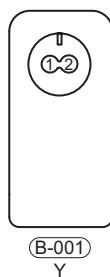
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM



45



ET15440110

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B1286-11	Front Row Right Seatbelt Pretensioner Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Front right seat belt pretensioner ignition circuit short to ground, short-circuit current detected by controller
B1286-12		Leakage resistance is less than 1.8 k Ω		Front right seat belt pretensioner ignition circuit short to power supply, short-circuit current detected by controller
B1286-1A		Airbag resistance is less than 1.1 Ω		Front right seat belt pretensioner ignition circuit resistance below set threshold
B1286-1B		Airbag resistance is more than 5.0 Ω		Front right seat belt pretensioner ignition circuit resistance above set threshold

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and front right seat belt connector.
- Using ohm band of multimeter, check for continuity between I-027 (25) and ground, and continuity between I-027 (24) and ground separately.

Specified Condition

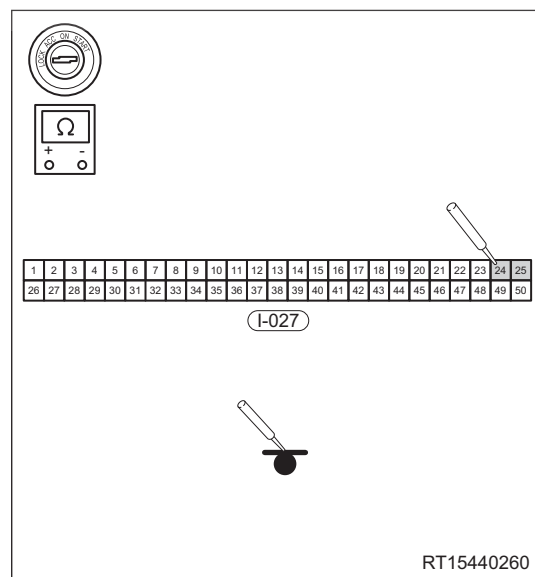
Multimeter Connection	Condition	Specified Condition
I-027 (25) - Ground	Engine switch OFF	No continuity
I-027 (24) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



45

NEXT

45 - SUPPLEMENTAL RESTRAINT SYSTEM

2**Check for a short circuit to power supply in wire harness or connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and front right seat belt connector.
- Using ohm band of multimeter, check for continuity between I-027 (24) and battery positive (+), and continuity between I-027 (25) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (24) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (25) - Battery positive (+)	Engine switch OFF	No continuity

NG**Repair or replace wire harness or connector that is shorted to power supply****OK****Go to next step****NEXT****3****Check if circuit resistance is below or above threshold****45**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace front right seat belt pretensioner with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in front right seat belt pretensioner resistance, and a further inspection is needed.
- Disconnect front right seat belt pretensioner connector B-001 and airbag module connector I-027 separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

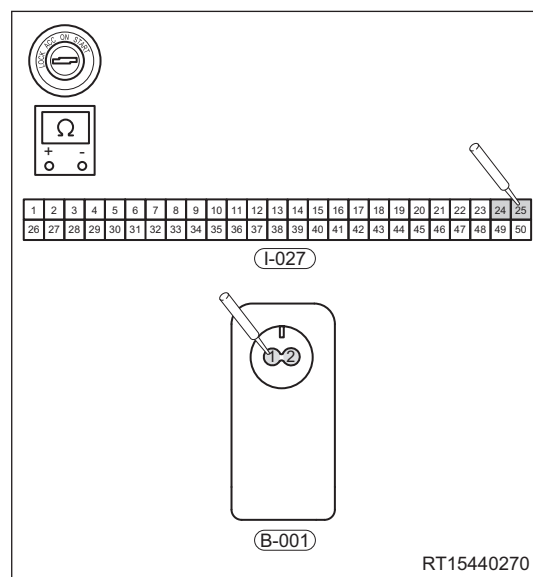
- d. Using ohm band of multimeter, check for continuity between B-001 (1) and I-027 (25), and continuity between B-001 (2) and I-027 (24) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
B-001 (1) - I-027 (25)	Engine switch OFF	Continuity
B-001 (2) - I-027 (24)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.



NG

Replace wire harness and connector of front right seat belt pretensioner

OK

Replace airbag module assembly

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0073-11	Second Row Left Seatbelt Pretensioner Deployment Control - Circuit Short to Ground
DTC	B0073-12	Second Row Left Seatbelt Pretensioner Deployment Control - Circuit Short to Battery
DTC	B0073-1A	Second Row Left Seatbelt Pretensioner Deployment Control - Circuit Resistance Below Threshold
DTC	B0073-1B	Second Row Left Seatbelt Pretensioner Deployment Control - Circuit Resistance AboveThreshold

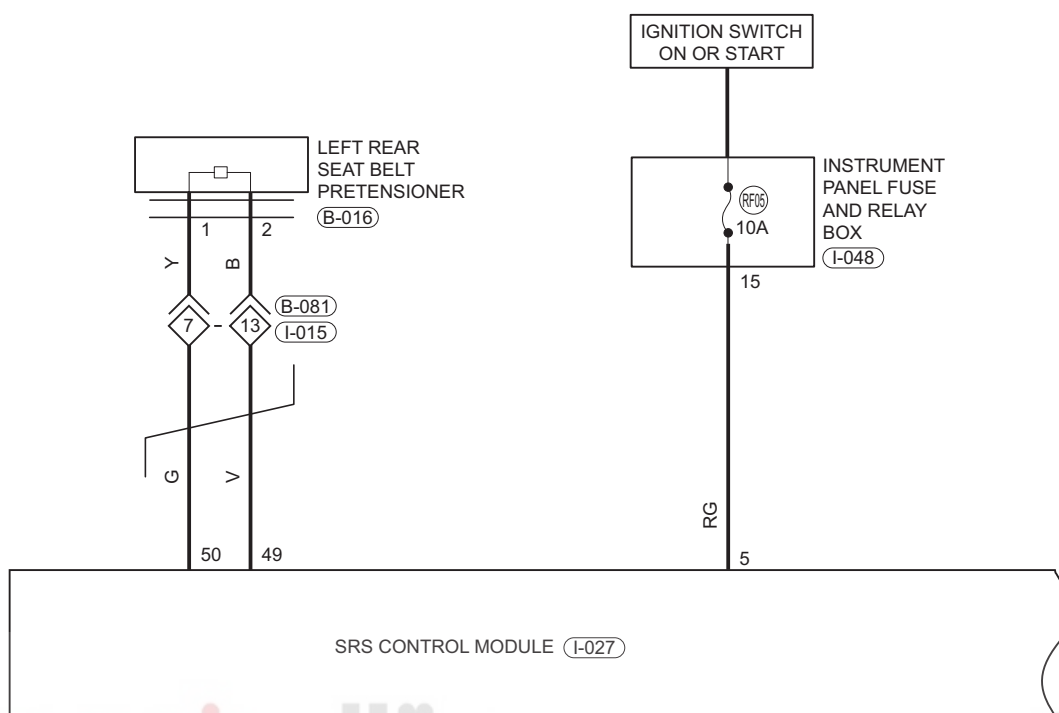
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



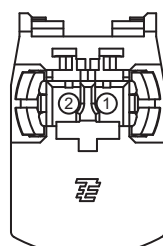
45 - SUPPLEMENTAL RESTRAINT SYSTEM



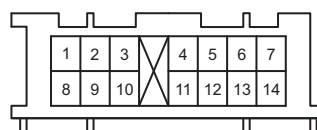
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



(B-016)
Y



(B-081)
W

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

(I-027)
Br

ET15440120

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0073-11	Second Row Left Seatbelt Pretensioner Deployment Control	Leakage resistance is less than 1.4 k Ω	Malfunction indicator ON	Second row left seat belt pretensioner ignition circuit short to ground, short-circuit current detected by controller
B0073-12		Leakage resistance is less than 1.8 k Ω		Second row left seat belt pretensioner ignition circuit short to power supply, short-circuit current detected by controller
B0073-1A		Airbag resistance is less than 1.1 Ω		Second row left seat belt pretensioner ignition circuit resistance below set threshold
B0073-1B		Airbag resistance is more than 5.0 Ω		Second row left seat belt pretensioner ignition circuit resistance above set threshold

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check for a short circuit to ground in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and second row left seat belt pretensioner connector.
- Using ohm band of multimeter, check for continuity between I-027 (50) and ground, and continuity between I-027 (49) and ground separately.

Specified Condition

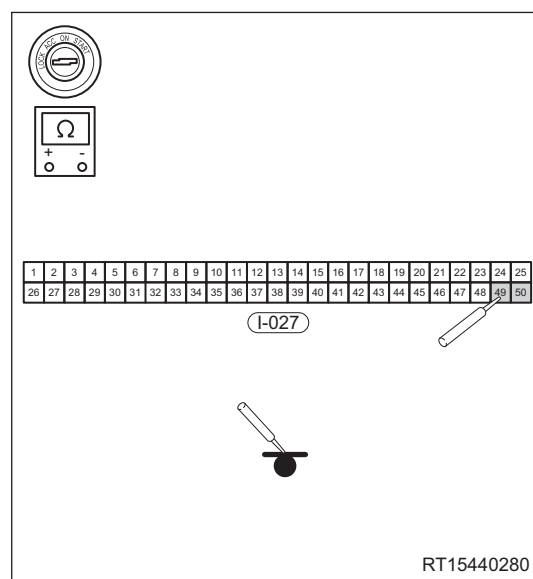
Multimeter Connection	Condition	Specified Condition
I-027 (50) - Ground	Engine switch OFF	No continuity
I-027 (49) - Ground	Engine switch OFF	No continuity

NG

Repair or replace connector or wire harness that is shorted to ground

OK

Go to next step



NEXT

2 Check for a short circuit to power supply in wire harness or connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and second row left seat belt pretensioner connector.
- Using ohm band of multimeter, check for continuity between I-027 (50) and battery positive (+), and continuity between I-027 (49) and battery positive (+) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (50) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (49) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT

3 Check if circuit resistance is below or above threshold

45

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace second row left seat belt pretensioner with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in second row left seat belt pretensioner resistance, and a further inspection is needed.
- Disconnect second row left seat belt pretensioner connector B-016 and airbag module connector I-027 separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

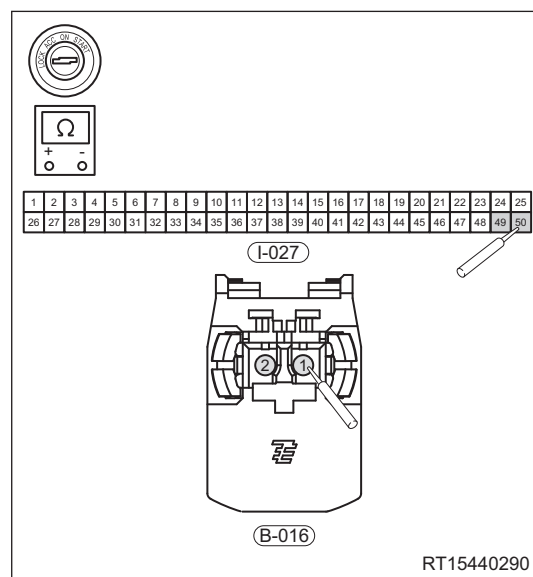
- d. Using ohm band of multimeter, check for continuity between B-016 (1) and I-027 (50), and continuity between B-016 (2) and I-027 (49) separately.

Standard Condition

Multimeter Connection	Condition	Standard Condition
B-016 (1) - I-027 (50)	Engine switch OFF	Continuity
B-016 (2) - I-027 (49)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

**NG**

Replace wire harness and connector of second row left seat belt pretensioner

OK

Replace airbag module assembly

DTC	B121D-95	Squib Invalid Configuration (Pin16, Pin17) - Incorrect Assembly
DTC	B121E-95	Squib Invalid Configuration (Pin18, Pin19) - Incorrect Assembly

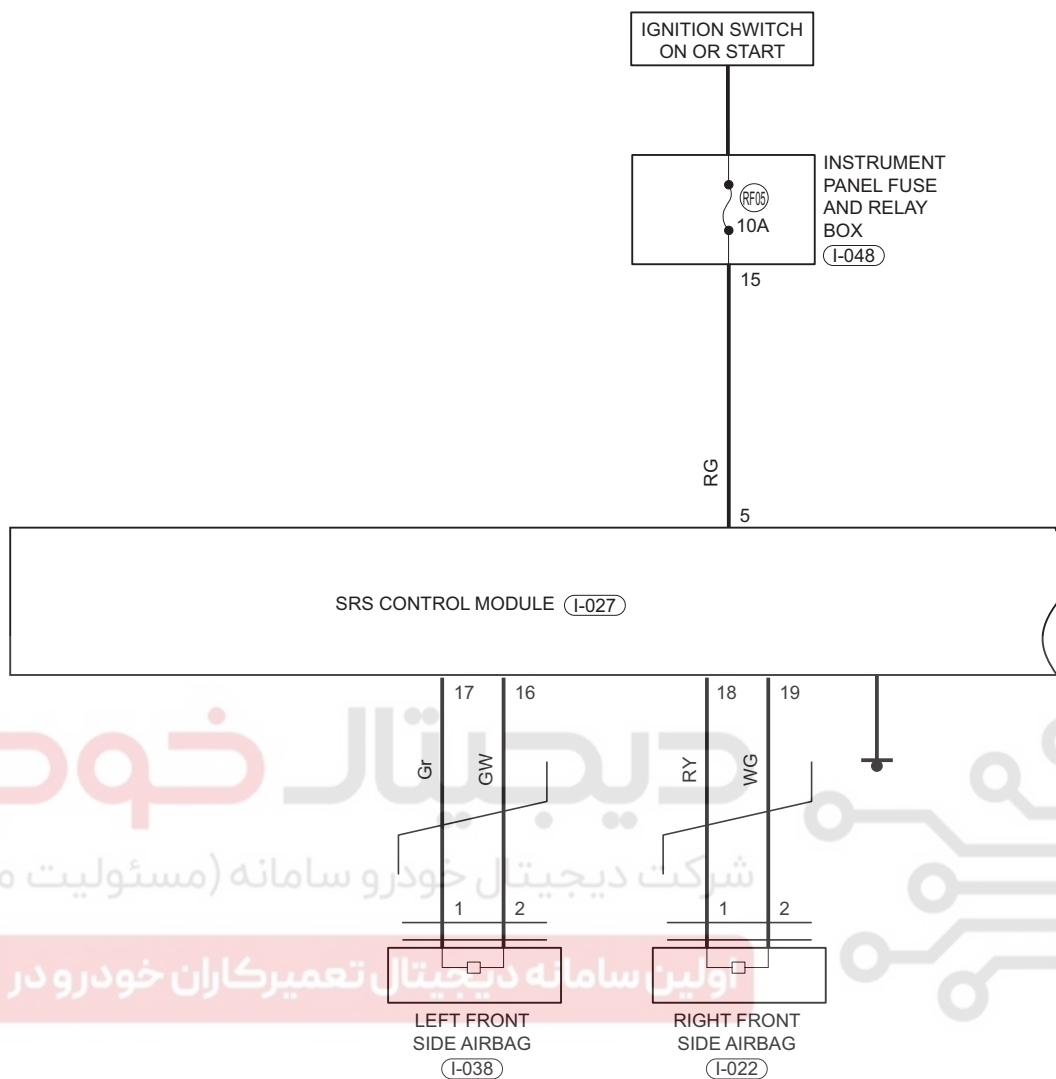
دیجیتال خودرو

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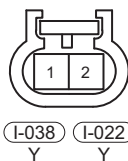
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45 - SUPPLEMENTAL RESTRAINT SYSTEM



45



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

(I-027)
Br

ET15440130

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B121D-95	Squib Invalid Configuration	Measure resistance between pins 16 and 17, and it should be within 63 to 67 Ω	Malfunction indicator ON	Check if pins 16 and 17 are connected with ignition circuit
B121E-95		Measure resistance between pins 18 and 19, and it should be within 63 to 67 Ω		Check if pins 18 and 19 are connected with ignition circuit

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Replace seat airbag assembly with a new one

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace seat airbag connector with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in seat airbag, and a further inspection is needed.

OK

Replace seat airbag assembly

NG

Go to next step

NEXT

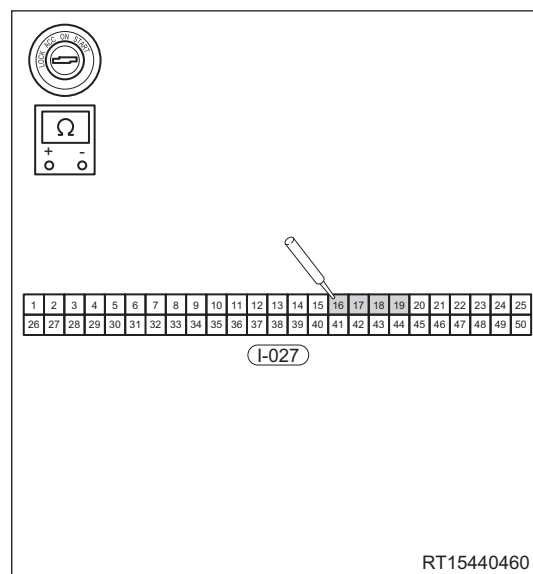
2 Check wire harness and connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027, front left seat airbag connector I-038 and front right seat airbag connector I-022 separately.
- Using ohm band of multimeter, measure resistance between I-027 (16) and I-027 (17), and resistance between I-027 (18) and I-027 (19) of airbag module connector.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
I-027 (16) - I-027 (17)	Engine switch OFF	63 - 67 Ω
I-027 (18) - I-027 (19)	Engine switch OFF	63 - 67 Ω

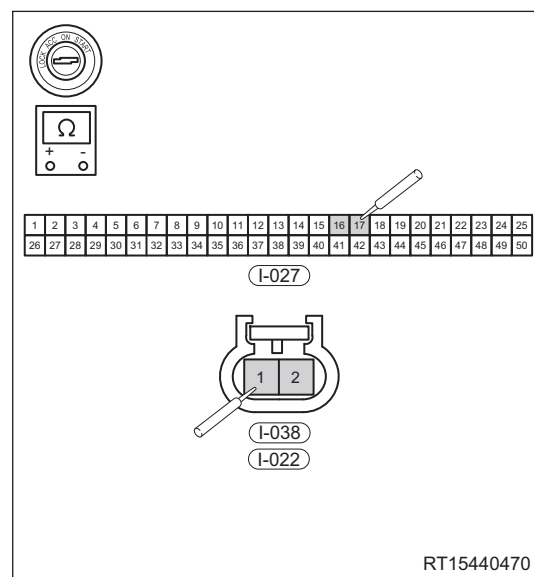


45 - SUPPLEMENTAL RESTRAINT SYSTEM

- d. Using a multimeter, check for continuity between I-038 (1) and I-027 (17), continuity between I-038 (2) and I-027 (16), continuity between I-022 (1) and I-027 (18), and continuity between I-022 (2) and I-027 (19).

Standard Condition

Multimeter Connection	Condition	Specified Condition
I-038 (1) - I-027 (17)	Engine switch OFF	Continuity
I-038 (2) - I-027 (16)	Engine switch OFF	Continuity
I-022 (1) - I-027 (18)	Engine switch OFF	Continuity
I-022 (2) - I-027 (19)	Engine switch OFF	Continuity

**HINT:**

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

NG

Replace wire harness and connector

OK

Replace airbag module

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B00C7-95	Passenger Presence Detection Switch - Incorrect Assembly
DTC	B1233-95	Passenger Buckle Switch (Config Data Invalid) - Incorrect Assembly

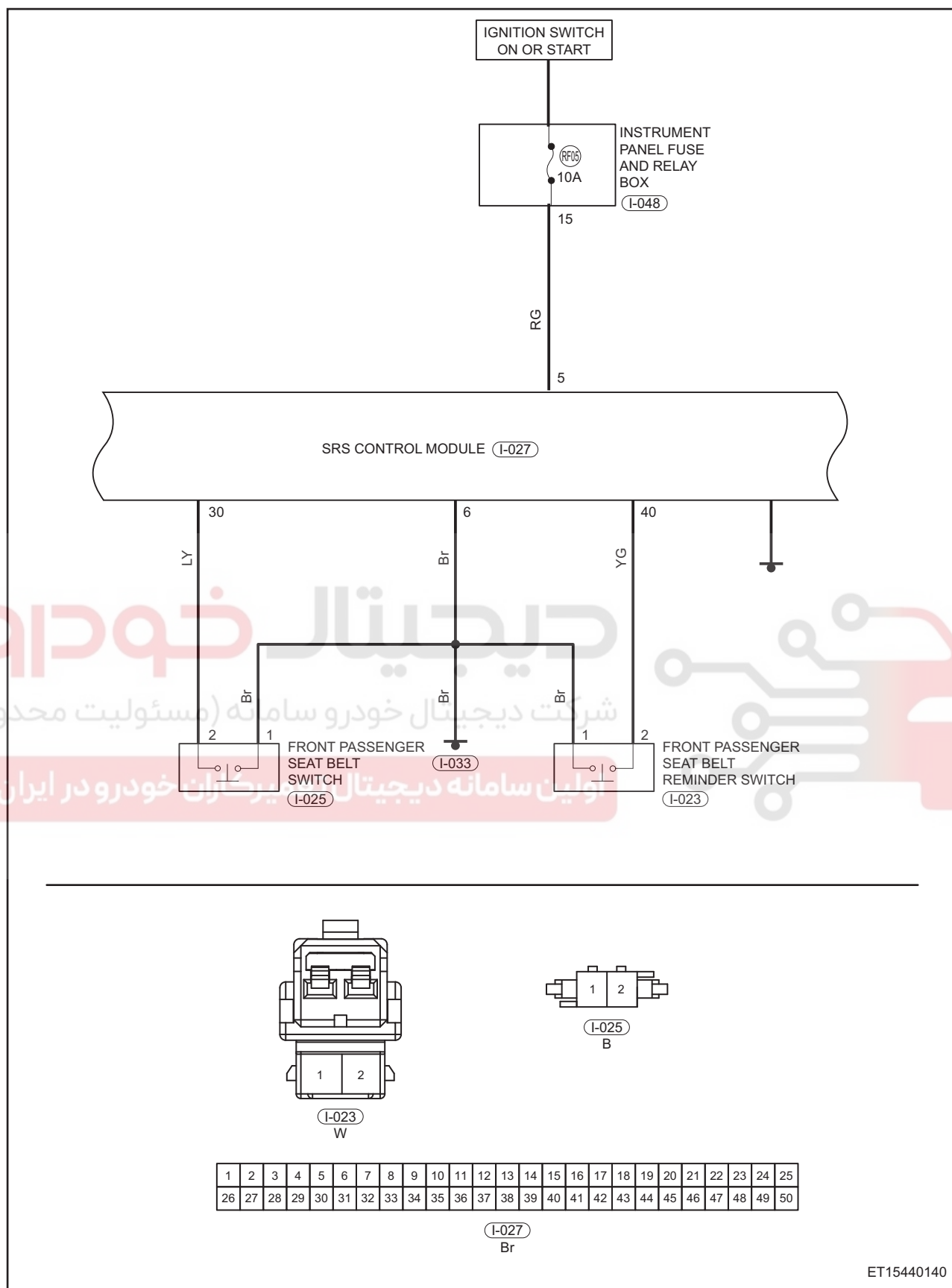
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45 - SUPPLEMENTAL RESTRAINT SYSTEM



45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B00C7-95	Passenger Presence Detection Switch	Incorrect configuration or data damage	Malfunction indicator ON	Incorrect controller software parameter configuration
B1233-95	Passenger Buckle Switch (Config Data Invalid)			

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check front passenger load detection switch

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace front passenger load detection switch with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists.

OK

Replace front passenger load detection switch

NG

Go to next step

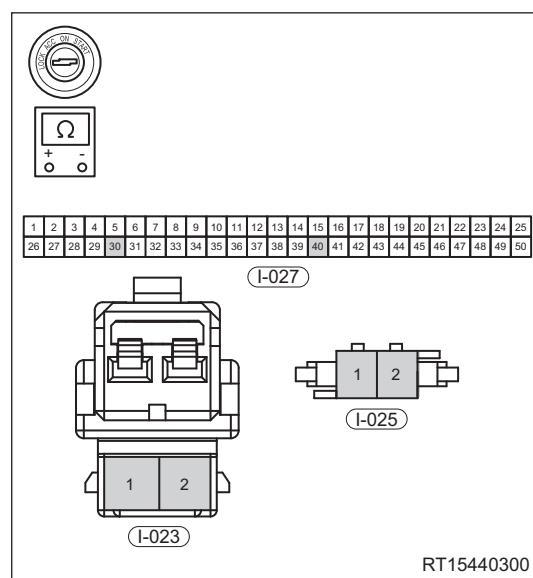
NEXT**2 Check wire harness and connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027, front seat belt switch connector I-025 and front right seat belt reminder switch connector I-023 separately.
- Using ohm band of multimeter, check for continuity between I-027 (30) and I-025 (2), continuity between I-027 (40) and I-023 (2), and continuity between I-025 (1) and I-023 (1) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (30) - I-025 (2)	Engine switch OFF	Continuity
I-027 (40) - I-023 (2)	Engine switch OFF	Continuity
I-025 (1) - I-023 (1)	Engine switch OFF	Continuity

**45**

45 - SUPPLEMENTAL RESTRAINT SYSTEM

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

NG

Replace wire harness and connector

OK

Replace airbag module

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0091-12	Left Side Restraints Sensor - Circuit Short to Battery
DTC	B0091-13	Left Side Restraints Sensor - Circuit Open
DTC	B0091-16	Left Side Restraints Sensor - Circuit Voltage Below Threshold
DTC	B0091-96	Left Side Restraints Sensor - Component Internal Failures
DTC	B0091-91	Left Side Restraints Sensor - Parametric
DTC	B0091-86	Left Side Restraints Sensor - Signal Invalid
DTC	B0091-95	Left Side Restraints Sensor - Incorrect Assembly

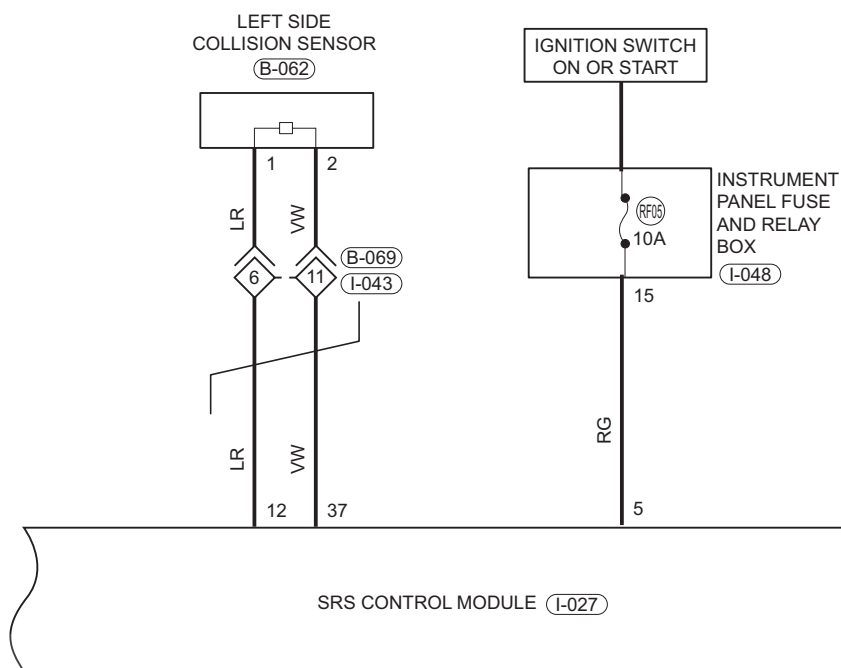
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

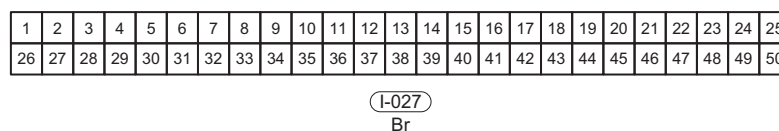
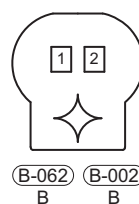
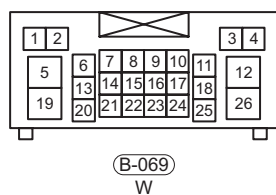
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM



45



ET15440150

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0091-12	Left Side Restraints Sensor	- Sensor pin is grounded - Sensor has self-check function: Once fault is detected, sensor will output it - The fault will be detected when a wrong sensor is connected - Any communication error will cause the fault, such as peer fault, long wrong data frame, etc.	Malfunction indicator ON	System short-circuit current occurs
B0091-13				Sensor that needs to connect is not connected
B0091-16				System short-circuit current occurs
B0091-96				Sensor is damaged
B0091-91				Wrong sensor is used
B0091-86				Electrical characteristics of sensor is affected by environment
B0091-95				

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check sensor

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace collision sensor with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists.

OK**Replace collision sensor****NG****Go to next step****NEXT****45****2 Check for a short circuit to power supply in wire harness connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left side collision sensor connector.
- Using ohm band of multimeter, check for continuity between I-027 (12) and battery positive (+), and continuity between I-027 (37) and battery positive (+) separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (12) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (37) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT

3

Check for a short circuit to ground in wire harness connector

Use circuit diagram as a guide to perform the following procedures:

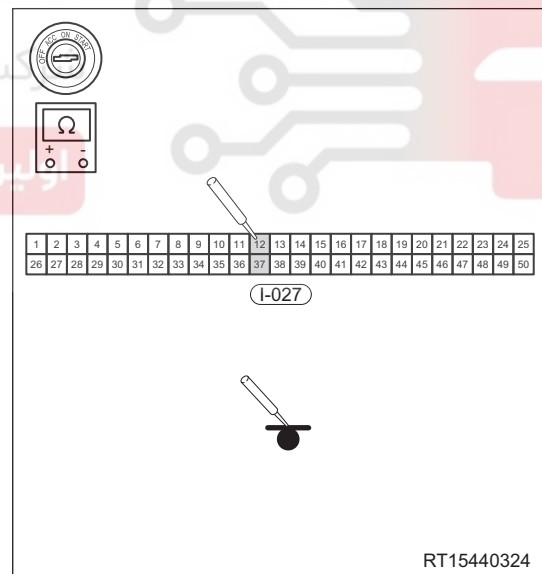
- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left side collision sensor connector.
- Using ohm band of multimeter, check for continuity between I-027 (12) and ground, and continuity between I-027 (37) and ground separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (12) - Ground	Engine switch OFF	No continuity
I-027 (37) - Ground	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to ground



45

4

Check for a open circuit in wire harness connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and left side collision sensor connector B-062.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

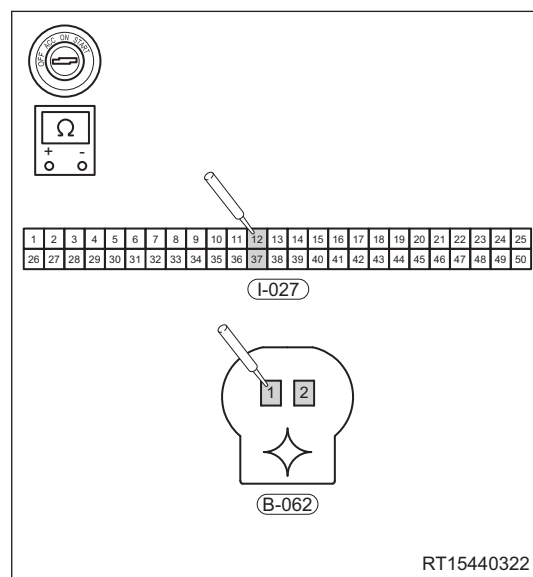
- c. Using ohm band of multimeter, check for continuity between I-027 (12) and B-062 (1), and continuity between I-027 (37) and B-062 (2) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (12) - B-062 (1)	Engine switch OFF	Continuity
I-027 (37) - B-062 (2)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.



NG

Repair or replace wire harness or connector that is opened

OK

Replace airbag module

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B0096-12	Right Side Restraints Sensor - Circuit Short to Battery
DTC	B0096-13	Right Side Restraints Sensor - Circuit Open
DTC	B0096-16	Right Side Restraints Sensor - Circuit Voltage Below Threshold
DTC	B0096-96	Right Side Restraints Sensor - Component Internal Failures
DTC	B0096-91	Right Side Restraints Sensor - Parametric
DTC	B0096-86	Right Side Restraints Sensor - Signal Invalid
DTC	B0096-95	Right Side Restraints Sensor - Incorrect Assembly

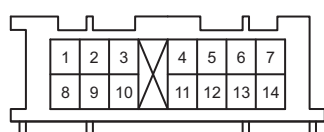
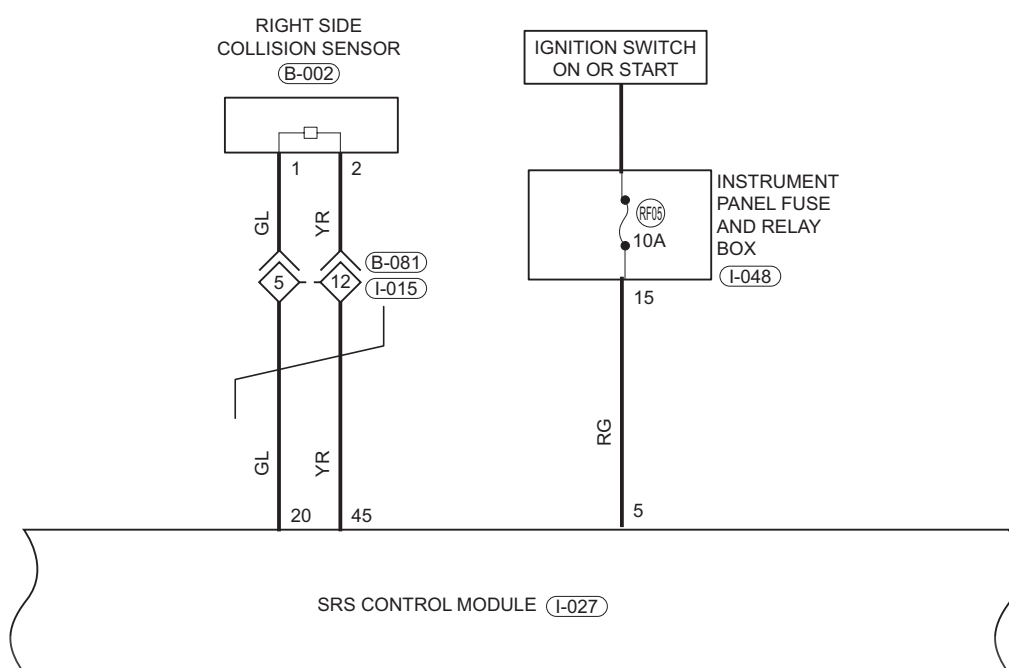
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

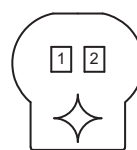
اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM



(B-081)
W



(B-002)
B

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

(I-027)
Br

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45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B0096-12	Right Side Restraints Sensor	Short to power supply in circuit	Malfunction indicator ON	System short-circuit current occurs
B0096-13		Open circuit		Sensor that needs to connect is not connected
B0096-16		Short to ground in circuit		System short-circuit current occurs
B0096-96		Sensor internal fault		Sensor is damaged
B0096-91		Parameter fault		Wrong sensor is used
B0096-86		Invalid signal		Electrical characteristics of sensor is affected by environment
B0096-95		Configuration error		Wrong sensor is used

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1 Check sensor

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Replace collision sensor with a new one, connect the negative battery cable, turn engine switch to ON, and use X-431 3G diagnostic tester to read DTCs to observe if DTC exists. If exists, it indicates that there is no problem in collision sensor, and a further inspection is needed.

OK**Replace collision sensor****NG****Go to next step****45****NEXT****2 Check for a short circuit to power supply in wire harness connector**

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right side collision sensor connector.
- Using ohm band of multimeter, check for continuity between I-027 (20) and battery positive (+), and continuity between I-027 (45) and battery positive (+) separately.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (20) - Battery positive (+)	Engine switch OFF	No continuity
I-027 (45) - Battery positive (+)	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to power supply

OK

Go to next step

NEXT

3

Check for a short circuit to ground in wire harness connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right side collision sensor connector.
- Using ohm band of multimeter, check for continuity between I-027 (20) and ground, and continuity between I-027 (45) and ground separately.

Specified Condition

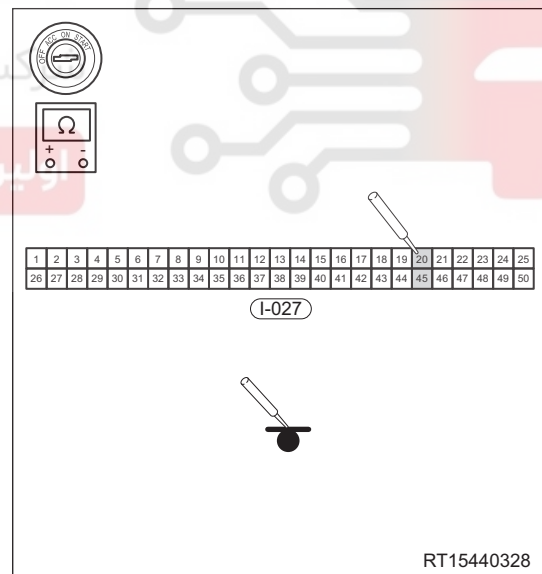
Multimeter Connection	Condition	Specified Condition
I-027 (20) - Ground	Engine switch OFF	No continuity
I-027 (45) - Ground	Engine switch OFF	No continuity

NG

Repair or replace wire harness or connector that is shorted to ground

OK

Go to next step



45

NEXT

4

Check for a open circuit in wire harness connector

Use circuit diagram as a guide to perform the following procedures:

- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect airbag module connector I-027 and right side collision sensor connector B-002.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

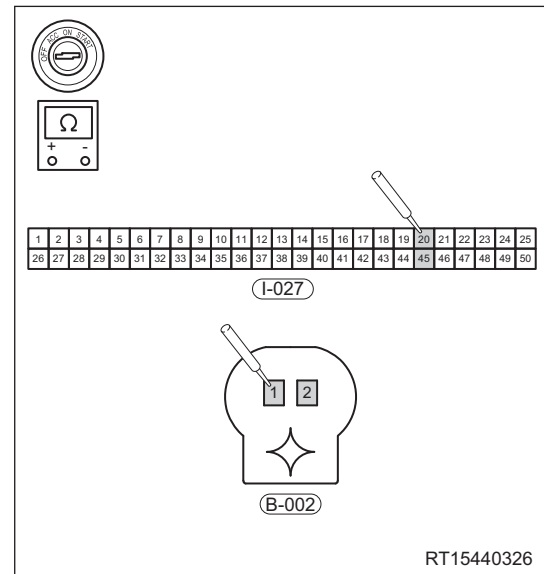
- c. Using ohm band of multimeter, check for continuity between I-027 (20) and B-002 (1), and continuity between I-027 (45) and B-002 (2) separately.

Specified Condition

Multimeter Connection	Condition	Specified Condition
I-027 (20) - B-002 (1)	Engine switch OFF	Continuity
I-027 (45) - B-002 (2)	Engine switch OFF	Continuity

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.



RT15440326

NG

Repair or replace wire harness or connector that is opened

OK

Replace airbag module

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B1271-47	Crash Belt Pretensioners - Watchdog/Safety μ C Failure
DTC	B1272-47	Crash Left Side - Watchdog/Safety μ C Failure
DTC	B1273-47	Crash Right Side - Watchdog/Safety μ C Failure
DTC	B1216-47	Crash Front - Watchdog/Safety μ C Failure
DTC	B127F-47	Crash Recording Locked - Watchdog/Safety μ C Failure

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B1271-47	Crash Belt Pretensioners	Occurs after replacing controller	Malfunction indicator ON	Front collision has occurred
B1272-47	Crash Left Side			Left side collision has occurred
B1273-47	Crash Right Side			Right side collision has occurred
B1216-47	Crash Front			Front collision has occurred
B127F-47	Crash Recording Locked			Airbag deployment event has been recorded

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

CAUTION

- Controller must be replaced once above DTCs occur, as these DTCs occur after collision.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	B1215-00	Squib Cross Coupling Error
DTC	B1230-79	Satellite Cross Link - Mechanical Linkage Failure
DTC	B1240-00	ICM Airbag Lamp Failed
DTC	U0140-87	Lost Communication with Body Control Module - Missing Message
DTC	U0129-87	Lost Communication with Brake System Control Module - Missing Message
DTC	B120F-48	This Fault is Invalid and Shall Not Occurred - Supervision Software Failure
DTC	B1251-00	ECU Internal Error

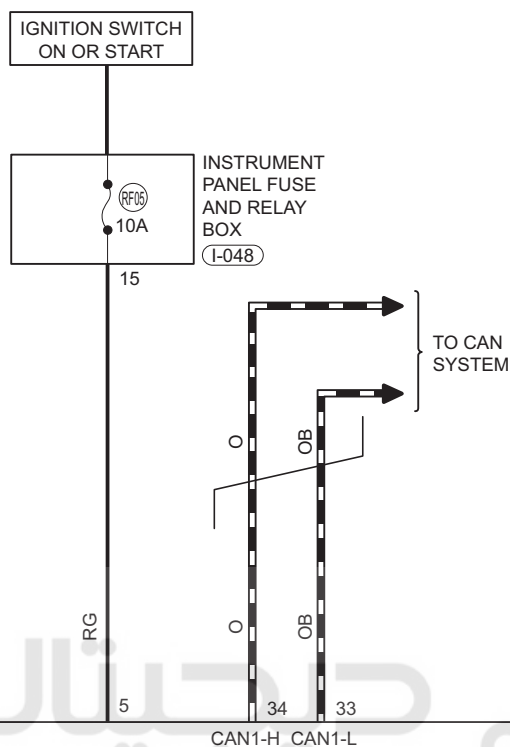
دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM



شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

45

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

(I-027)
Br

ET15440180

45 - SUPPLEMENTAL RESTRAINT SYSTEM

DTC	DTC Definition	DTC Detection Condition	DTC Set Condition	Possible Cause
B1215-00	Squib Cross Coupling Error	Airbag circuit is connected in series	Warning light ON	Different ignition circuits are connected
B1230-79	Satellite Cross Link	Sensor is connected in series	Warning light ON	Different sensor wire harnesses are connected
B1240-00	ICM Airbag Lamp Failed	Incorrect signal value from airbag light on instrument panel	Warning light ON	BCM or instrument cluster failure
U0140-87	Lost Communication with Body Control Module	No BCM signal is received	Warning light OFF	BCM failure
U0129-87	Lost Communication with Brake System Control Module	No BSM signal is received	Warning light OFF	BSM failure
B120F-48	This Fault is Invalid and Shall Not Occurred	Unknown error occurs	Warning light ON	ECU invalid failure
B1251-00	ECU Internal Error	Hardware damage	Warning light ON	ECU internal error

HINT:

- When performing circuit diagnosis and test, always refer to the circuit diagram for specific circuit and component information.

1**Use multimeter to check resistance of CAN line**

Use circuit diagram as a guide to perform the following procedures:

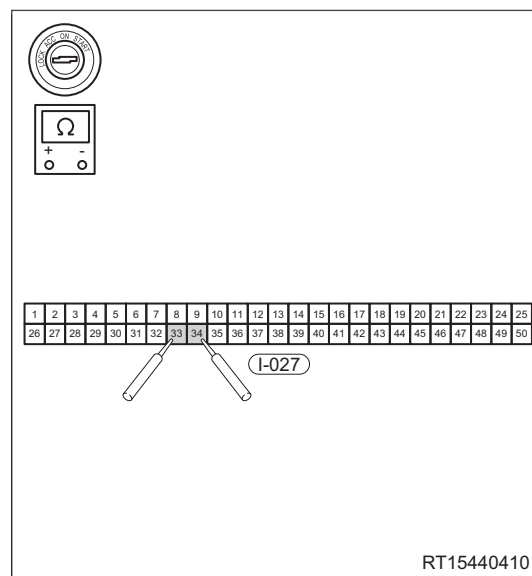
- Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- Disconnect the airbag module connector I-027.
- Using ohm band of multimeter, measure resistance between I-027 (34) and I-027 (33) of airbag module connector.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
I-027 (34) - I-027 (33)	Engine switch OFF	120 Ω

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal



RT15440410

45 - SUPPLEMENTAL RESTRAINT SYSTEM

between terminals and short spring plate to disconnect the connection.

NG

Check or replace wire harness and connector

OK

Go to next step

NEXT

2

Check airbag module

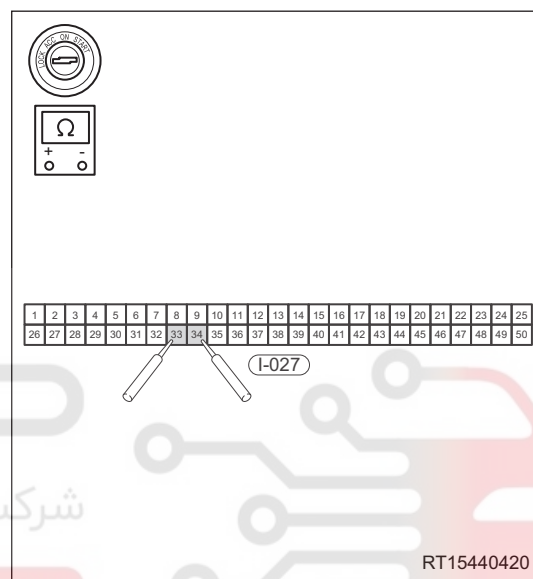
a. Connect the airbag module connector.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
I-027 (34) - I-027 (33)	Engine switch OFF	60 Ω

HINT:

- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.



NG

Replace airbag module

OK

Check other circuit faults of CAN network

45

ON-VEHICLE SERVICE

Driver Airbag Assembly

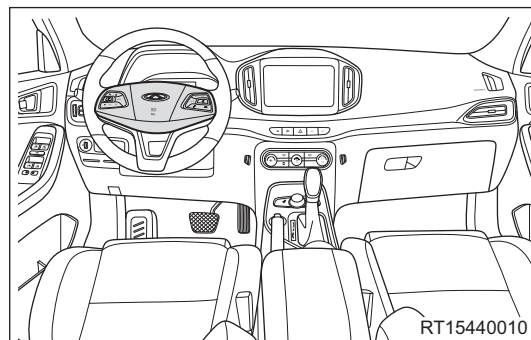
On-vehicle Inspection

1. Check the driver airbag assembly (vehicle is not involved in a collision and airbag is not deployed).

- a. Perform a diagnosis system inspection.
- b. Perform visual inspection with driver airbag assembly installed on vehicle:

Check for cuts, cracks or discoloration on outer surface and grooved portion of driver airbag assembly.

If any defect above is found, replace driver airbag assembly with a new one.



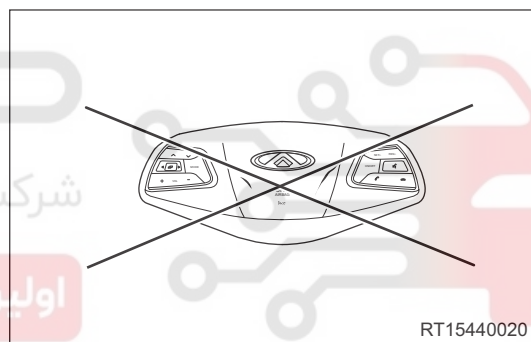
2. Check the driver airbag assembly (vehicle is involved in a collision and airbag is not deployed).

- a. Perform a diagnosis system inspection.
- b. Perform visual inspection with driver airbag assembly removed from vehicle:

Check for cuts, cracks or discoloration on outer surface and grooved portion of driver airbag assembly.

Check wire harnesses for cuts and cracks, and if connectors are chipped.

Check steering wheel for deformation.



CAUTION

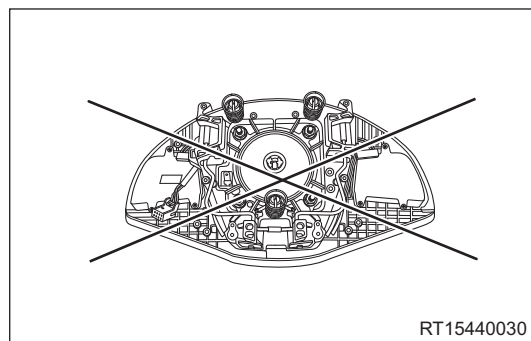
- Be sure to follow correct procedures to remove and install driver airbag assembly.

45

HINT:

If driver airbag assembly contact plate is deformed, never repair it. Always replace with a new one.

There should not be any contact between driver airbag assembly and steering wheel, and keep an uniform clearance all around, when installing new driver airbag assembly onto the steering wheel.



Removal



ENVIRONMENTAL PROTECTION

- Handle airbag assembly and airbag control module assembly carefully, and never tap or strike them fiercely.
- Removal, inspection and installation of airbag system must meet relevant requirements and specifications, and never perform operation casually.
- Removed airbag assembly should be kept properly with face up. Store the airbag in a place with enough spare space to prevent accidental airbag deployment.

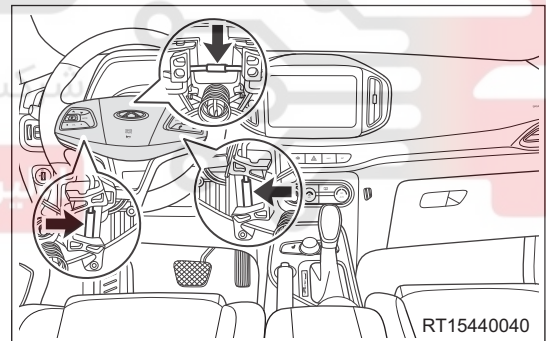
1. Turn off all electrical equipment and the engine switch.
2. Disconnect the negative battery cable.



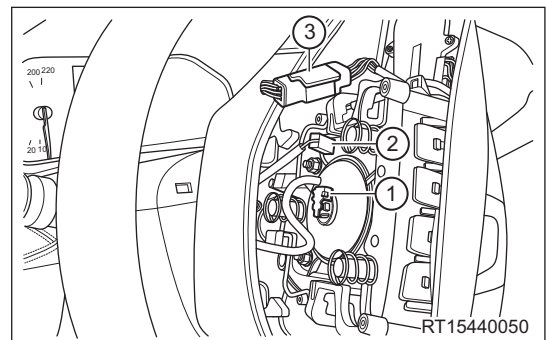
WARNING

- Wait at least 90 seconds after disconnecting the negative battery cable to disable supplementary restraint system.

3. Remove the driver airbag assembly.
 - a. Position the front wheels straight ahead.
 - b. Using a flat tip screwdriver wrapped with protective tape, push the driver airbag assembly snap springs (arrow) from service hole on both sides of steering wheel.



- c. Disengage the driver airbag assembly from steering wheel carefully, and support the driver airbag assembly stably by hand.
- d. Disconnect driver airbag assembly wire harness connector (1), horn wire harness connector (2) and steering wheel quick button wire harness connector (3).



45 - SUPPLEMENTAL RESTRAINT SYSTEM

 CAUTION

- DO NOT pull airbag wire harness when removing driver airbag assembly.

 WARNING

- DO NOT damage airbag wire harness when handling airbag assembly wire harness connector.

e. Remove the driver airbag assembly.

Installation

- Installation is in the reverse order of removal.

 CAUTION

- Be sure to install snap springs in place during installation.
- Check that horn operates normally after installation.
- Check SRS warning light after installation, and make sure that supplemental restraint system operates normally.

Disposal

Always dispose of airbag together with vehicle which is equipped with supplemental restraint system. Otherwise, the airbag will be in chemical and physical hazard. Failure to handle it properly will cause personal injury. Do not dispose of airbag by oneself, and always contact the professional service department to perform disposal.

Spiral Cable

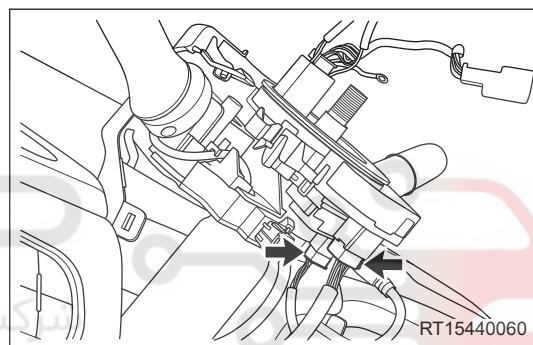
Removal

1. Turn off all electrical equipment and the engine switch.
2. Disconnect the negative battery cable.

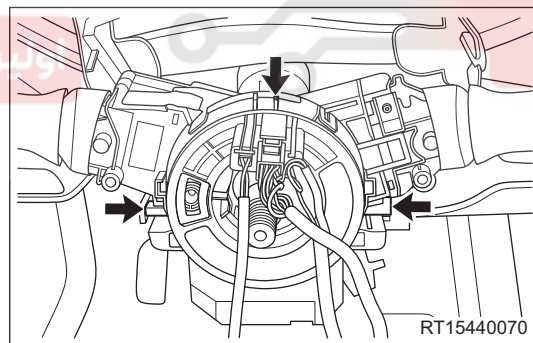
WARNING

- Wait at least 90 seconds after disconnecting the negative battery cable to disable supplementary restraint system.

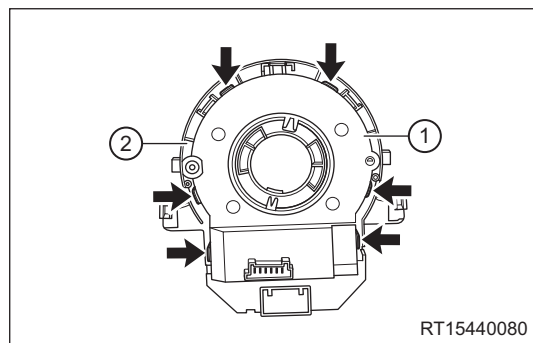
3. Position the front wheels straight ahead.
4. Remove the steering wheel assembly (See page 41-8).
5. Remove the combination switch cover assembly (See page 41-11).
6. Remove the spiral cable.
 - a. Disconnect spiral cable wire harness connector and angle sensor connector (arrow).



- b. Detach fixing claws (arrow) between spiral cable and combination switch assembly.



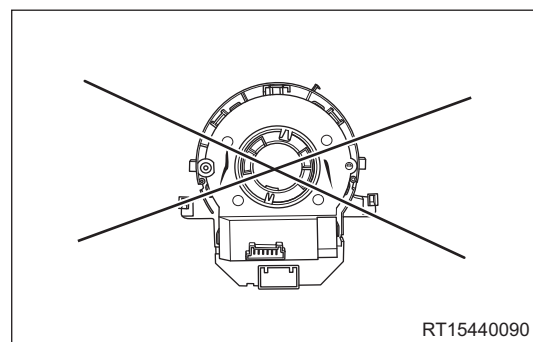
- c. Detach angle sensor fixing claws and separate angle sensor (1) and spiral cable (2).



45 - SUPPLEMENTAL RESTRAINT SYSTEM

Inspection

1. Check the spiral cable.
 - a. Check that there are no scratches or cracks on connectors, and/or no cracks, dents or chipping on the cable.
 - b. If there are scratches, cracks, dents or cuts on connectors or spiral cable, replace spiral cable with a new one.



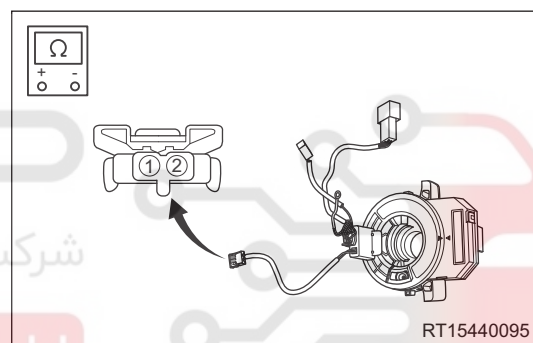
2. Check driver frontal airbag connector and connector between spiral cable.

Use circuit diagram as a guide to perform the following procedures:

- a. Turn engine switch to OFF, disconnect the negative battery cable and wait for at least 90 seconds.
- b. Disconnect spiral cable connector I-004 and driver frontal airbag connector.
- c. Using a multimeter, check for continuity between driver frontal airbag and connector I-004.

Specified Condition

Multimeter Connection	Condition	Specified Condition
Frontal airbag (1) - I-004 (1)	Engine switch OFF	Continuity
Frontal airbag (2) - I-004 (9)	Engine switch OFF	Continuity



If result is not as specified, replace spiral cable assembly.

HINT:

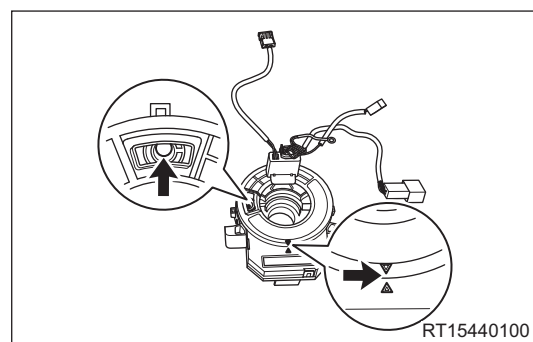
- An activation prevention mechanism is built in airbag system connector. When connector is disconnected, this mechanism cuts off circuit by bringing short spring plate into contact with terminals, thus insulating the circuit from external power supply to prevent accidental airbag activation.
- To release activation prevention mechanism, insert a piece of paper with the same thickness as terminal between terminals and short spring plate to disconnect the connection.

Installation

Installation is in the reverse order of removal.

HINT:

Always install spiral cable correctly according to matchmarks on spiral cable and steering column (fully turn spiral cable in a direction slowly, then turn it in the opposite direction until yellow ball appears in transparent neutral window and arrow marks align with each other), otherwise the spiral cable may be damaged.



 CAUTION

- Always install spiral cable correctly according to specified operating instructions.
- DO NOT rotate the spiral cable over specified turns to prevent it from breaking.
- Be sure to install fixing claws in place when installing spiral cable.
- Check that horn operates normally after installation.
- Check SRS warning light after installation, and make sure that supplemental restraint system operates normally.

دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



45 - SUPPLEMENTAL RESTRAINT SYSTEM

Front Passenger Airbag Assembly

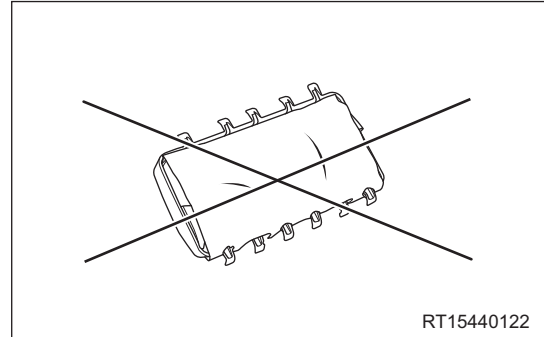
On-vehicle Inspection

1. Check the front passenger airbag assembly (vehicle is involved in a collision and airbag is not deployed).
 - a. Perform a diagnosis system inspection.
 - b. Perform visual inspection with front passenger airbag assembly removed from vehicle:

Check for cuts, cracks or wear on front passenger airbag assembly.

Check for cracks or other damage on connector.

Check instrument panel or instrument panel crossmember assembly for deformation or damage. If any defect above is found, replace front passenger airbag assembly with a new one.



WARNING

- Be sure to follow correct procedures to remove and install front passenger airbag assembly.

Removal

CAUTION

- Handle airbag assembly and airbag control module assembly carefully, and never tap or strike them fiercely.
- Removal, inspection and installation of airbag system must meet relevant requirements and specifications, and never perform operation casually.
- Removed airbag assembly should be kept properly with face up. Store the airbag in a place with enough spare space to prevent accidental airbag deployment.

45

1. Turn off all electrical equipment and the engine switch.
2. Disconnect the negative battery cable.

WARNING

- Wait at least 90 seconds after disconnecting the negative battery cable to disable supplementary restraint system.

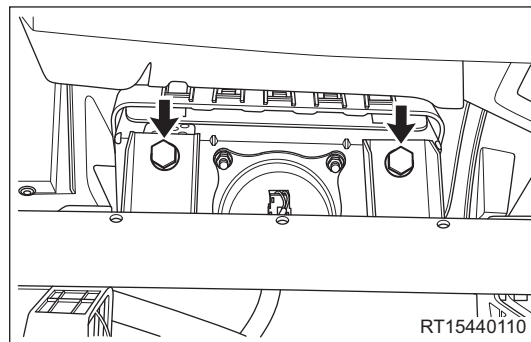
3. Remove the glove box assembly ([See page 60-14](#)).

45 - SUPPLEMENTAL RESTRAINT SYSTEM

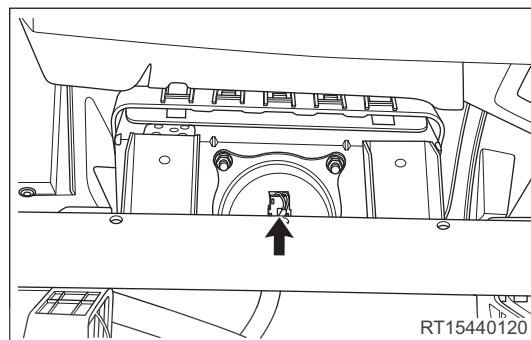
4. Remove the front passenger airbag assembly.

- a. Remove 2 coupling bolts (arrow) between front passenger airbag assembly and instrument panel crossmember assembly.

(Tightening torque: 23 ± 2 N·m)



- b. Disconnect the front passenger airbag assembly wire harness connector (arrow).

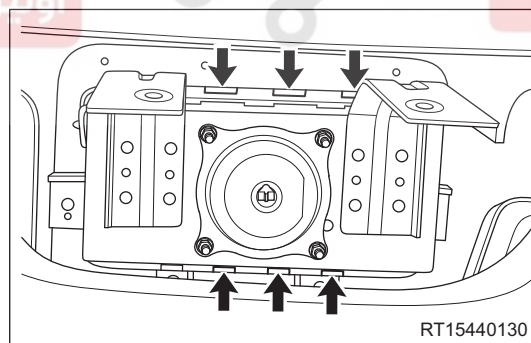


⚠ WARNING

- DO NOT damage the airbag assembly wire harness when handling airbag assembly wire harness connector.

- c. Remove the instrument panel body assembly (See page 60-14).

- d. Using a flat tip screwdriver wrapped with protective tape, slightly pry the fixing claws (arrow) around the front passenger airbag assembly mounting bracket to separate it from the instrument panel body assembly.



- e. Remove the front passenger airbag assembly.

45 - SUPPLEMENTAL RESTRAINT SYSTEM

Installation

Installation is in the reverse order of removal.

CAUTION

- Before installing tightening bolts, always make sure that airbag wire harness is not hold down or stuck. Adjust if necessary and install it in place.
- Make sure to tighten fixing bolts to specified torques during installation.
- When installing front passenger airbag assembly, first slide the hook on one side into locating hole in airbag box, and then press in hook on the other side firmly, making sure that hooks on both sides enter the corresponding locating holes correctly.
- Always keep vehicle power off during installation. It is forbidden to install the front passenger airbag assembly with vehicle power on.
- Check SRS warning light after installation, and make sure that supplemental restraint system operates normally.

Disposal

Always dispose of airbag assembly together with vehicle which is equipped with supplemental restraint system. Otherwise, the airbag will be in chemical and physical hazard. Failure to handle it properly will cause personal injury. Do not dispose of airbag by oneself, and always contact the professional service department to perform disposal.

دیجیتال خودرو

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