

Fundamental principle of safety airbag system

Precautions

Warning:

■Airbags can explode accidentally and cause severe damage, if you don't operate as correct procedures while maintaining.

■Airbags may not be exploded and cause severe damage while maintaining

■Before maintenance (including remove, install, exam and replace parts), following tips must be obeyed, and operate according to Maintenance Manual

1. Do not decompose airbag component, including driving and passenger side airbag.

2. Do not maintain the following parts, only replace

1) Driving side airbag

2) Passenger side airbag

3) Safety belt tenser

4) Safety airbag control module;

5) Clock spring

3. Do not expose airbag under high temperature or near flame

4. If airbags are stained by liquid such as grease/detergent/engine oil/water, they should be wiped by dry cloth immediately

5. Do not let airbags fall down Do not use airbags that has fallen down

6. Use original parts from authorized distributor,only.

7. If decompose airbags, put them on even place, Do not load any goods on its top.

8. Verify if the replacement ID no. is correct. Do not use the component of other cars as the substitute.

9. Remember to dispose airbags before discarding cars or safety airbags.

10. After the detonation of safety airbag, the charging device would become very hot, and won't be handled until it naturally cools down. Do not lower the temperature with water.

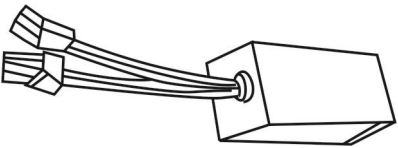
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11. It is prohibited to measure the electric resistance of safety airbag module as this may detonate the safety airbag.

Preparations

Common and special tools necessary for the maintenance

List of Special Tools

Tool	Diagram	Purpose
Simulator		Simulator-joint of for check of harness resistance

Summary of Safety Airbag System

The safety airbag system is composed of the main safety airbag, passenger safety airbag, clock spring, safety airbag module, explosive released pretensioner of driver-sided safety belt and passenger-sided safety belt, side airbag switch of passenger side. The passenger airbag can be turned off temporarily by the switch off passenger airbag button, which will turn on the PAB (passenger Safety airbag) warning light on the dashboard. If driver doesn't fasten safety belt, ETACS will receive signal and alarm light on dashboard will turn on. If the driver fastens the safety belt, the alarm light of safety belt will turn off.

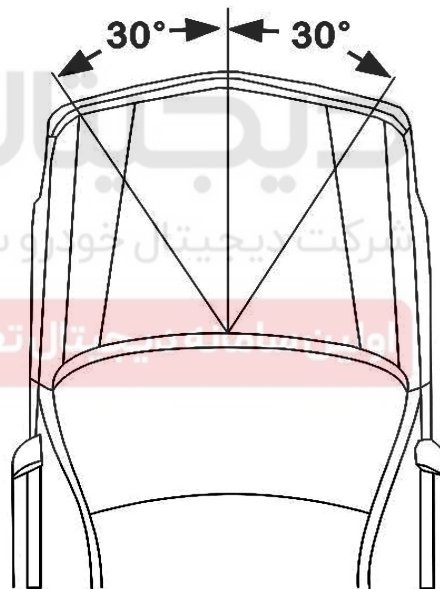
When the ignition switch turns to 2nd gear, safety airbag system activates, ECU will check as fixed procedure automatically. If the alarm light is off after 4 seconds, it means the system is normal after self-check, then ECU will start monitoring. if the alarm light flash or keeps on, it means self-check fails and system is abnormal. During the normal process of driving (incl. all road condition and interferences), ECU does not give the ignition order, the airbag plays no roll; In case of severe forward collision, ECU will issue in time the incentive ignition, stimulating the airbag component to open the airbag and absorbing the partial impact energy from the driver and front row passenger, alleviating the possible damage of passenger. driving and passenger side

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safety belt precaution device will be activated, safety belt will be tightened, pulling passenger who are away from seats because of inertia back to seats to protect them.

Fundamental principle of safety airbag system

Condition of safety airbag opening

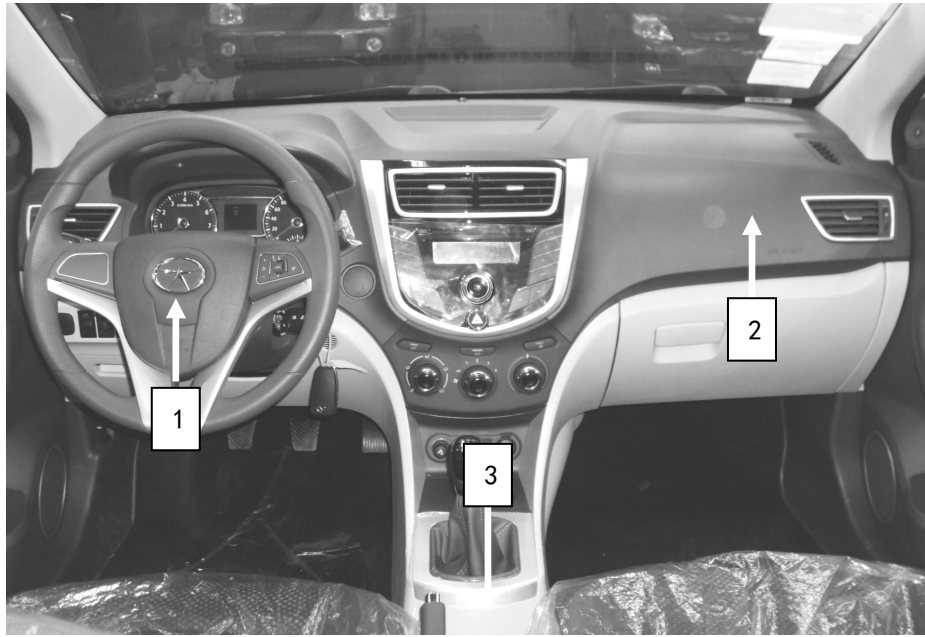


Impact Angle Diagram Enabling the Opening of Safety Airbag

The frontal impact in sufficient power occurred within the range at 30° deviation from the centerline of car may open the airbag.

Layout of Safety Airbag System Components

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Layout of Safety Airbag Components

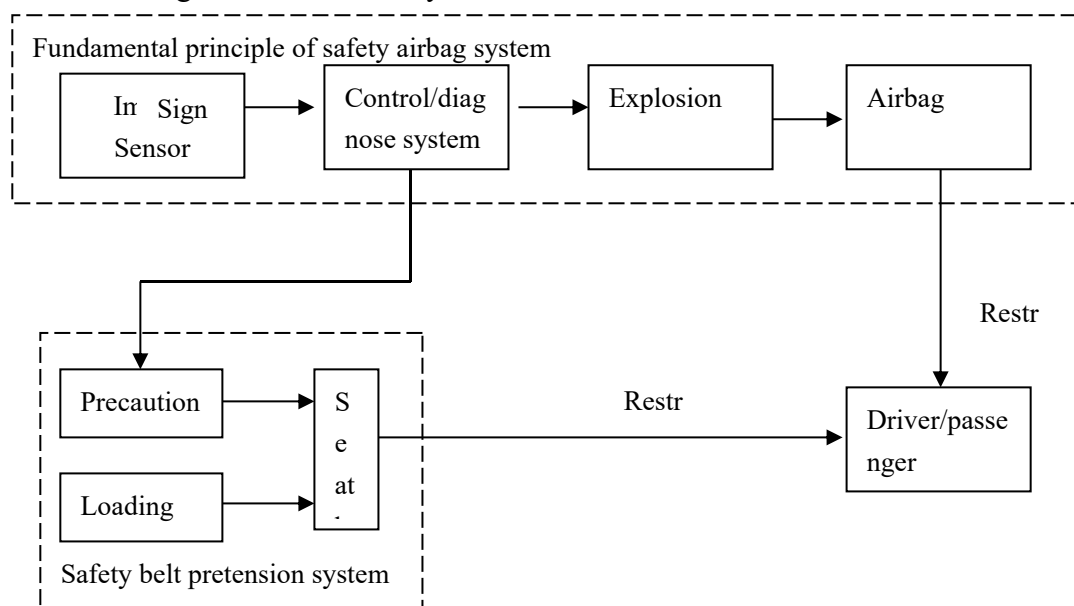
1-driving airbag 2-passenger airbag 3-Safety airbag control module position

3. Principle of restraint system

Collision of car will cause abrupt change in the speed. Due to the inertia effect, the passenger in the car continues to move forward, causing the impact between the inboard passenger and interior panels. The Passenger Restraint System (SRS) is designated to use the restraint system (incl. the seats, safety belt and safety airbag etc.)

to prevent or decrease the injury caused by the impact between the passenger and interior panels.

1) Schematic Diagram of Restraint System

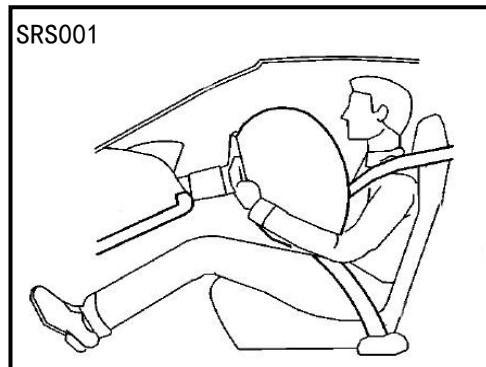


SRS-4

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2) Principle of safety airbag

Prior to the impact occurred between the inside passenger and hardware, an air-charged airbag is rapidly inserted between the passenger and the hardware, absorbing the dynamic energy of passenger with the air bag inherent permeability and the exhaust throttling of deflating hole, retarding the violent impact and isolating the passenger from the interior hardware to protect passenger .



3) Principle of safety belt

At first, retract instantly, at the first time of the accident occurrence, the passenger will be “pressed” down on the seats by the impact acceleration, inclination angle of car and acceleration of webbing straining;

Then appropriately relax, the safety belt properly loosened until the impact peak elapsed, or passenger subject of the airbag protection.

Driver Side Airbag

1. Components

Driver side airbag is located on the steering wheel.



2. Specification

■Airbag capacity: 50L

Note:

■The front face of pad shall face upwards, when old driver side airbag is demounted or new airbag is mounted.

■It is not allowed to measure the electric resistance of airbag, which may possibly give rise to accidental ignition of airbag.

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■The driver side airbag shall be stored in a place with ambient temperature lower than 80°C and far away from electrical noise.

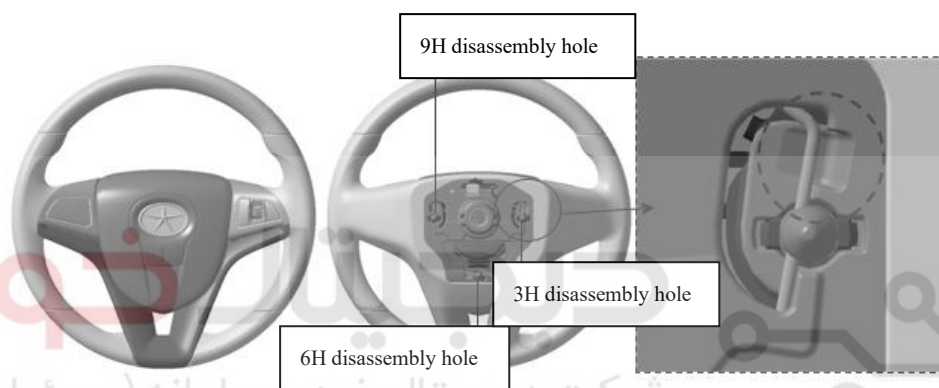
■During the welding operation, the negative (-) of battery should be turned off and the connector of airbag disconnected.

■When discarding car or safety airbag, the special tool should be used to detonate the airbag.

3. Removal

1) Disconnect the negative pole (-) of battery for more than 3 minutes.

Disconnect DAB



2) Schematic diagram of disconnecting DAB(3 steps), disconnecting tool is a straight screwdriver with length of 15cm.

Disconnect 3H hole

Rotate handwheel 90°anticlockwise, disconnect 3H hole's Groove with screwdriver (for detailed structure showed in diagram)

Disconnect 6H hole

Rotate handwheel 90°anticlockwise, disconnect 6H hole's Groove with screwdriver (for detailed structure showed in diagram)

Disconnect 9H hole

Put the driving wheel back to middle, rotate it 90°clockwise, disconnect 6H hole's Groove with screwdriver(for detailed structure showed in diagram)

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3) Disassemble the connector and take out the safety airbag module.



4) Place the safety airbag module properly as required, shown as in figure.



4. Installation

Installation is in the opposite order of removal.

Front Passenger Side Airbag

1. Component schematic

Front passenger side airbag is embedded on the passenger side instrument panel.

Driver side instrument panel



Note:

■ Please don't put or paste anything on the surface of airbag.

2. Specification

■ Airbag capacity: 90L

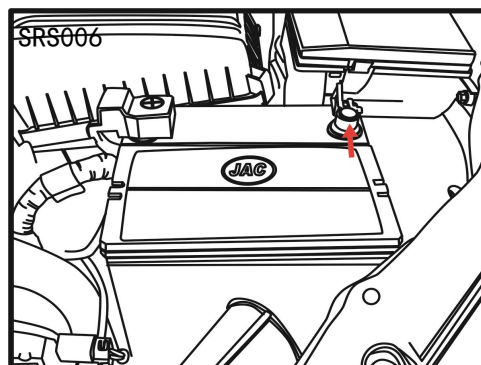
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Note:

- Please refer to the “Driver Side Airbag” for notices.

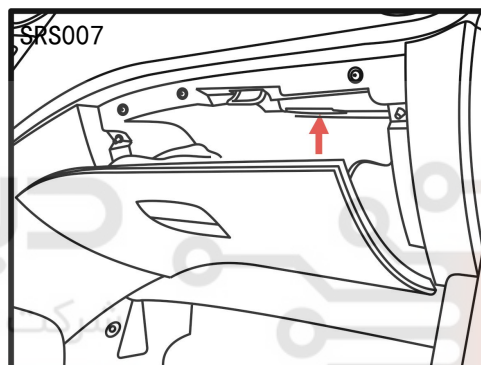
3. Removal:

- 1) Disconnect the negative pole(-) of battery for more than 3 minutes.

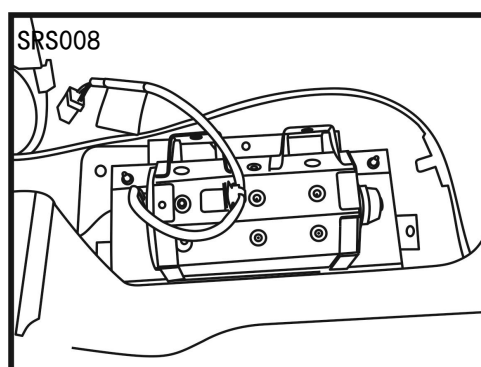


- 2) Remove the glove box.

- 3) Remove the lamp of glove box.



- 4) Remove 2 screws fixing Passenger-sided safety airbag; disconnect wiring connector, bring down passenger side airbag



4. Installation

Installation is in the opposite order of removal.

Safety belt

Note:

- Make sure Retractor won't be damaged when remove safety airbag.

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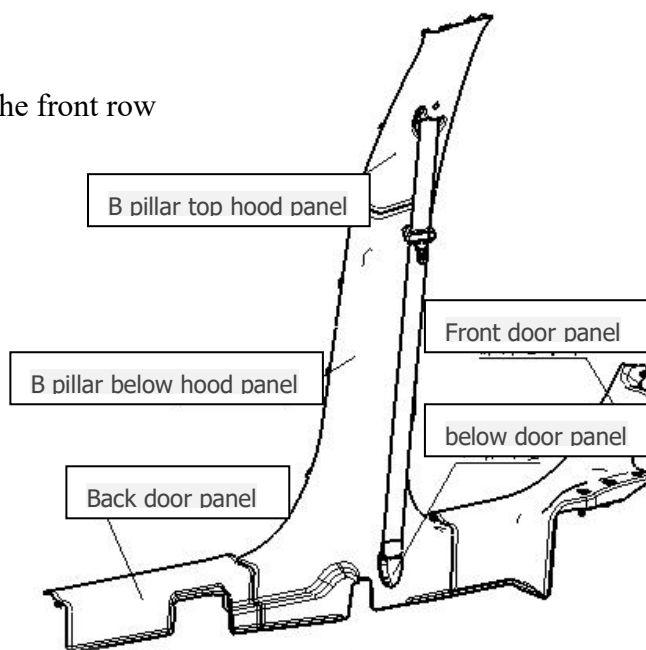
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■ Replace the damaged buckle on fender apron

■ Adjust height

1. Safety belt in the front row

1) Removal



① First, remove shield both in front door and back door

② Remove lower cover, twist off lower fixing screw

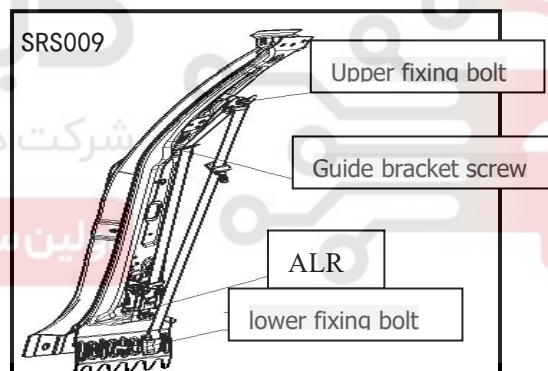
■ Stipulated torque: 45N.m-55N.m

③ Remove lower trim pane on B pillar

④ Remove upper trim panel on B pillar

⑤ Twist off upper fixing screw

■ Stipulated torque: 45N.m-55N.m.



⑥ Twist off screws, remove Retractor.

■ Stipulated torque: 45N.m-55N.m.

⑦ Twist off screw and bolt on guide bracket.

■ Stipulated torque: 6N.m-8N.m



2) Installation.

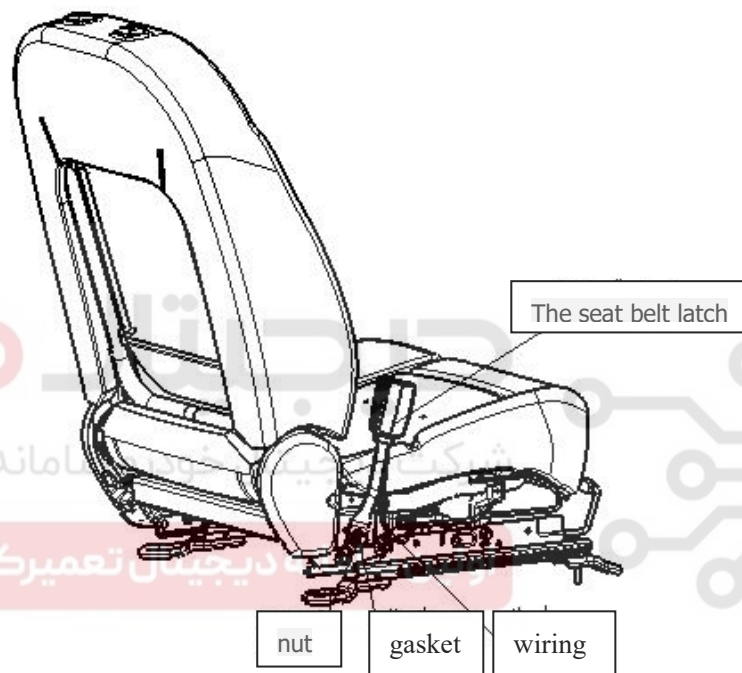
Installation is in the opposite order of removal.

2. Mortise lock of front safety belt

1) Removal

- ① Remove front seats (refer to seat)
- ② Bottom seat up, separate wiring plug (driver seat).
- ③ Twist off fixing screws, remove gasket and mortise lock of front safety belt.

■Stipulated torque: 45N.m-55N.m.



2) Installation

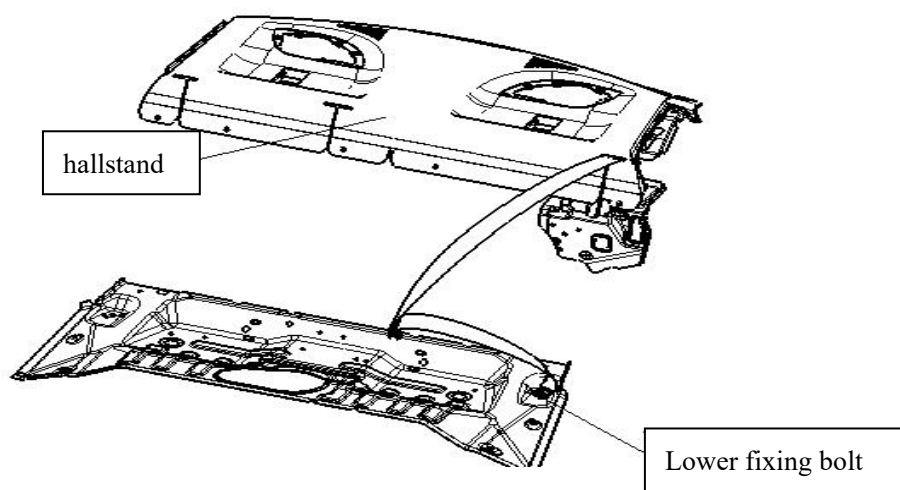
Installation is in the opposite order of removal.

3. Safety belt in the rear row

1) Removal

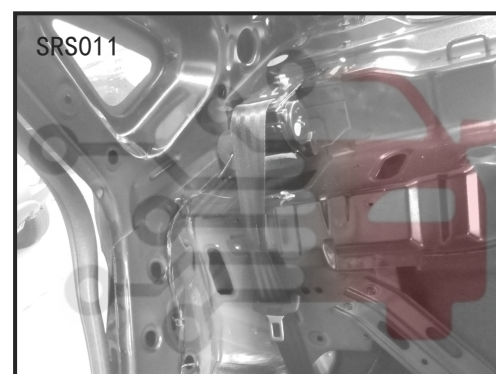
- ① Remove rear seats (Refer to Rear seat)
- ② Remove the coat rack.
- ③ Twist off fixing screw, remove lower fixing screws on rear safety belt.

■Stipulated torque: 45N.m-55N.m.



④ Twist off assembling bolt, remove rear safety belt, can refer to front safety belt.

■Stipulated torque: 45N.m-55N.m.



2) Installation

Installation is in the opposite order of removal.

4. Mortise lock on rear safety belt

1) Removal

- ① Remove rear seats (refer to Rear seat)
- ② Twist off fixing screw, remove buckle on safety belt.

■stipulated torque: 45N.m-55N.m.



2) Installation

Installation is in the opposite order of removal.

Safety belt pretensioner in the front row

1. Specification

■Ambient temperature of using gas Generator:-35℃～+105℃

Note:

■Aux. restraint system (e.g. “safety airbag” and “safety belt pretensioner”) and the safety belt used together, helping mitigating impact and injury risk of driver and the front-row passenger.

■To prevent and decrease the risk of being injured and death due to invalidation of safety airbag system, all maintenance operations should be made in the service center of JAC authorized shop.

■Improper maintenance, incl. incorrect removal and installation of safety belt pretensioner will cause the mis-action of the system, and result in the accidental personnel injury and death.

■Except the operations stated in the Manual, electrical test equipment is not allowed to use to test any of the circuits of safety airbag system.

2. Removal and installation of the safety belt pretensioner in the front row

Please refer to the “Removal and Installation of Front-Row Safety Belt”.

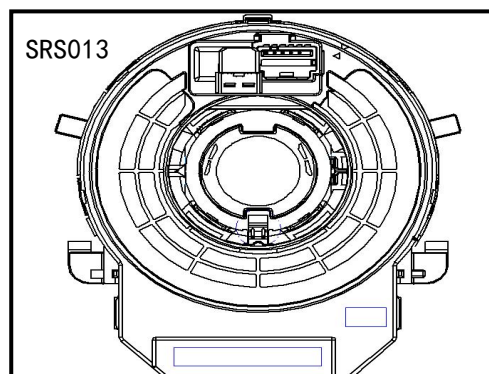
Note:

■Prior to the removal or installation, be sure that the ignition switch is off and the negative (-) of battery disconnected, then wait for more than 3 minutes.

■Do not use the electrical test equipment to test the pretensioner of safety belt

Safety airbag Timer-spring

1. 1.Component schematic

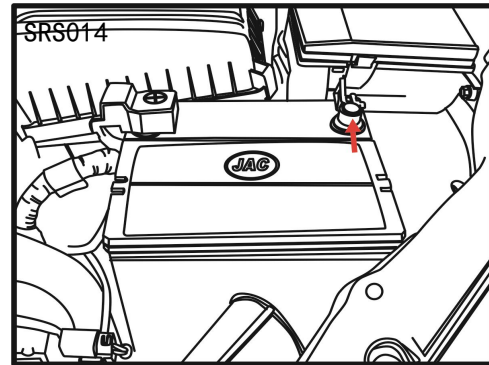


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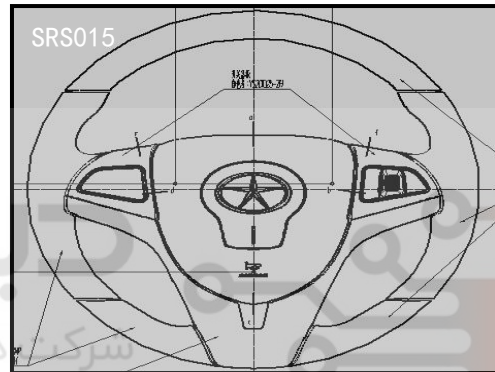
2. Safety airbag Timer-spring

1) Removal

① Disconnect the negative pole (-) of battery for more than 3 minutes.

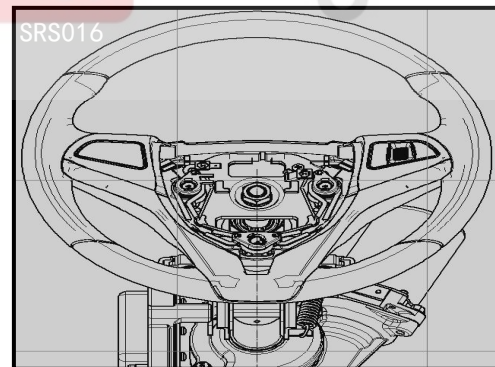


② Remove the driver safety airbag module, take off Connector.



③ Remove screws and take off steering wheel.

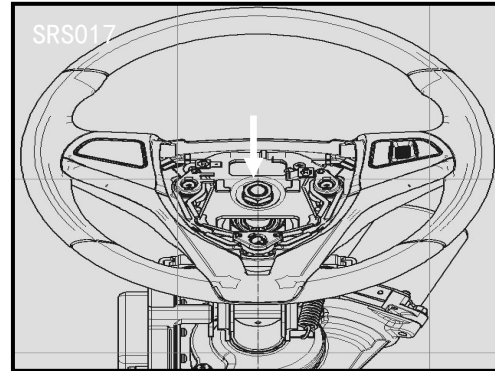
Steering wheel



Note:

■The fixing nuts can be fully taken out until the steering wheel is loosened, otherwise the steering wheel may cause personnel injury.

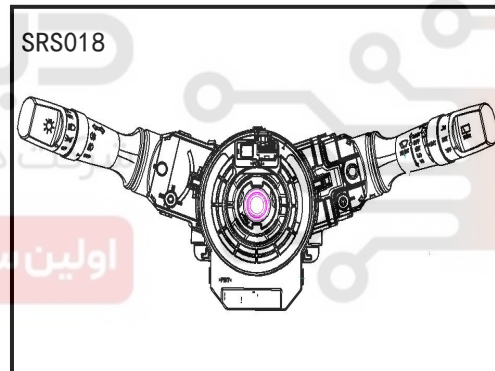
- ④ Disconnect the connector of horn.



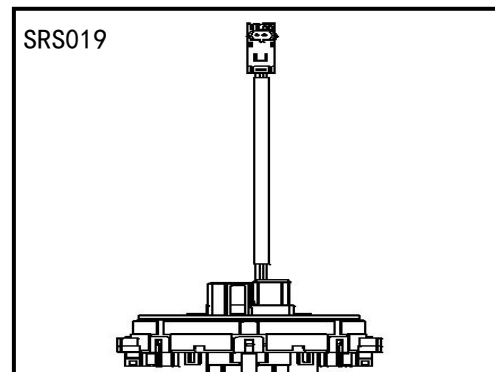
- ⑤ Poke the three bayonets embedded in combination switch of the clock spring

Note:

■ Be sure 3 bayonets completely loose, and then take off timer-spring, which needs to be careful because it is easily to get damaged.



- ⑥ Take out the timer-spring of safety airbag.



2) Installation

Install according to the reverse order of removal.

Note:

■ Take out the safety airbag timer-spring from the package and check if it is in intact state and the dowel pin inserted on the part.

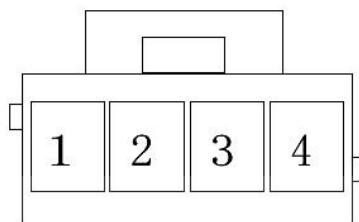
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■Open the connector cover, and insert the wiring connector of safety airbag into the connector hole, then close the cover.

■Prior to the installation of safety airbag timer-spring, be sure that the front wheel is located in the center (orientation).

■Prior to the installation of safety airbag timer-spring, be sure that the timer-spring is located in center (twist clockwise to the end, then turn back anticlockwise, for 2.5 cycles)

Definition of connector of timer-spring



M82

CLOCK SPRING-DRIVER AIRBAG
CONN: 7C83-6134-70 (YAZAKI)

CAV	CIRCUIT NBR	COLOR	WIRE SIZE	POS NBR2	CAV2
3	SR11A	OG	0.5	M84	11
4	SR10A	YR	0.5	M84	10

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Safety airbag control module (SDM)

1. Specification and function of the safety airbag control module (SDM)
 - 1) Induction of car collision.
 - 2) Detonation of driver- and passenger-sided safety airbags.
 - 3) Detonation of driver and passenger-sided pretensioning safety belts.
 - 4) Monitoring safety airbag system.
 - 5) Inform driver state of safety airbag system via the warning indicator: ready or malfunction.
 - 6) Run the diagnosis and maintenance through the serial diagnosis communication port.
 - 7) Record the impact related data and operating state of airbag system components after collision.
 - 8) Transmit impact signal to the ETACS module after collision and enable the ETACS module to open the locked door to ease passenger to escape.

2. Safety airbag control module (SDM) pins

M84

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

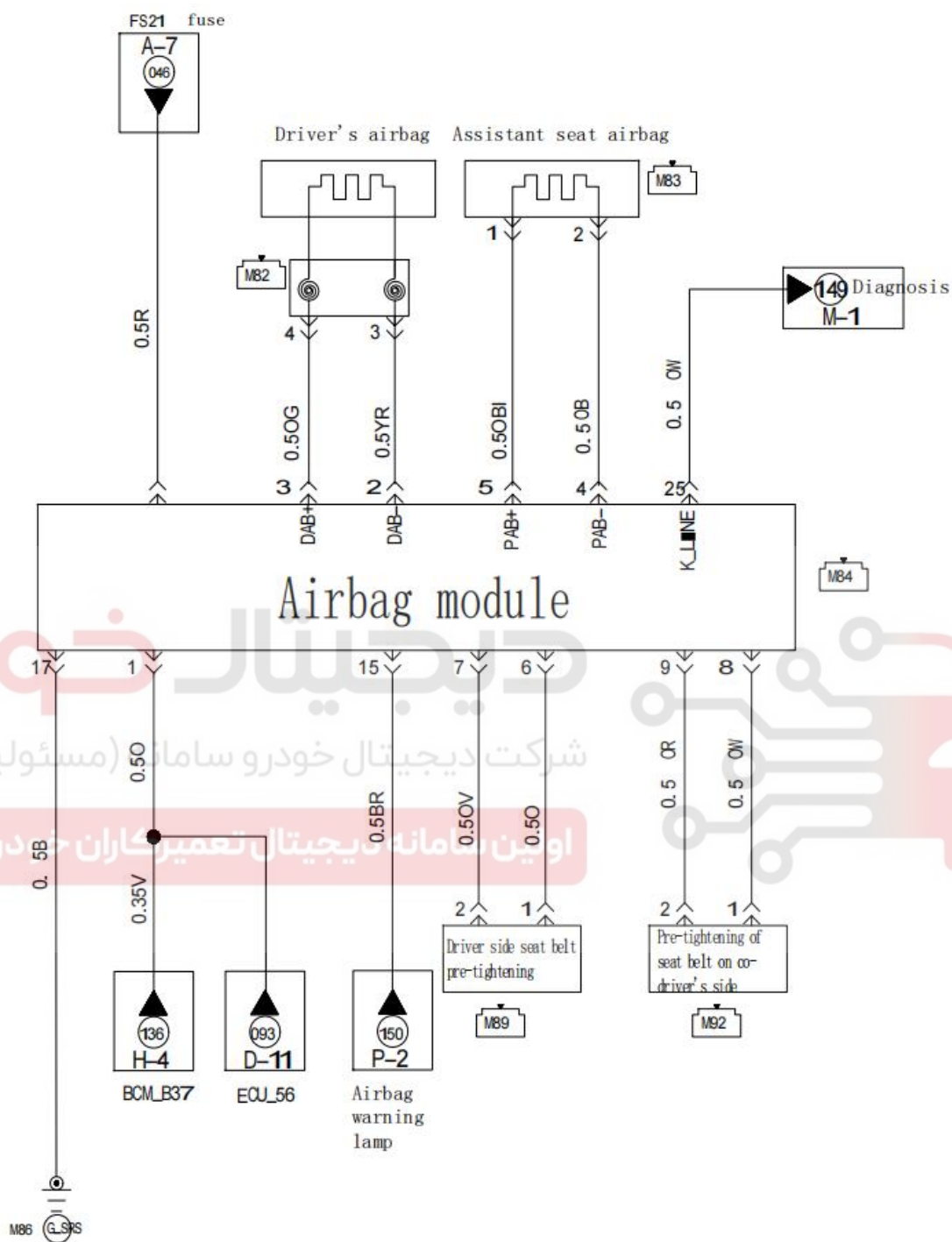
Description of SDM terminals

1	CRUSH-OUT	26	
2	DAB-	27	
3	DAB+	28	
4	PAB-	29	
5	PAB+	30	
6	DRV PRET+	31	\
7	DRV PRET-	32	\
8	PASS PRET-	33	
9	PASS PRET+	34	
10		35	
11		36	
12		37	
13		38	
14		39	
15	AIRBAG WARNING	40	
16		41	
17	GND	42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25	K-LINE	50	

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3. Circuit diagram of safety airbag



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Fault diagnosis

1. Safety airbag system diagnosis

After the ignition switch is turned to the position “ON”, the safety airbag indicator on the dashboard flashes for several seconds and goes out, it indicates the safety airbag system operates in normal condition. Provided the ignition switch is turned to the position “ON” and the safety airbag indicator doesn't flash or always flashes, it means there is failure in the airbag system. To further confirm the failure cause, special diagnostic scanner should be applied for diagnosis.

- 1) Fault code read by diagnostic scanner.
- 2) Maintenance implemented according to the prompt of fault code
- 3) Fault code elimination by diagnostic scanner.

Note:

■ After the failure elimination, the diagnostic scanner has to be used to clean out the fault code left in the system.

2. Table of Trouble Codes

Trouble code	Trouble description
B1000	ECU internal fault
B1001	Configuration error
B0026	Too high resistance value of driver's safety airbag
B0022	Too low resistance value of driver's safety airbag
B0024	Line-to-ground short-circuit or line contact of driver's safety airbag
B0025	Power short-circuit of driver's safety airbag
B0017	Too high resistance value of co-pilot's safety airbag
B0016	Too low resistance value of co-pilot's safety airbag
B0018	Line-to-ground short-circuit or line contact of co-pilot's safety airbag
B0019	Power short-circuit of co-pilot's safety airbag

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B0065	Too high resistance value of driver's safety belt pretensioner.
B0064	Too low resistance value of driver's safety belt pretensioner.
B0066	Line-to-ground short-circuit or line contact of driver's safety belt pretensioner.
B0067	Power short-circuit of driver's safety belt pretensioner.
B0058	Too high resistance value of co-pilot's safety belt pretensioner.
B0057	Too low resistance value of co-pilot's safety belt pretensioner.
B0059	Line-to-ground short-circuit or line contact of co-pilot's safety belt pretensioner.
B0060	Power short-circuit of co-pilot's safety belt pretensioner.
B1328	Power voltage too high.
B1327	Power voltage too low.
B0671	Line-to-ground short/open-circuit or line contact of system fault.
B0673	Power short-circuit of system fault.
B0051	Front airbag detonated .
B0052	Max. operation limit reached by the safety airbag controller and no further use allowed.
B0049	Output line to power short-circuit by impact.
B0048	Output line to ground short/open-circuit by impact.

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B1000 ECU internal faults

steps	Measures	Yes	No
1	Visually observe if the ground wiring connection of safety airbag ECU power is normal.	To step 3	To step 2
2			To step 3
3	Replace the ECU of safety airbag.		

B1001 Configuration error

steps	Measures	Yes	No
1	Replace the ECU of safety airbag.		

B0026 Too high resistance value of driver's safety airbag

steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the safety airbag wiring.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the Timer-spring replaced.		To step 4
4	Whether the failure is eliminated after the driver's safety airbag replaced.		To step 5
5	Replace the ECU of safety airbag.		

B0022 Too low resistance value of driver's safety airbag

steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the safety airbag wiring.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the Timer-spring replaced.		To step 4
4	Whether the failure is eliminated after the driver's safety airbag replaced.		To step 5
5	Replace the ECU of safety airbag.		

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B0024 Ground short-circuit or line contact of driver's safety airbag

steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the safety airbag wiring.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the Timer-spring replaced.		To step 4
4	Whether the failure is eliminated after the driver's safety airbag replaced.		To step 5
5	Replace the ECU of safety airbag.		

B0025 Power short-circuit of driver's safety airbag

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the safety airbag wiring.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the Timer-spring replaced.		To step 4
4	Whether the failure is eliminated after the driver's safety airbag replaced.		To step 5
5	Replace the ECU of safety airbag.		

B0017 Too high resistance value of co-pilot's safety airbag

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the co-pilot's safety airbag harness.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot safety airbag replaced.		To step 4
4	Replace the ECU of safety airbag.		

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B0016 Too low resistance value of co-pilot's safety airbag

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the co-pilot's safety airbag harness.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot safety airbag replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0018 Ground short-circuit or line contact of co-pilot safety airbag

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the co-pilot's safety airbag harness.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot safety airbag replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0019 Power circuit of co-pilot safety airbag

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the co-pilot's safety airbag harness.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot safety airbag replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0065 Too high resistance value of driver's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of driver's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the driver's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

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B0064 Too low resistance value of driver's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of driver's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the driver's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0066 Ground short-circuit or line contact of driver's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of driver's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the driver's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0067 Power short-circuit of driver's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of driver's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the driver's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0058 Too high resistance value of co-pilot's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of co-pilot's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

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B0057 Too low resistance value of co-pilot's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of co-pilot's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0059 Ground short-circuit or line contact of co-pilot's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of co-pilot's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

B0060 Power short-circuit of co-pilot's safety belt pretensioner

Steps	Measures	Yes	No
1	Visually observe if the ECU of safety airbag is in normal connection with the pretensioner harness of co-pilot's safety belt.	To step 3	To step 2
2	Whether the failure is eliminated after the safety airbag harness replaced.		To step 3
3	Whether the failure is eliminated after the co-pilot's safety belt pretensioner replaced.		To step 4
4	Replace the ECU of safety airbag.		

B1328 Too high power voltage

Steps	Measures	Yes	No
1	Check if the battery is in normal voltage Ignition switch ON :12.56V Engine run:14V	To step 3	To step 2
2	Whether the failure is eliminated after the battery replaced.		To step 3

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3	Visually observe if the power harness of safety airbag ECU is in normal condition.	To step 5	To step 4
4	Whether the failure is eliminated after the safety airbag harness replaced.		To step 5
5	Replace the ECU of safety airbag.		

B1327 Too low power voltage

Steps	Measures	Yes	No
1	Check if the battery is in normal voltage Ignition switch ON :12.56V Engine run:14V	To step 3	To step 2
2	Whether the failure is eliminated after the battery replaced.		To step 3
3	Visually observe if the power harness of safety airbag ECU is in normal condition.	To step 5	To step 4
4	Whether the failure is eliminated after the safety airbag harness replaced.		To step 5
5	Replace the ECU of safety airbag.		

B0673 Power short-circuit of system failure lamp

Steps	Measures	Yes	No
1	Check if the connection line of the terminal 1 of safety airbag ECU is conductive with the failure lamp of airbag on instrument.	To step 3	To step 2
2	Whether the failure is eliminated after the connection line replaced.		To step 3
3	Check if the power and contact line of safety airbag is normal.	To step 5	To step 4
4	Whether the failure is eliminated after the fault harness replaced.		To step 5
5	Replace the ECU of safety airbag.		

B0051 Front airbag already detonated

Steps	Measures	Yes	No
1	Verify if the front airbag has been detonated	To step 2	To step 3
2	Whether the failure is eliminated after the front safety airbag replaced.		To step 3
3	Whether the failure is eliminated after the front airbag and connection harness of safety airbag replaced.		To step 4
4	Replace the ECU of safety airbag.		

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B0052 safety airbag controller reaching Max. operation limit and no further use allowed

Steps	Measures	Yes	No
1	Replace the ECU of safety airbag.		

B0049 impact output line short-circuit to power

Steps	Measures	Yes	No
1	Check if the connection line between the connector terminal 5 of safety airbag ECU and the terminal 21 of ETACS plug M37 is in normal condition	To step 3	To step 2
2	Replace the ECU of safety airbag and ETACS connection harness		To step 3
3	Visually observe if the power harness of safety airbag ECU is in normal condition.	To step 5	To step 4
4	Whether the failure is eliminated after the safety airbag harness replaced.		To step 5
5	Replace the ECU of safety airbag.		

B0048 Ground short/open-circuit of impact output line

Steps	Measures	Yes	No
1	Check if the connection line between the connector terminal 5 of safety airbag ECU and the terminal 21 of ETACS plug M37 is in normal condition	To step 3	To step 2
2	Replace the ECU of safety airbag and ETACS connection harness		To step 3
3	Visually observe if the power harness of safety airbag ECU is in normal condition.	To step 5	To step 4
4	Whether the failure is eliminated after the safety airbag harness replaced.		To step 5
5	Replace the ECU of safety airbag.		

Other than the operations stated in the Manual, it is not allowed to use electric equipment for testing any of the SRS system circuits. The SRS line harnesses may be identified through Yellow and/or Orange harnesses or harness connectors. Do not try to repair, connect or modify the SRS harnesses. If harness is damage, it should be replaced by new one. The grounding place should be kept clean. The diagnosis

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performance may read out SRS self-diagnostic result through the X431 diagnosis scanner. The diagnosis mode may help the service technician position and check the fault parts and components.

Safety airbag System Servicing

1. Precautions to be taken after the collision occurrence

Note:

■After occurrence of any impacts, the safety belt assemblies of all seats incl. the retractors and other metal parts and components should be checked.

■We suggest replacing all safety belt assemblies used during the collision, otherwise they may cause serious personal injury in the accident. In case of the frontal impact detonating the airbag, even if the safety belt has not been used, the safety belt pretensioner should be replaced.

In following cases, please replace the safety belt assembly (incl. fixing bolts):

■The safety belt is in use upon the occurrence of impact (except the impact is very soft and the safety belt, retractor and clip ring show no damage and in normal performance)

■The safety belt has been fully damaged in the accident (i.e. safety belt damaged, retractor distorted or slide slots).

■The fixing point of safety belt has been fully damaged in the accident. Check the fixed area of safety belt for damage or deformation before installing new safety belt assembly. If necessary, service.

■Deformation or wear of fixing bolts.

2. In case of accidents, where the middle and side impact occurred during the low-speed collision, rollover and rear-end collision etc., and the airbag not detonated, the following items should be checked:

■Check the SDM housing and installation bracket for any dents, cracks or deformation.

■ Check the connectors for any damage and the terminals for any deformation.

Check if the installation bolts and earth line are intact.

3. Maintenance and check of safety airbag system

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1) Safety airbag module

- ① Check the liner cowl for any dents, cracks or deformation.
- ② Check if the connector is damaged, the terminals deformed and wires clipped.
- ③ Check the gas generator housing of safety airbag for any dents, cracks or deformation.
- ④ Install the safety airbag components on the steering wheel and check the match-up or alignment with the steering wheel.

2) Timer-spring

- ① Check the connectors of timer-spring and sheath for any damage and the terminals for any deformation.
- ② Visually check the housing for any damages.

3) Steering wheel and steering column

- ① Check the electric wiring (fit inside the steering wheel) and the connectors for any damage and the terminals for any deformation.
- ② Install the safety airbag components on the steering wheel and check the match-up or alignment with the steering wheel.
- ③ Check the steering wheel for any noise, the steering for flexible control and excessive clearance.

Note:

■ Align first the timer-spring on bottom of the steering wheel, then install the steering wheel on the column.

■ Method of timer-spring alignment:

Turn the timer-spring to the end clockwise, then return it more than 2.5 cycles to make the arrow on the timer-spring in alignment.

4) Other parts and components

■ Check the wiring for any jamming, the connectors for any damage and poor connection and the terminals for any deformation.

■ All safety airbag components after detection of faults have to be replaced instead of use after reparation.

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■If the parts and components of safety airbag system are required to be removed or replaced due to maintenance and troubleshooting etc. the operation sequences should be followed respectively.

5) Warning/Notice labels

There are many SRS Warning/Notice labels on the car, which are attached on:

- Steering wheel framework
- Driver-sided safety airbag components
- Timer-spring
- Passenger-sided safety airbag components
- Safety airbag control module (SDM)
- Sun visor above the front windshield
- The instructions on the labels should be followed when servicing SRS. If

contaminated or damaged, they should be replaced.

6) Safety airbag control module (SDM)

Note:

- After the occurrence of SDM faults, the replacement has to be made instead of

reparation.

Disposal method of abandoned safety airbag system component

Prior to discarding the safety airbag or the car fitted with the safety airbag, the following process measures should be taken for detonation.

1.

1) If the car is going to be discarded, the safety airbag needs to detonate inside the car. If the car continues to be used and only the safety airbag module discarded, the detonation of safety airbag should be made outside the car.

2) Because of great amount of smoke produced from the safety airbag explosion, cares should be taken to prevent from breathing it in, for it is irritating and possibly choking to your throat. The residence area should be kept off as much as possible.

3) As the explosion noise of safety airbag is extremely loud, thus the residence areas should be kept off far away as much as possible. In case of human approaching,

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the warning of imminent noise should be given.

4) Only one airbag module can be triggered per time.

5) When the airbag module and the safety belt pretensioner are ready for detonation, personnel should stay at least 10m away from the component to be detonated.

6) After the explosion, the airbag module should be set aside at least more than 30 minutes due to the high temperature.

7) The personnel assigned to perform this task or the field staff should be protected with the suitable ear protective equipment.

2. Disposal method of detonation inside the car (when discarded)

1) Remove the car to an isolated site.

2) Disconnect both positive (+)/negative (-) cables from the battery terminals, then remove the battery from the car.

Note:

■ After the negative (-) detached from the battery, you should wait at least for 3 minutes, then continues the next procedure.

3) Detonation of safety airbag module (driver-sided):

① Remove the lower cowl of steering column.

② Disconnect the connection between the connector of safety airbag timer-spring and that of safety airbag harness.

Note:

■ After the connector of safety airbag timer-spring disconnected from the body harness of safety airbag, the positive (+) of timer-spring connector will be automatically short-circuited, to prevent the safety airbag from unexpected detonation due to the electrostatic.

4) Connect two wires in length of more than 10meters to two leads of safety airbag adapter wiring and wrap up the joint with the insulation tape. The other ends of those two wires should link to each other (short-circuit) to prevent the safety airbag from unexpected explosion.

5) Connect the pin access plug of safety airbag with the safety airbag adaptor

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wiring and extend the detonating cord to the outside.

6) In order to minimize the detonation noise, all doors and windows of car should be closed and the car should be protected with cover.

Note:

■If the window glass has any damage trace, they may be broken down during the detonation. Thus ensure that the car is protected with cover.

7) At a site as far as possible away from the car, detach two wires each from other, and connect them respectively with two terminals of battery (this battery has been already removed from the car) so as to detonate the safety airbag.

Note:

■Prior to the detonation of safety airbag with above method, you should check and be sure no persons in or nearby the car.

■Please wear the safety goggles.

■The gas charger is still hot after detonation, thus you should wait for at least 30 minutes until it cools down and move it. Though the gas released from the detonated safety airbag is non-toxic, it is irrespirable. For the moving rules of the detonated safety airbag, please refer to the Discard Method of Safety Airbag already Detonated.

■If the safety airbag component cannot be detonated by the above-stated method, do not approach them. Please get into contact with the local dealer.

8) After detonation or operation, please discard the safety airbag component according to the Discard Method of Safety Airbag Already Detonated.

3. Disposal method of detonation outside the car

1) This should be performed on a free plane terrain at distance of more than 10m away from the obstacles and other persons.

2) Even if in breeze weather, the safety airbag module should be detonated at the downwind of the battery.

① Disconnect both positive (+)/negative (-) cables from battery terminals, then remove the battery from the car.

Note:

■After the battery cables detached, you should wait for at least 3 minutes before

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the next procedure.

- ② Remove safety airbag module from the car

Note:

- Place the safety airbag component on a flat ground and keep the liner upward.

Do not place any objects on its top.

- 3) When detonating the driver-sided safety airbag module:

Connect two wires in length of more than 10m to two leads of safety airbag adaptor wiring and wrap the joint up with insulation tapes. The other ends of those two wires should link to each other (short-circuit) to prevent the safety airbag from unexpected explosion.

- 4) Set up the safety airbag module as follows:

- ① Hold the safety airbag adaptor connected to the above wires, pass it through underneath of prepared used tire assembly, and further connect to the safety airbag module.

- ② Pass the thick wire through the mount hole of safety airbag component, then fix the safety airbag component on the used tire of wheel, keeping the liner on the airbag component upward.

Note:

- Save space for the adaptor wiring below the wheel. If such space not is available, the reaction force from the safety airbag detonation may damage the wiring of adaptor

- ③ Stack three used tires without rims on the top fixing the tire of safety airbag component.

- ④ At the site as far as possible away from the safety airbag module and screened places, disconnect two connected wires from each other and connect them respectively to two terminals of battery (the battery already removed from the car)so as to detonate the safety airbag.

Note:

- Prior to detonation, carefully check and be sure that nobody nearby.

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■As the detonated gas generator is very hot, you should wait for at least 30 minutes and move it until it cools down. Though the gas released from the detonated safety airbag is non-toxic, it is irrespirable. For the moving rules of the detonated safety airbag, please refer to the Discard Method of Safety Airbag already Detonated.

■If the safety airbag component cannot be detonated by the above-stated method, do not approach them.

■After detonation or operation, please discard the safety airbag component according to the Discard Method of Safety Airbag Already Detonated.

4. Disposal method of the safety airbag already detonated

Discard the detonated safety airbag in accordance with the enforced local laws and (or) regulations as other parts and components. In case of discard, special cares should be taken for the following points:

1) As the detonated gas generator is very hot, you should wait for at least 30 minutes and move it until it cools down.

2) Do not spray water or oil on the safety airbag detonated.

3) Possible substances irritating to the eyes and skin may be attached on the detonated safety airbag components, thus, wear the gloves and goggles while handling the detonated safety airbag components.

Note:

■ If substances still entered into eyes or attached on skin after following those precautions, you should rinse those parts by great amount of clean water. If the skin becomes inflamed, handle it by medical treatment immediately.

4) Tightly seal up the vigorous PVS bag containing the discarded safety airbag component.

5) Wash your hands after completion of this work.

5. Removal of safety airbag control module.

1) Turn off the ignition switch, disconnect the negative (-) of battery and wait for at least more than 3 minutes until the energy storage capacitor of inbuilt SDM Complete the discharge.

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2) Remove auxiliary dashboard (see Removal and Installation of Auxiliary Dashboard)

of Auxiliary Dashboard)

3) Remove 2 screws fixing SDM

Loosen and pull out wiring connector of SDM

Take out SDM.



Note:

- Do not let the SDM drop or bump.

6. Install as the opposite order of removal of safety airbag control module (SDM)

Note:

- When installing, pay attention to the SDM direction, and align the arrow on SDM to the same direction of car driving.

