

Overview

General Technical Parameters

Major Vehicle Dimension Parameters

Model	SV5A-0800
Drive mode	Front-drive
Length, mm	4825
Width, mm	1825
Height, mm	1778 (without roof rack), 1800 (with roof rack)
Wheelbase, mm	2800
Front/Rear suspension, mm	946/1079
Front track, mm	1560
Rear track, mm	1570
Minimum turning circle diameter, m	12.4

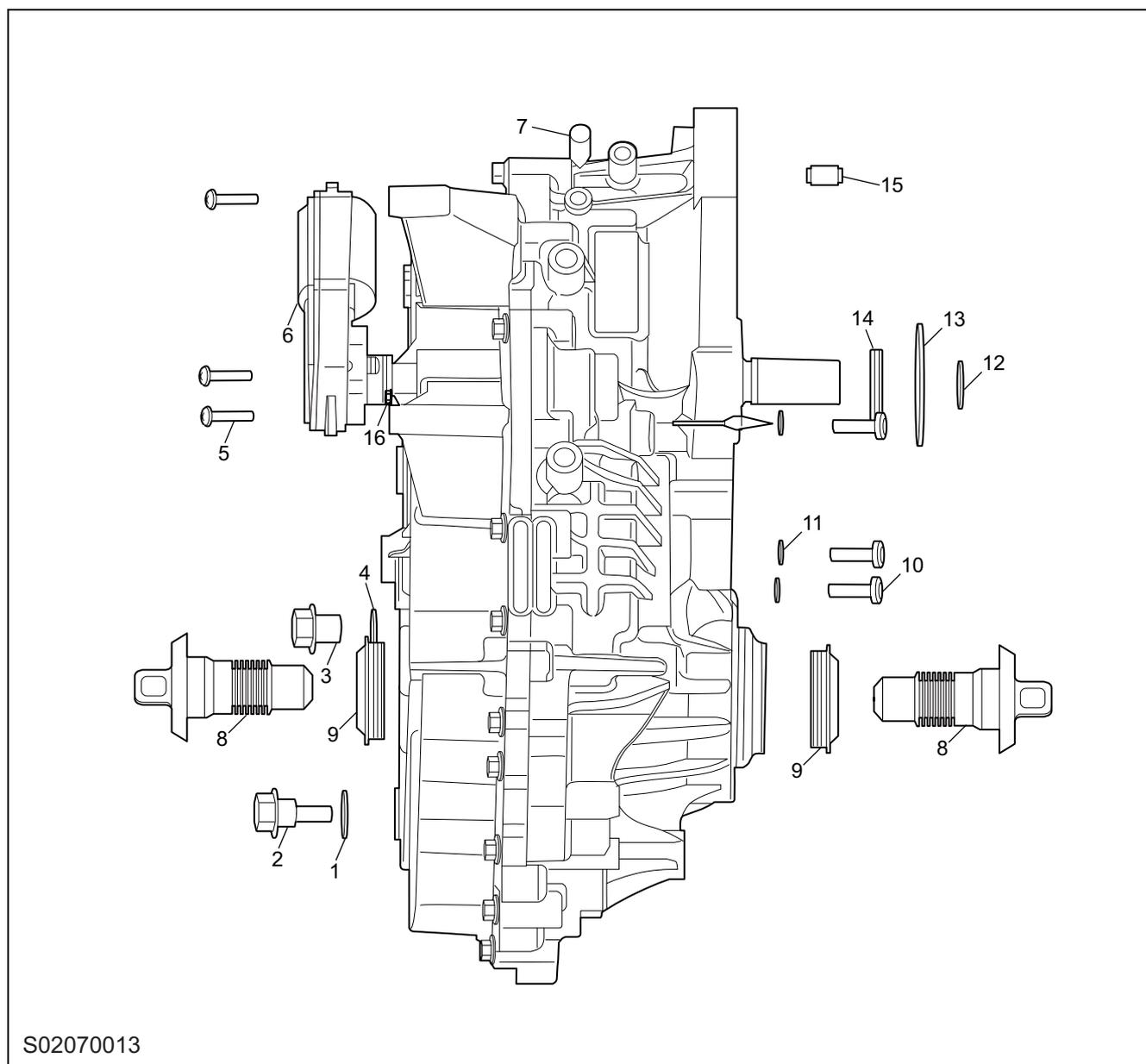
Vehicle weight parameters

Model	SV5A-0800	
Gross vehicle weight, kg	2335	2275
Curb weight, kg	1810	1750
Axle load (front/rear axle load under gross vehicle weight), kg	1079/1256	1060/1215
Number of seats	7	7

Dynamic performance index

Item	Parameters	
Max. speed, km/h	160	
Max. reverse speed, km/h	30	
Maximum gradeability, %	30	
Accelerating ability, second	Accelerating time from 0 to 50 km/h	5.4
Driving range, km	WLTP	260

Exploded View of Transmission Accessories



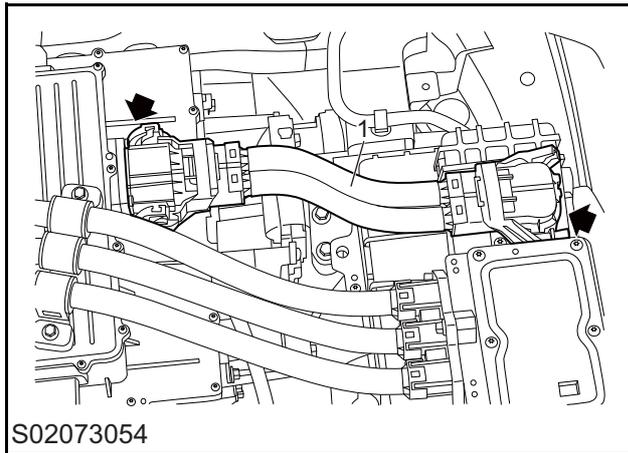
S02070013

- | | | | |
|----|---|----|---------------------------------------|
| 1 | Gasket | 11 | Sealing gasket M8 |
| 2 | Magnetic steel drain plug assembly | 12 | O-ring |
| 3 | Oil level hole bolt | 13 | O-ring - motor to housing |
| 4 | Aluminum gasket 16 | 14 | Input shaft oil seal |
| 5 | Hexalobular socket pan head bolt M6* 25 | 15 | Solid locating pin $\Phi 10 \times 2$ |
| 6 | Electric parking actuator assembly | 16 | Parking brake mechanism oil seal |
| 7 | Breather plug | | |
| 8 | Half shaft sleeve | | |
| 9 | Half-shaft oil seal | | |
| 10 | Hexalobular socket head cap bolt M8x25 | | |

Motor Controller Harness Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the service switch.
- 3 Remove the front compartment trim.
- 4 Remove the connector on both ends of motor controller harness.
- 5 Remove the motor controller harness (1).



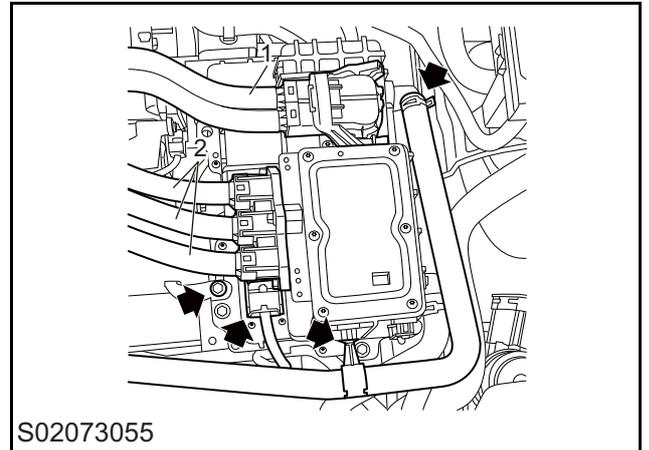
Installation

- 1 Install the motor controller harness.
- 2 Connect both harness connectors of motor controller harness.
- 3 Install the service switch.
- 4 Install the front compartment trim.
- 5 Connect the negative battery cable.

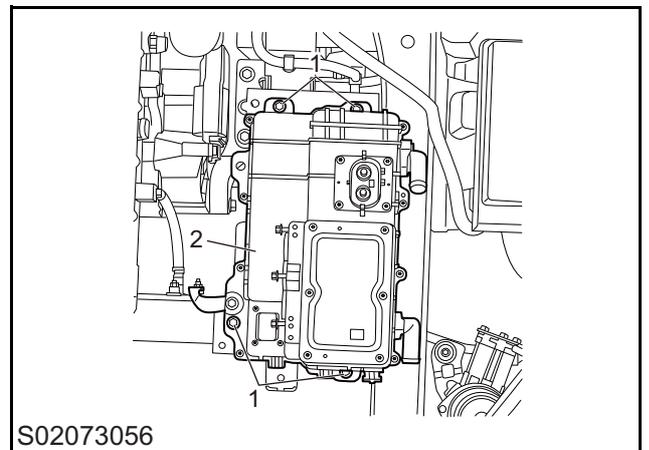
Motor Controller Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the service switch.
- 3 Remove the front compartment trim.
- 4 Drain the motor controller cooling system coolant.
- 5 Disconnect the water inlet and outlet pipes.
- 6 Disconnect the motor controller harness connector and ground wire.
- 7 Disconnect the bracket from the motor controller.
- 8 Disconnect the motor controller harness (1).
- 9 Disconnect the motor three-phase harness (2).

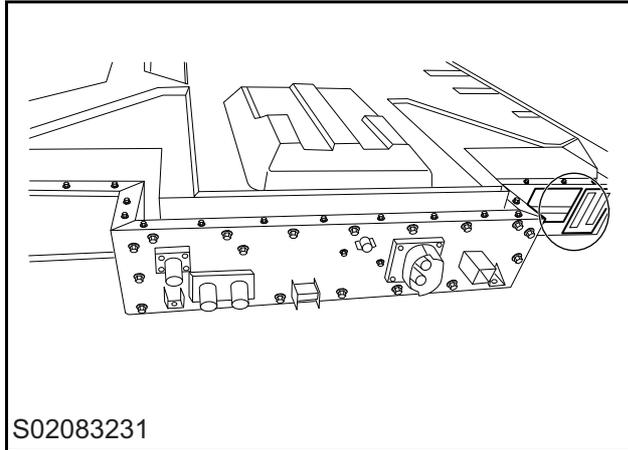


- 10 Remove the motor controller bolt (1).
- 11 Remove the motor controller (2).



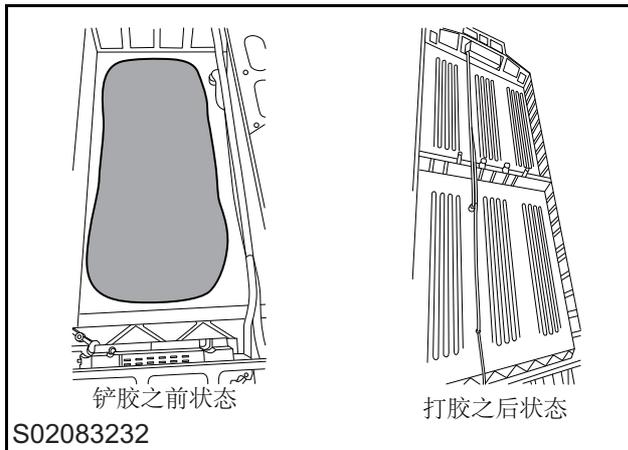
Installation

- 1 Install the motor controller.



- 3 Install the middle and upper cover bracket to the lower tray
- 4 Install the heat conduction pad.

Since the heat-conducting pad is cancelled and replaced with heat-conducting adhesive, the remaining heat-conducting adhesive shall be removed and repainted when replacing the module.



- 5 Install the explosion-proof valve, tighten the explosion-proof valve bolts to $6 \pm 1\text{Nm}$, and check the torque.
- 6 Install the thermal runaway warning device, tighten the bolts of the thermal runaway warning device to $6 \pm 1\text{Nm}$, and check the torque.
- 7 Install the battery high voltage cut-off unit. Tighten the fixing bolts of the battery high-voltage cut-off unit to $9 \pm 1\text{ Nm}$, tighten the panel bolts of the battery high-voltage cut-off unit to $6 \pm 1\text{ Nm}$, and check the torque.
- 8 Install and fix the cooling water inlet pipe and cooling water outlet pipe.

- 9 Replace the module if necessary.

Note: The maintenance personnel shall first measure the cell voltage of other modules in the battery pack and feed back the information to the factory; After receiving the notice, the factory personnel need to use the cell balance repair instrument to configure a module with the same voltage level to the rework site, otherwise it will be invalid even if it is installed.

Note: Record the package number and module number of the battery pack to achieve accurate traceability binding.

Note: Pay attention to the positive and negative directions of the module; If a bracket is installed on the module, be sure to pay attention to the positive and negative directions and positions of the bracket.

- 10 Install the module, install and tighten the module bolts to $12 \pm 1\text{Nm}$, and check the torque.
- 11 Install the upper cover strut.
- 12 Install the copper bar, install the fixing bolts of the copper bar at the end of the battery high-voltage cut-off unit, tighten them to $21 \pm 1\text{Nm}$, and other fixing copper bar bolts to $9 \pm 1\text{Nm}$, and check the torque.

Note: The jumper long soft copper bar is connected to the front and rear compartment of the battery pack, so the copper bar to be removed first in the process of battery pack disassembly and the copper bar to be installed last in the process of installation. The copper bar here is long, so it is necessary to fix the harness clip to the lower housing, and the high-voltage protective cover must be installed.

Note: Bridging the short copper bar is an important way to connect the front and rear voltages of the front compartment module in series, so the order in the process of copper bar disassembly is second only to the soft copper bar.

Note: The copper bar in the jumper connection is the most easily connected copper bar with wrong sequence, so special care shall be taken during connection, and the connection shall be carried out according to the drawings and process documents.

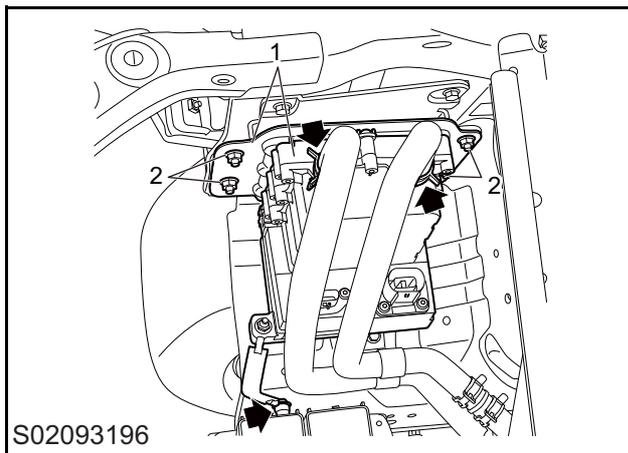
General diagram of high voltage copper bar connection:

Water Heating Electric Heater Assembly Replacement

Removal

- 1 Disconnect the negative pole of the battery.
- 2 Remove the service switch. Refer to "service switch replacement".
- 3 Drain the coolant of the power battery cooling system.
- 4 Disconnect the water supply pipe of water heating electric heater assembly.
- 5 Disconnect the electrical connector of the electric water heater assembly.
- 6 Disconnect the grounding wire nut of electric water heater assembly.
- 7 Remove the fixing bolts (1) of the water heating electric heater assembly.
- 8 Remove the water heating electric heater assembly (2).

- 7 Install the service switch. Refer to "service switch replacement".
- 8 Connect the negative pole of the battery.
- 9 Connect the negative pole of the battery.



Installation

- 1 Install the water heating electric heater assembly.
- 2 Install the fixing bolts of the electric water heater assembly, tighten them to 9 ± 1 nm, and check the torque.
- 3 Install the grounding wire nut of the electric water heater assembly and tighten it.
- 4 Connect the water pipe on the water heating electric heater assembly.
- 5 4 Connect the electrical connector on the water heating electric heater assembly.
- 6 Fill the power battery cooling system coolant.

Wheels and Tires

Service Guide

Wheel Replacement

Warning: DO NOT lubricate the wheel rim and tire with lubricant containing silicone oil. Clean the tire bead before the removal of tire. Lubricate the area completely with the mixture of 50% lubricant and 50% water before the installation.

Warning: Use a tire changer to remove tires and avoid using manual tools or a tire lever alone to replace tires, otherwise wheel disk or rim may be damaged.

Removal

- 1 Place the vehicle on the lifting platform and lift it to a certain height.
- 2 Remove the wheel trim cover with a screwdriver.
- 3 Remove 6 wheel bolts with a socket wrench.
- 4 Remove wheels.

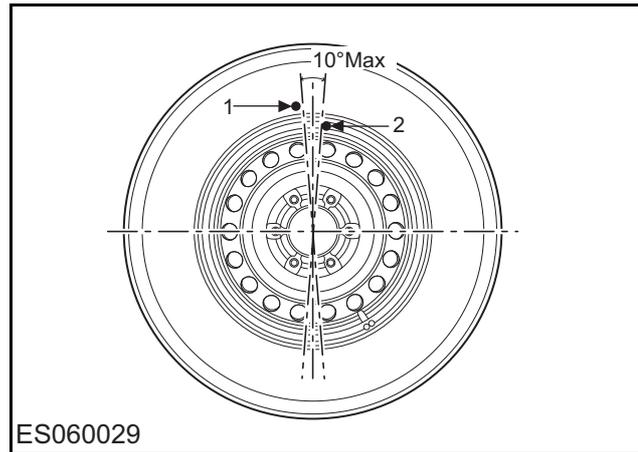
Caution: Avoid placing the hub panel towards the ground to prevent scratches.

- 5 Take down the wheel balance block and record the location and mass of each balance block for re-installation. (if applicable)
- 6 Loosen the valve cap to release the air. Remove the tire and pull out the wheel valve or tire pressure monitoring sensor.

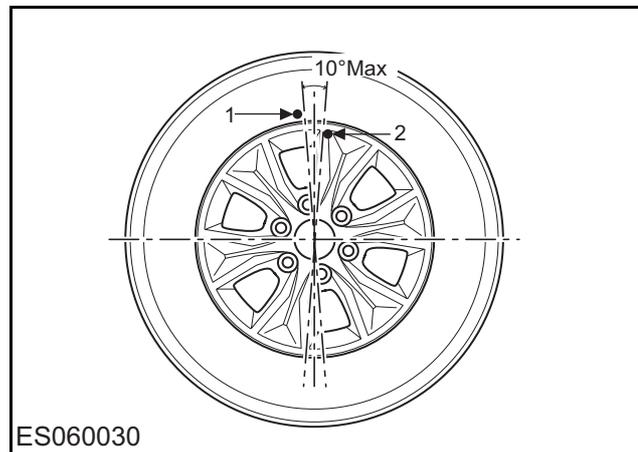
Installation

Caution: Brush away the deposited corrosion on the mounting surfaces of wheel, brake drum and brake disc with scraping tool or steel wire brush before the installation of wheels. During the installation, improper mating of metal mounting surface and metal will cause the looseness of wheel bolts. The wheel may thus fall off in driving, resulting in vehicle out of control and even personal injury.

- 1 Install the wheel valve assembly and ensure it is fully matched and sealed with the rim.
- 2 Install the tire with the tire changer and align the tire to the matching marks on the wheel.
 - During the installation of steel wheel, the tire with mark 1 of $\phi 10$ red dot shall be installed on the same side with the steel wheel with mark 2 of $\phi 8$ white dot (if marked) at 0 angle. The tire assembly is required to be within 10 degrees after the installation.



- During the installation of alloy wheel, the tire with mark 1 of $\phi 10$ red dot shall be installed on the same side with the steel wheel with mark 2 of $\phi 10$ red dot (if marked) at 0 angle. The tire assembly is required to be within 10 degrees after the installation.



- 3 Inflate the tire until the wheel disk is in place. Ensure the locating ring at the outer side of the tire bead is around the wheel rim flange on both sides. This method can ensure the correct position of tire bead.
- 4 Check the air tightness of the valve with soap water, and reinstall it in case of any leak.

Caution: DO NOT damage the tire when installing accessories, especially the tire bead.

- 5 After each wheel is assembled, carry out the balance test to the tire with a tire dynamic balancer.
- 6 Pay attention to the followings when installing the balance block:
 - After the installation of the steel wheel assembly, the allowable unilateral residual unbalance is below 10 grams. The maximum weight of the balance block is 60 grams on either side and no more than 120 grams on both sides.

Front Brake Hose Replacement

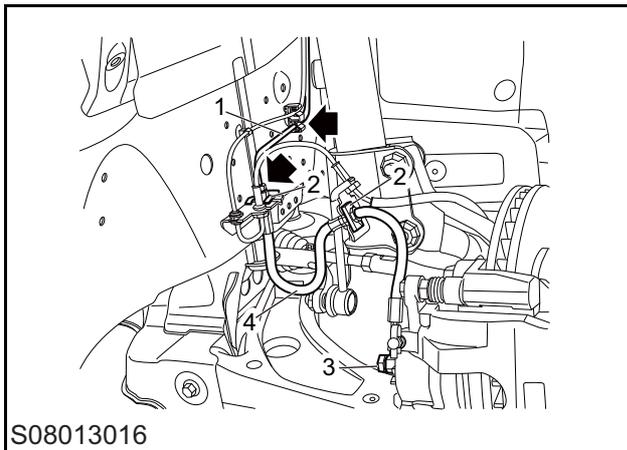
Removal

- 1 Raise the vehicle on a lift.
- 2 Remove wheels. Refer to "Wheel Replacement".
- 3 Remove the retaining nut (1) connecting the brake hose to the pipe.
- 4 Remove and discard the clip (2) fixing the front brake pipe to the body and shock absorber.
- 5 Remove and discard 1 bolt (3) and washer fixing the brake hose to the housing of the front brake caliper.

Caution: Before disconnecting or removing the brake pipeline, ensure the middle area and joints around the pipeline are clean. Block the opened connection to prevent contaminant from entering.

- 6 Remove the front brake hose (4) from the vehicle.

Caution: It is same for both left and right sides of front brake hose, but here only left side is displayed.



Installation

- 1 Clean the brake pipe fittings.
- 2 Install the front brake hose to the vehicle.
- 3 Connect the front brake hose to the pipe, secure with the nut and tighten it to 13-17Nm.
- 4 Fix the front brake pipe to the body and shock absorber, and secure with new clips.
- 5 Fix the front brake hose to the housing of the front brake caliper, install new bolt and washer, and tighten the bolt to 32-38Nm.
- 6 Drain the brake system. Brake System Drain
- 7 Install wheels. Refer to "Wheel Replacement".
- 8 Lower the vehicle.

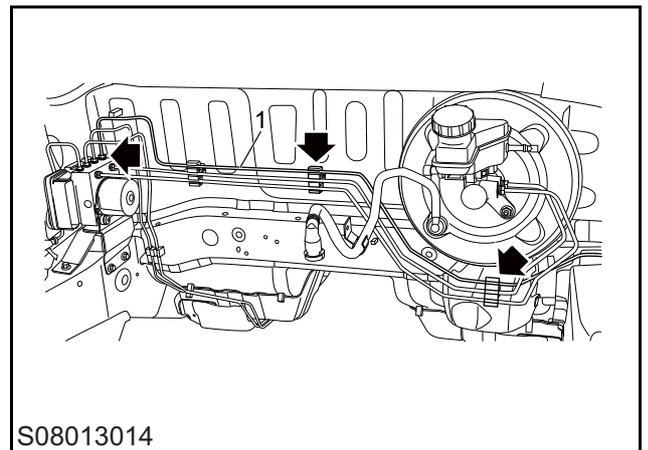
Front Right Brake Pipe Replacement

Removal

- 1 Raise the vehicle.
- 2 Remove wheels. Refer to "Wheel Replacement".
- 3 Place a piece of cloth under the ESP control module to absorb the spilled oil.
- 4 Remove the nut connecting the brake hose to the pipe. Refer to "Front Brake Hose Replacement".

Caution: Before disconnecting or removing the brake pipeline, ensure the middle area and joints around the pipeline are clean. Block the opened connection to prevent contaminant from entering.

- 5 Remove the nut fixing the front right brake pipe (1) to the ESP control module, and disconnect the pipeline.
- 6 Remove the front left brake pipe (1) from the vehicle.



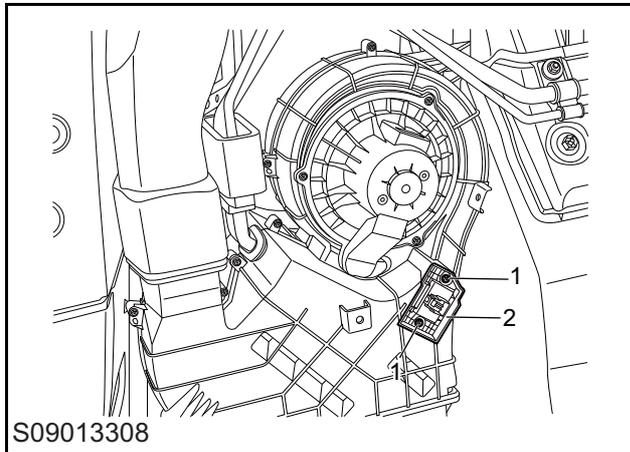
Installation

- 1 Install the front left brake pipe to the vehicle.
- 2 Connect the front left brake hose to the pipe, secure with the nut, tighten it to 13-17Nm, and check the torque.
- 3 Install the front left brake pipe to the pipe clip on the body.
- 4 Fix the front left brake pipe to the ESP control module, and tighten the nut to 13-17Nm.
- 5 Drain the brake system. Brake System Drain
- 6 Install wheels. Refer to "Wheel Replacement".
- 7 Lower the vehicle.

Rear Blower Speed Regulating Module Replacement

Removal

- 1 Disconnect the negative pole of the battery.
- 2 Remove the left rear quarter trim panel assembly. Refer to "replacement of rear quarter trim panel assembly".
- 3 Disconnect the electrical connector of the rear blower speed regulation module.
- 4 Remove the screws (1) of the rear blower speed regulation module.
- 5 Remove the rear blower speed regulation module (2).



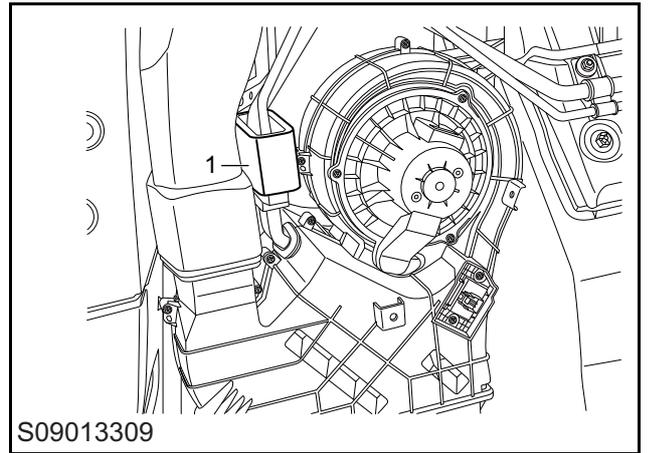
Installation

- 1 Install the rear blower speed regulation module.
- 2 Install the screws of the rear blower speed regulation module and tighten them.
- 3 Connect the electrical connector of the rear blower speed regulation module.
- 4 Install the left rear quarter trim panel assembly. Refer to "replacement of rear quarter trim panel assembly".
- 5 Install the negative pole of the battery.

Rear A/C Box Expansion Valve Replacement

Removal

- 1 Recover the refrigerant of the air conditioning system. Refer to "refrigerant discharge and filling".
- 2 Remove the left rear quarter trim panel assembly. Refer to "replacement of rear quarter trim panel assembly".
- 3 Remove the air conditioning insulation glue (1).



- 4 Remove one bolt between the rear air conditioning inlet and outlet pipe assembly D and the expansion valve, and disconnect the pipeline.

Note: Plug the disconnected connector to prevent the entry of pollutants.

- 5 Remove and discard the O-ring seal.
- 6 Remove the 2 bolts (1) that fix the expansion valve on the rear air conditioning box and remove the expansion valve (2).

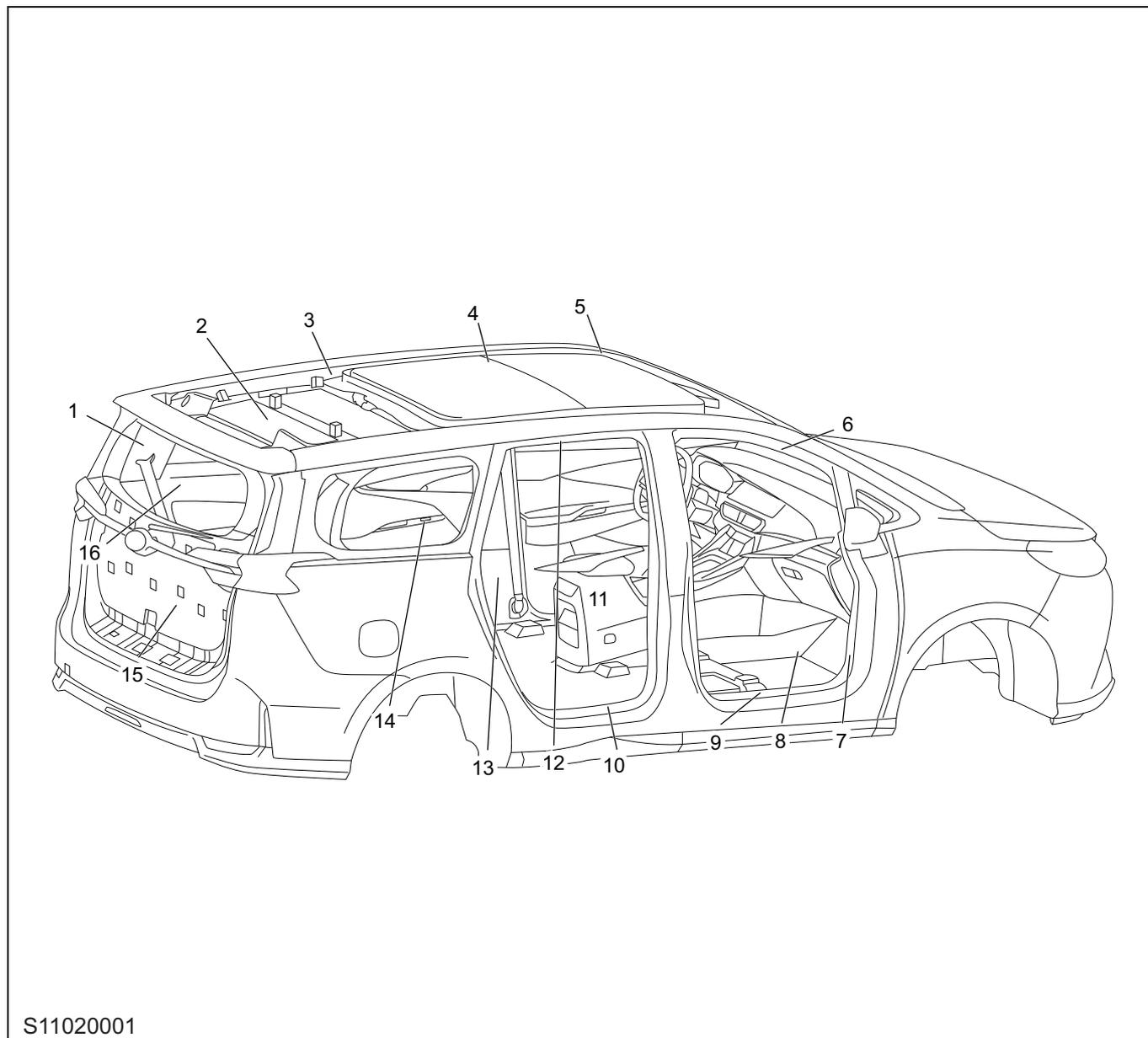
Note: Plug the disconnected connector to prevent the entry of pollutants.

- 7 Remove and discard the O-ring seal.

Driver Compartment Interiors and Switches

Layout

Driver Compartment Interiors and Switches Layout 1

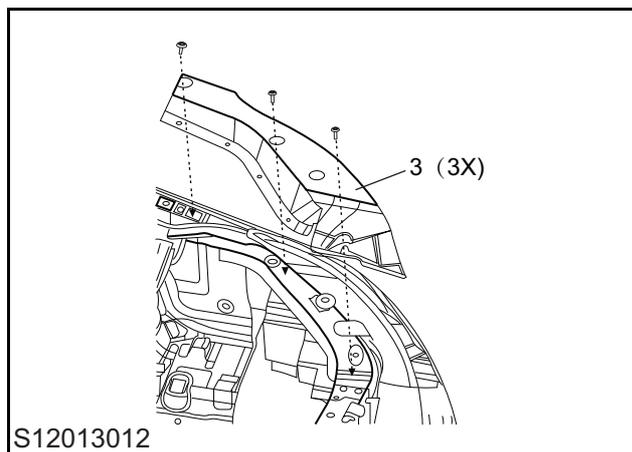


S11020001

- | | | | |
|---|---|----|---|
| 1 | D pillar upper trim panel | 9 | Front door courtesy panel covering |
| 2 | Driver compartment roof interior assembly | 10 | Rear door courtesy panel covering |
| 3 | C pillar upper trim panel | 11 | Front door interior trim panel assembly |
| 4 | B pillar upper trim panel | 12 | Passenger compartment ceiling handle |
| 5 | A pillar upper trim panel | 13 | B pillar lower trim panel |
| 6 | Front passenger ceiling handle | 14 | Rear door interior trim panel assembly |
| 7 | A pillar lower trim panel | 15 | Tail gate trim panel assembly |
| 8 | Carpet assembly | 16 | Rear quarter panel assembly |

Fender Front Compartment Trim Panel Assembly

- 1 Remove the snap fasteners tightening the fender front compartment trim panel to the fender and headlamp upper beam assembly.
- 2 Remove the left and right fender front compartment trim panels.



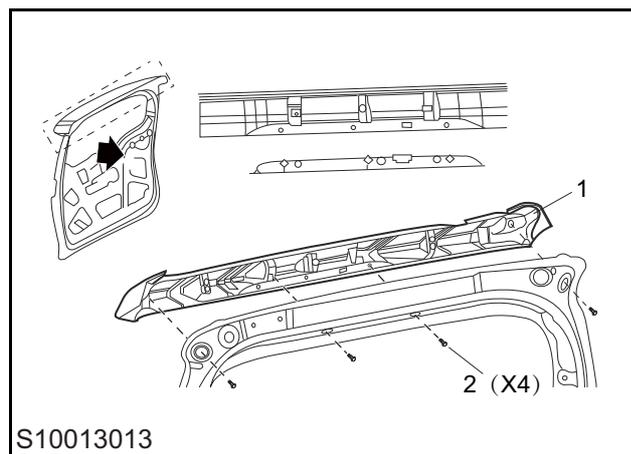
Installation

- 1 Install the left and right fender front compartment trim panels.
- 2 Install the snap fasteners tightening the fender front compartment trim panel to the fender and headlamp upper beam assembly.

Sopiler Assembly

Removal

- 1 Remove the tail gate trim panel (refer to "Tail Gate Trim Panel Replacement").
- 2 Remove the bolts tightening the sopiler assembly to the tail gate.
- 3 Remove the sopiler assembly.
- 4 Remove the tail gate moulding assembly.



Installation

- 1 Install the tail gate moulding assembly and sopiler assembly.
- 2 Install the bolts tightening the sopiler assembly to the tail gate with the torque of $9\pm 1\text{N.m}$.
- 3 Install the tail gate trim panel (refer to "Tail Gate Trim Panel Replacement").

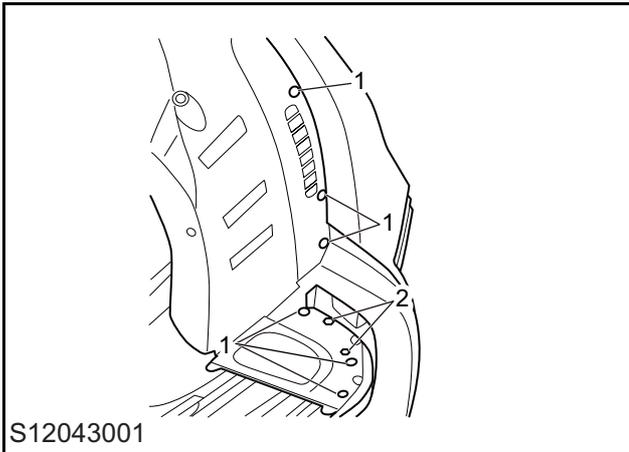
Bumper

Service Guide

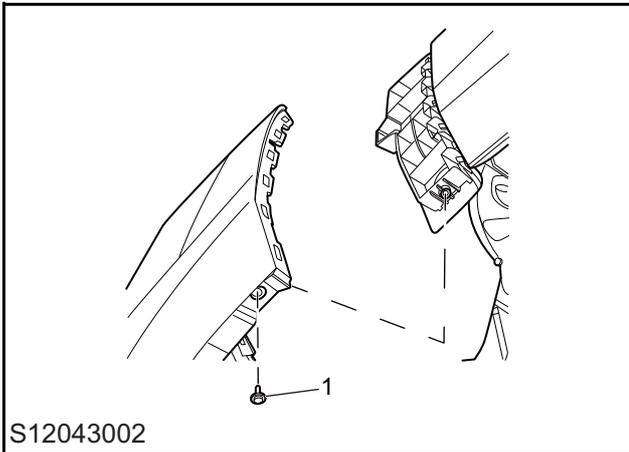
Front Bumper Replacement

Removal

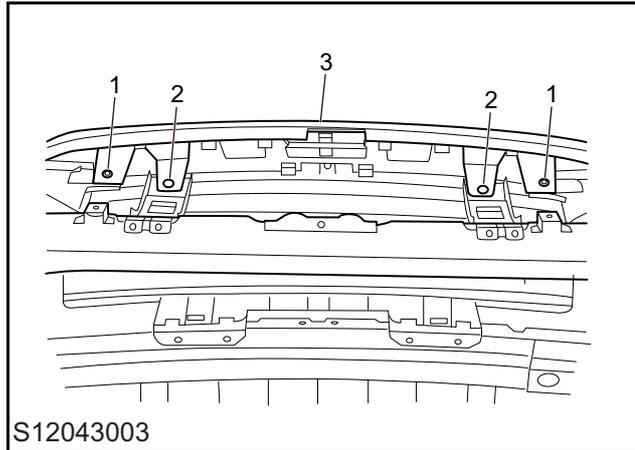
- 1 Disconnect the negative battery cable.
- 2 Remove the engine lower guard. Refer to "Engine Lower Guard Replacement".
- 3 Remove the front compartment trim panel. Refer to "Front Compartment Trim Panel Replacement".
- 4 Remove 6 clips (1) and 2 bolts (2) from the front wheelhouse trim panel.



- 5 Remove the front bumper bolts (1) at both sides of the front bumper assembly.



- 6 Remove 2 front bumper bolts (1) and 2 front bumper clips (2).
- 7 Disconnect the harness connector.
- 8 Carefully lift both sides of the front bumper and pull them outward to remove the front bumper (3) from the brackets on both sides of the body.



Installation

- 1 Install the harness connector.
- 2 With the help, install the front bumper assembly on the vehicle body and snap into the front bumper brackets.
- 3 Install 2 front bumper bolts and 2 front bumper clips.
- 4 Install the front bumper bolts at both sides of the front bumper assembly, and tighten to $2.5 \pm 0.3 \text{ Nm}$.
- 5 Install 6 clips and 2 bolts for the front wheelhouse trim panel.
- 6 Install the front compartment trim panel. Refer to "Front Compartment Trim Panel Replacement".
- 7 Install the engine lower guard. Refer to "Engine Lower Guard Replacement".
- 8 Connect the negative battery cable.

Rear Body

Description and Operation

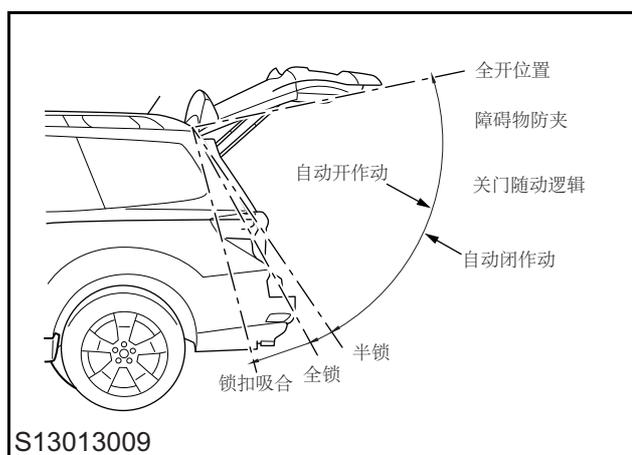
1 Introduction of Power Liftgate Parts Function

- Tailgate drive mechanism It can provide driving force during opening and closing to ensure tailgate is opened or closed.
- Control Unit ECU The control unit is a control logic written according to the function matrix of the tailgate. Through these specific logic, the control unit can set when the tailgate is opened or closed, when the obstacle reverses, and how it reacts in abnormal situations.
- Anti-pinch strip When the tailgate is about to close, if the hand is caught between the tailgate and the bodyside, the anti-pinch strip will be triggered, and the tailgate will be opened in opposite direction to avoid pinching.

2 System Operating Principle and Parts Parameters

After the power liftgate drive system receives the user's instruction, such as the instruction to open the door, the control unit transmits the signal to the liftgate lock first, the liftgate lock receives the signal to perform the opening action, and then the liftgate driver lever provides the power to open the liftgate, brace rod motor can be released after opening to the preset height. If the door closing command is received, the control unit first transmits the signal to the power brace rod motor of the power liftgate, which turns in reverse to close the liftgate. After the liftgate lock enters the full locked position, the lock catch begins to close.

The liftgate will rotate in opposite direction if it touches obstacle or anti-pinch strip in the process of movement.



	Voltage		Operating temperature
	Rated voltage	Operating voltage	
Drive mechanism	12V	9-16	-30-80°
ECU Control box	12V	9-16	-30-80°
Anti-pinch strip	12V	9-16	-30-80°

3 After-sales self-learning process (self-learning again)

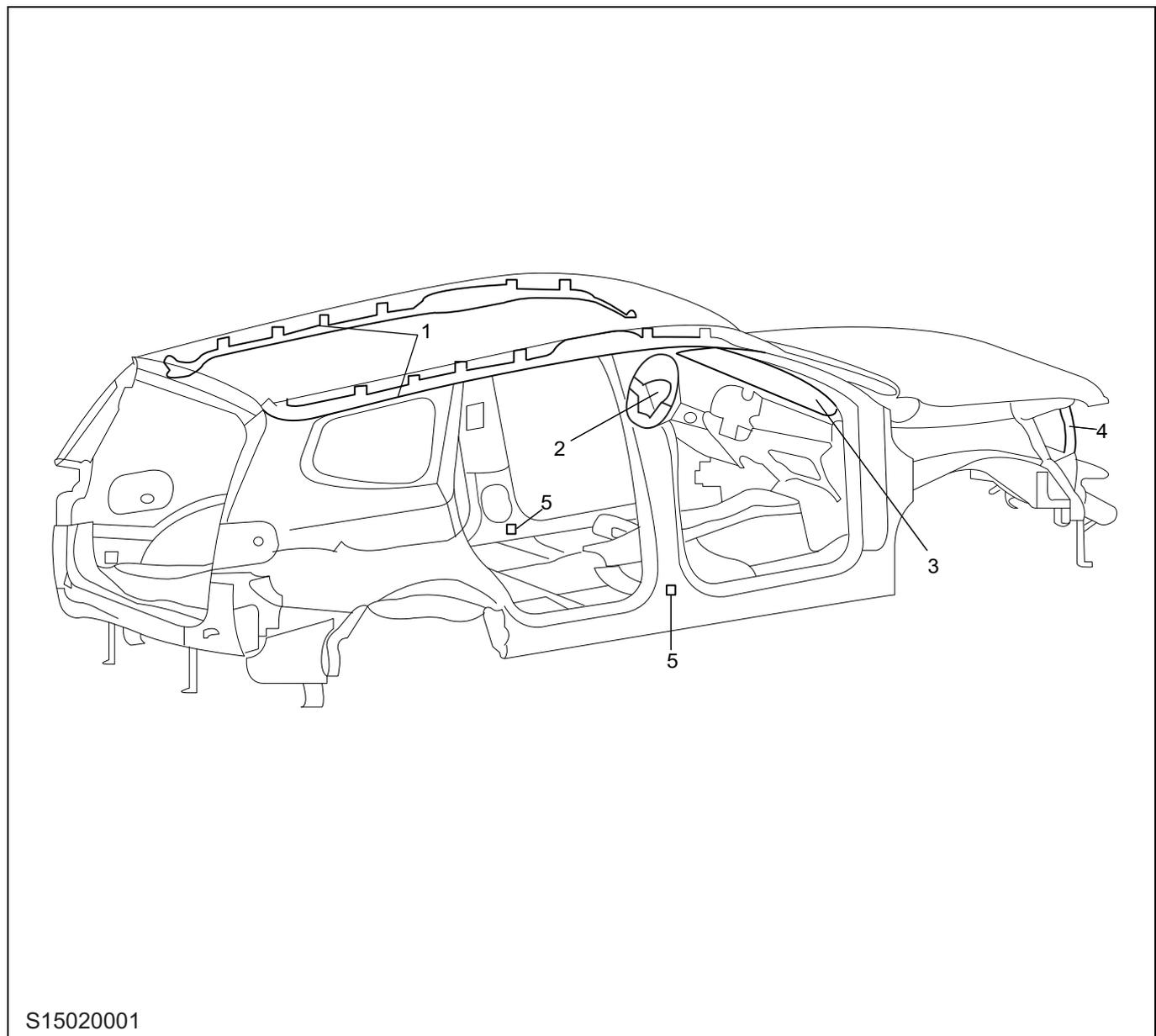
- Close the power liftgate manually from the current position to the fully locked position, wait for the completion of self-attaching lock closing, and the liftgate will be fully closed. Note: the liftgate should be closed to the full locked position. If the liftgate only reaches the half locked position, the lock system will not lock.
2. The off-line device is created from the TGC communication and enters the EOL mode.
 3. Pass the level 1 safety authentication and enter 27 01/27 02.
 4. Trigger the self-learning instruction and enter 31 01 AB A1.
 5. Wait for the completion of self-learning. After the completion of the self-learning action for 6s, the message will reply 71 01 AB A1.
 6. Inquire the self-learning result and enter 31 03 AB A1. If the reply is 80, the learning is successful; If there are other negative responses, refer to the content of the negative response for troubleshooting, and repeat the 1-6 self-learning process.
 7. Press the liftgate On/Off switch and the liftgate will be closed electrically.
 8. Clear the system DTC, and enter 14 FF FF FF to complete the self-learning process.

4 Factors that trigger self-learning again

1. The ECU has been replaced or the ECU connector has been pulled out.
2. The power brace rod has been replaced or the power brace rod connector has been pulled out.

Supplemental Inflatable Restraint (SIR)

Layout



S15020001

- | | | | |
|---|---|---|--|
| 1 | Curtain airbag assembly | 3 | Instrument panel (front passenger) airbag assembly |
| 2 | Steering wheel (driver) airbag assembly | | |

360 Resources Pack Upgrading

- 1 Delete the upgrade files in the U disk, copy the 360 upgrade files to U disk and insert the U disk into mainframe USB port, and then display screen will pop up the upgrade interface as shown in the figure below:



- 2 Select "Upgrade 360 Resources" option.
- 3 Select "Upgrade" option to begin upgrading. Mainframe restart indicates upgrading is completed (the whole upgrading process takes about 3 minutes); during the upgrading process, if the screen above appears again after mainframe restarts automatically, click "cancel" to complete upgrading.

Version Number Confirmation

- 1 View the system and MCU 360 version. Click options----system settings----system----system information, to view the detailed software version of entertainment system. Check whether the version in red circle is correct.



- 2 360 internal version view

- 1.1 Click to enter the 360 interface, long press the red circle in the figure below for 5 s and release it, the system will automatically enter the version view interface.

Circuit diagram

Body control system 4

