

General

Vehicle Technical Parameters

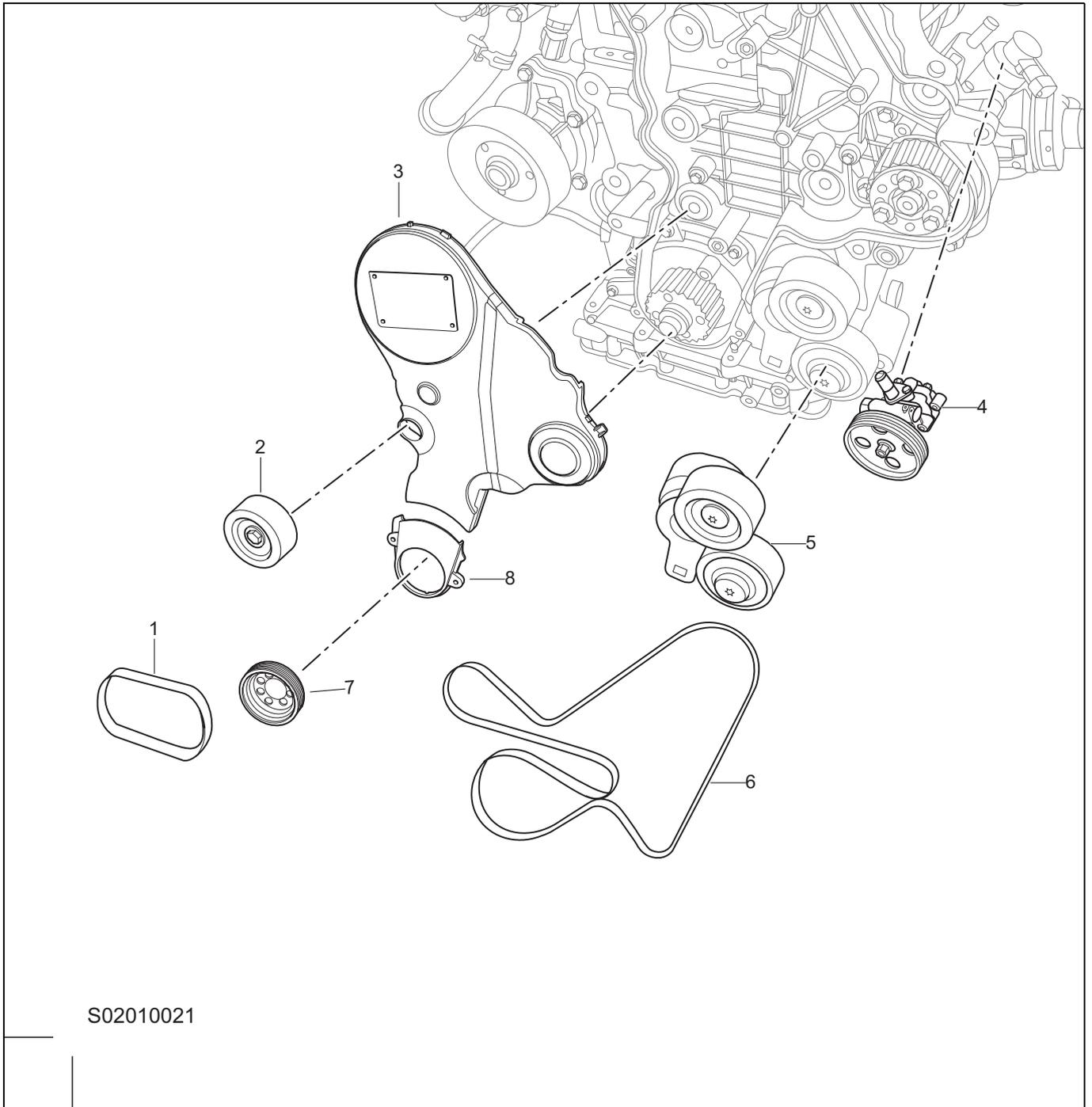
Rear Wheel Drive Models

Model	SH6591H4DB-NS SH6591H4DB-S	SH6551H4DB-N SH6551H4DB	SH6591H2DB	SH6551H2DB	SH5043XXYH7D B-S
Driving type	FR				
Length of outline dimension, in mm	5940	5546	5940	5546	5940
Width of outline dimension, in mm	2110	2062	2062	2062	2110
Height of outline dimension, in mm	2525,2740	2545	2520,2735	2535	2535,2755
Wheel base, in mm	3760	3366	3760	3366	3760
Front/Rear suspension, in mm	1020/1160	1020/1160	1020/1160	1020/1160	1020/1160
Front wheel track, in mm	1740	1732	1732	1732	1740
Rear wheel track, in mm	1654	1743	1743	1743	1654
Minimum turning circle diameter, in m	14.1	12.9	14.1	12.9	14.1

Model	SH5043XXYH9D B-S	SH5042XXYH7D B	SH5042XXYH9DB	SH1043H7DB-PS	SH1042H7DB-P
Driving type	FR				
Length of outline dimension, in mm	5940	5546	5546	5820	5426
Width of outline dimension, in mm	2110	2062	2062	2094	2052
Height of outline dimension, in mm	2535,2755	2555	2555	2320	2320
Wheel base, in mm	3760	3366	3366	3760	3366
Front/Rear suspension, in mm	1020/1160	1020/1160	1020/1160	1020/1040	1020/1040
Front wheel track, in mm	1740	1732	1732	1740	1732
Rear wheel track, in mm	1654	1743	1743	1654	1743
Minimum turning circle diameter, in m	14.1	12.9	12.9	14.1	12.9

Layout

Accessory Pulley System



- 1 Compressor Belt
- 2 Belt Idler Assembly
- 3 Timing Pulley Chamber Cover
- 4 Steering Pump

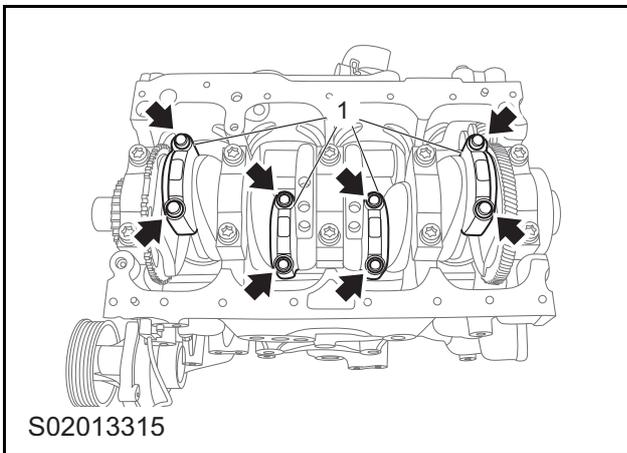
- 5 Engine Belt Tension Pulley
- 6 Accessory Belt
- 7 Crankshaft Shock Absorber
- 8 Timing Cover (Lower)

Piston Connecting Rod Assembly Replacement

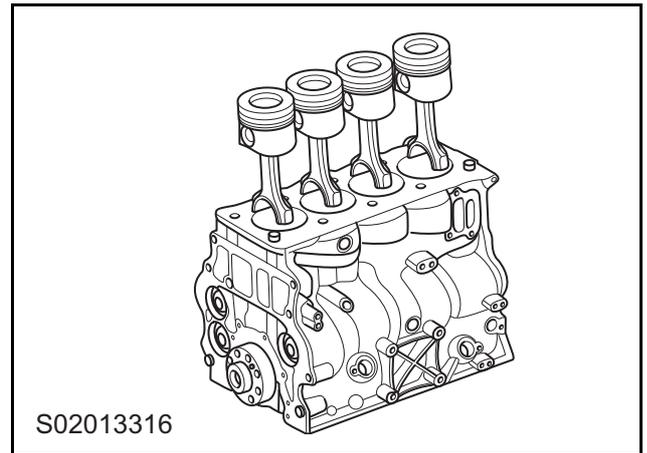
Removal

- 1 Remove the engine assembly. Refer to "Engine Assembly Replacement".
- 2 Remove the flywheel assembly. Refer to "Flywheel Assembly Replacement".
- 3 Remove the cylinder head assembly. Refer to "Cylinder Head Assembly Replacement".
- 4 Remove the lower block frame. Refer to "Lower Block Frame Replacement".
- 5 Remove the crankshaft rear oil seal assembly. Refer to "Crankshaft Rear Oil Seal Replacement".
- 6 Remove the crankshaft front oil seal assembly. Refer to "Crankshaft Front Oil Seal Replacement".
- 7 Remove the oil pump assembly. Refer to "Crankshaft Front Oil Seal Replacement".
- 8 Remove and scrap 8 bolts fixing the connecting rod bearing shell to the connecting rod.
- 9 Remove the connecting rod bearing shell (1).

Caution: Remember the corresponding mark for each connecting rod bearing shell to avoid mixing the connecting rod caps.

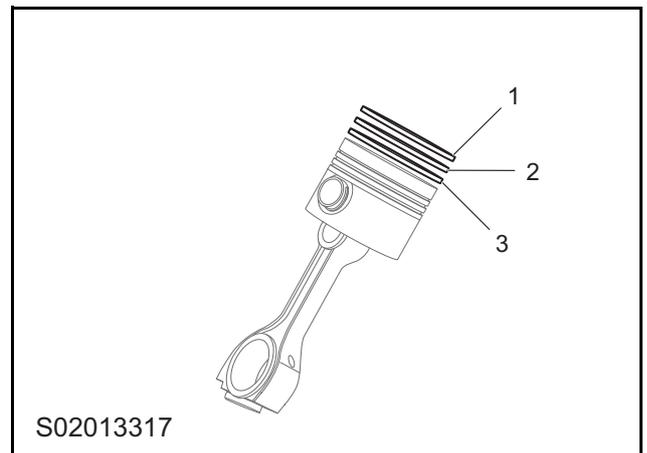


- 10 Remove the piston connecting rod assembly.

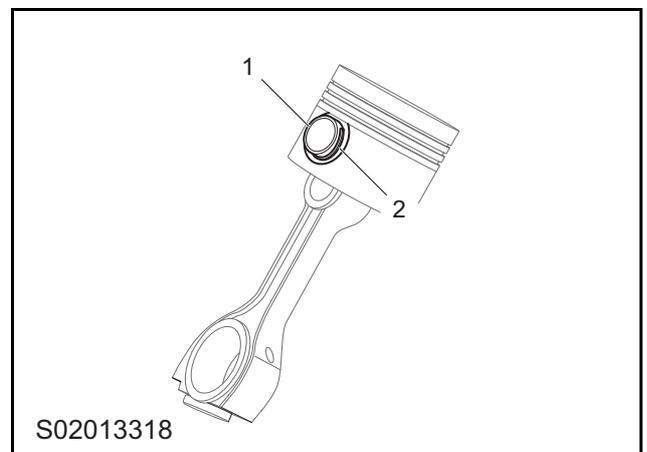


Disassembly

- 1 Remove the top compression ring (1), the second compression ring (2) and the multi-piece oil ring (3) successively.



- 2 Remove the piston pin retainer (2) fixing the piston pin (1) to the piston.



- 3 Disassemble the piston pin (1), the connecting rod (2) and the piston (3) successively.

Description and Operation

Accessory Belt System

The accessory belt system includes accessory belt, idler, tension pulley, crankshaft shock absorber, timing drive belt, timing idler, timing tension pulley, camshaft timing pulley, high-pressure oil pump, steering pump, vacuum pump, alternator, compressor and other components.

As an important part of the engine valve train, the timing belt connected with the crankshaft is used to ensure the accurate time of intake and exhaust under a certain transmission ratio. The use of a belt rather than a gear for transmission is due to such advantages of it as low noise, small variation and ease of compensation. However, it is obvious that the service life of a belt is shorter than a metal gear, so the belt shall be replaced regularly.

The timing belt functions as a link, the upper and lower parts of which are connected with the timing pulley on the engine cylinder head and the crankshaft timing pulley respectively. The timing pulley is connected with the camshaft with a cam contacting the small rocker which produces pressure through the power from the timing belt, functioning as a jack, jacking the intake valve to let the atomized gasoline enter the cylinder block and the exhaust valve to bleed the cylinder block. Once the camshaft concavity (note: not convexity) touches the small rocker, the intake and exhaust valves will close, thus compression ratio generates, the distributor ignites, internal combustion starts and power is generated.

The timing belt is a consumable part, once it breaks, the camshaft will of course not operate in the right direction. At this time, it is very likely that the valve will collide with the piston, causing serious damage. Therefore, the timing belt must be replaced based on the mileage or time specified by the manufacturer.

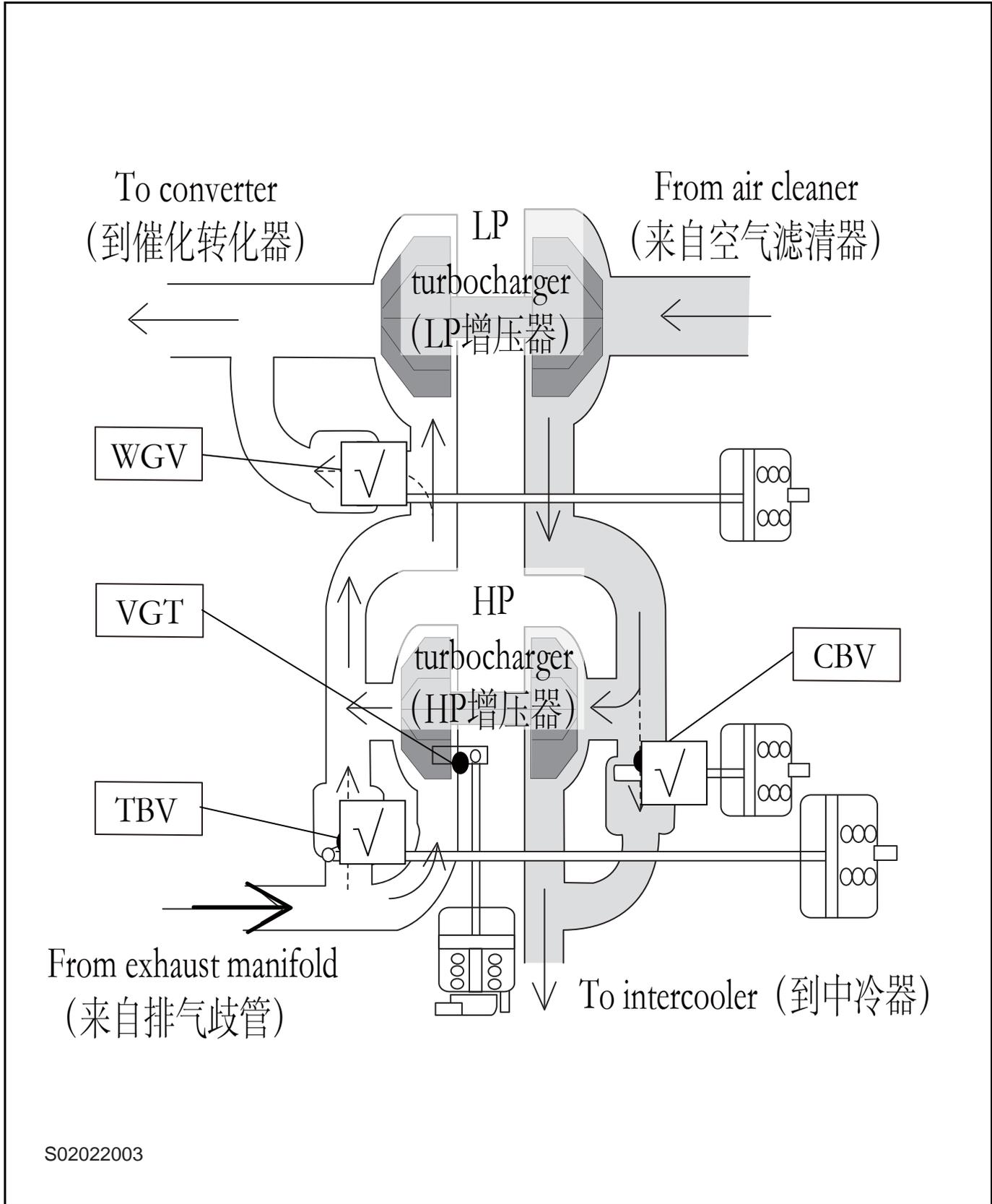
During the operation of the engine, four processes of intake, compression, explosion and exhaust carries out continuously in the cylinder, and the timing of each step matches the motion state and position of the piston to make the intake, exhaust and the rise and fall of the piston coordinate with each other. The timing belt acts as a "bridge" in the engine, driven by the crankshaft, transferring power to the corresponding parts. In order to ensure the stability of the timing system, a lot of premium cars use

metal chains instead of belts. Since the broken toothed timing belt can cause severe damage to the internal engine valves, manufacturers generally specify the replacement period of the timing belt.

Timing belts are rubber parts. As the engine working time increases, the timing belt and its accessories such as timing belt tension pulley, timing belt tensioner and water pump, wear or age. Therefore, for engines equipped with timing belts, manufacturers will have strict requirements on the regular replacement of timing belts and accessories within the specified period. The replacement period varies with the structure of the engine. Generally, the parts should be replaced when the vehicle travels to 60,000 to 100,000 kilometers. The specific replacement period should be subject to the maintenance manual.

Engine Control System

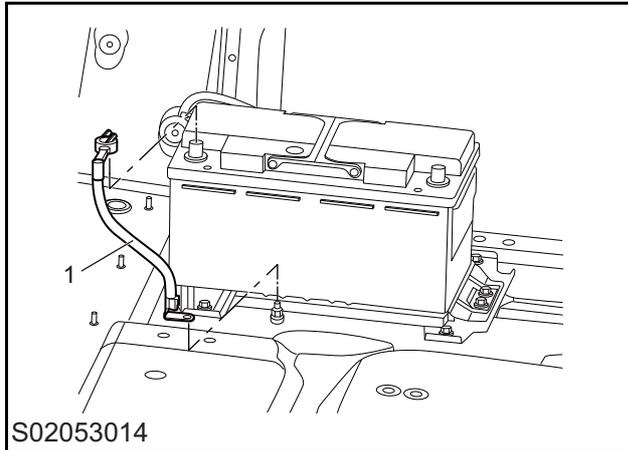
When the engine is running at a high speed of about 3000-4000 rpm, HP TC is bypassed, but still compresses the air (only the compression amount is lower); LP TC is the main force.



Negative Battery Terminal Replacement (Without Start & Stop)

Removal

- 1 Move the driver seat to the frontmost place.
- 2 Open the battery negative cover.
- 3 Remove the negative battery cable (1).



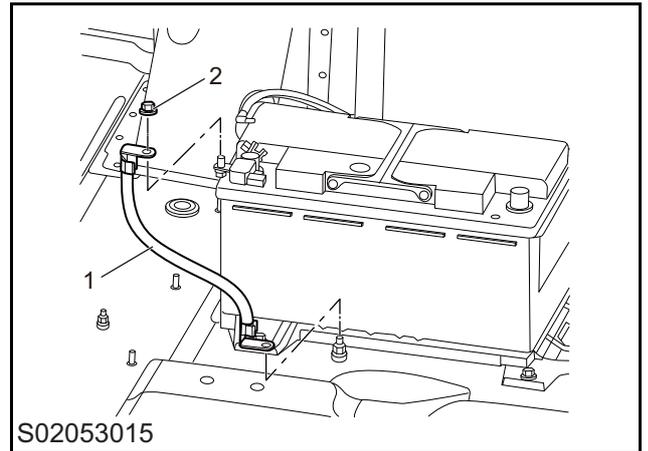
Installation

- 1 Install the negative battery terminal.
- 2 Install the battery negative nuts, tighten to 5 ± 1 Nm, and check the torque.
- 3 Fasten the ground wire at the lower end to the ground wire of the body, tighten to 9 ± 1 Nm, and check the torque.
- 4 Install the battery negative cover.
- 5 Reset the driver seat.

Negative Battery Terminal Replacement (With Start & Stop)

Removal

- 1 Move the driver seat to the frontmost place.
- 2 Open the battery negative cover.
- 3 Remove the nuts (1) between the negative battery terminal to the battery sensor.
- 4 Remove the negative battery cable (2).



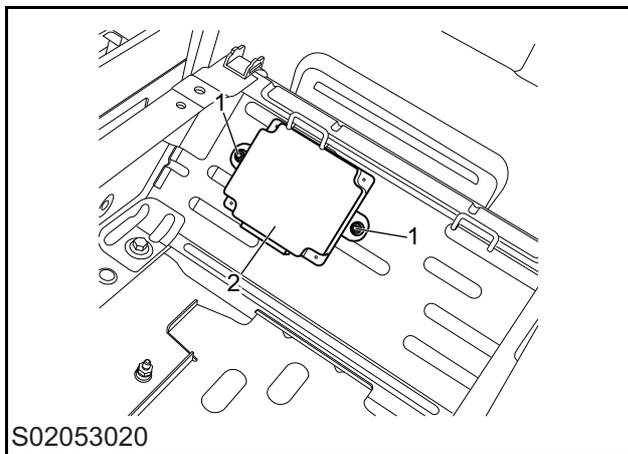
Installation

- 1 Install the negative battery terminal.
- 2 Install the nuts that fix the negative battery terminal to the battery sensor, tighten to 9 ± 1 Nm, and check the torque.
- 3 Fasten the ground wire at the lower end to the ground wire of the body, tighten to 9 ± 1 Nm, and check the torque.
- 4 Install the battery negative cover.
- 5 Reset the driver seat.

DC Voltage Stabilizer Assembly Replacement

Removal

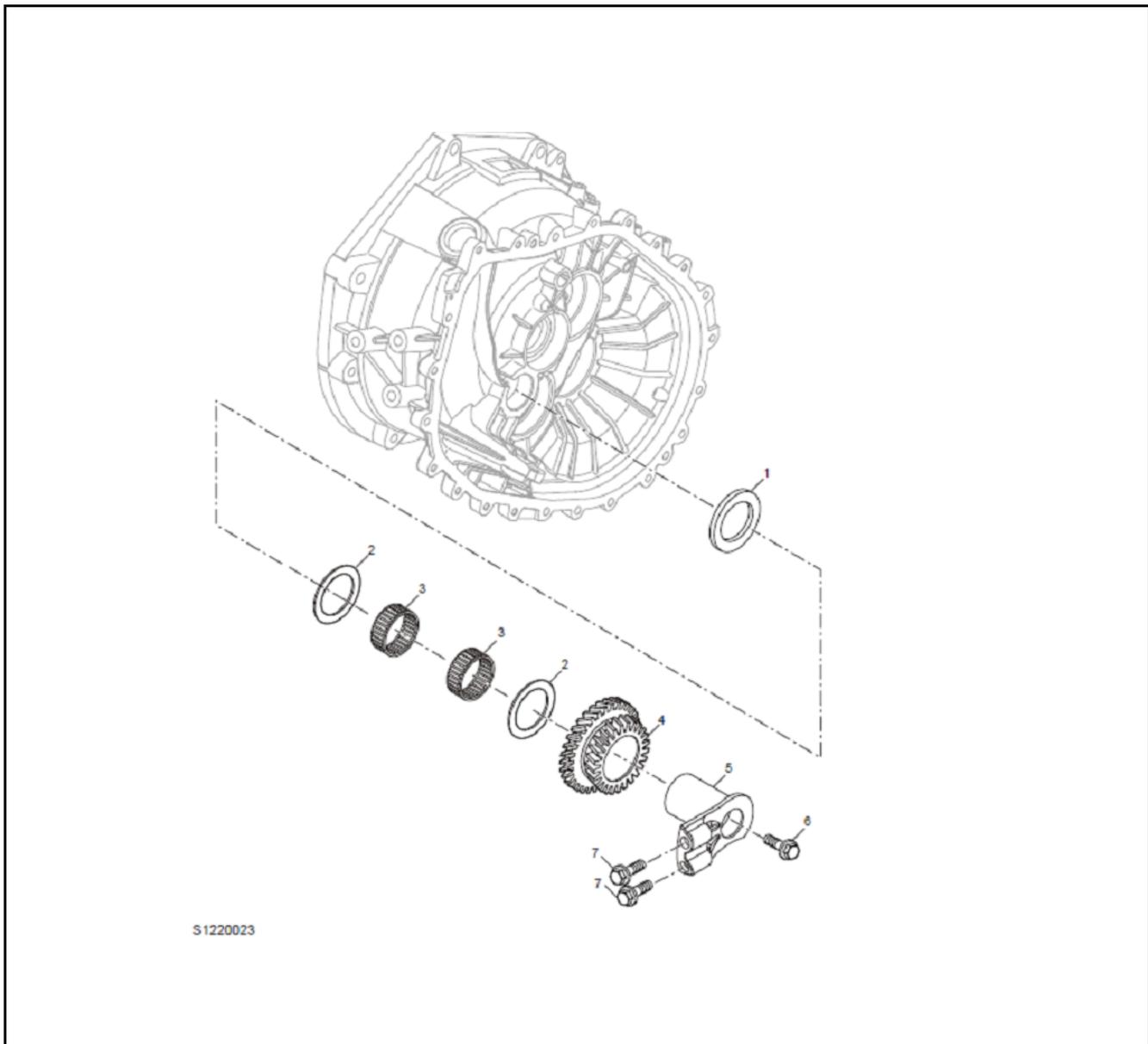
- 1 Remove the driver seat. Refer to “Driver Seat Replacement”.
- 2 Remove the battery. Refer to “Battery Replacement”.
- 3 Disconnect the electrical connector of the DC voltage stabilizer assembly.
- 4 Remove the 2 nuts of the DC voltage regulator assembly(1).
- 5 Remove the DC voltage stabilizer assembly(2).



Installation

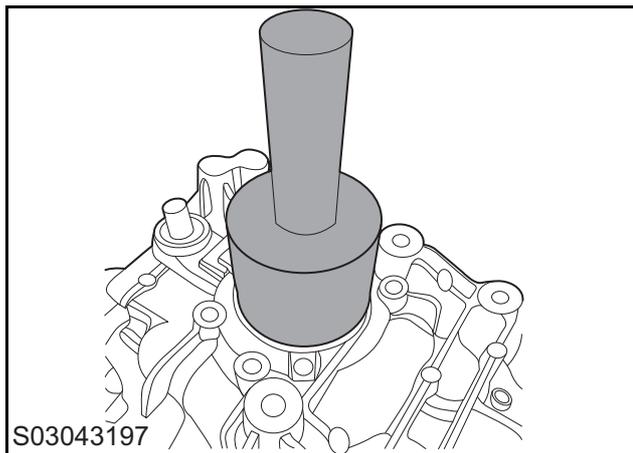
- 1 Install the DC voltage stabilizer assembly(2).
- 2 Install nuts of the DC voltage stabilizer assembly, tighten to 9 ± 1 N·m, and check the torque.
- 3 Connect the electrical connector of the DC voltage stabilizer assembly.
- 4 Install the battery. Refer to “Battery Replacement”.
- 5 Install the driver seat. Refer to “Driver Seat Replacement”.

Reverse Gear Idler Shaft

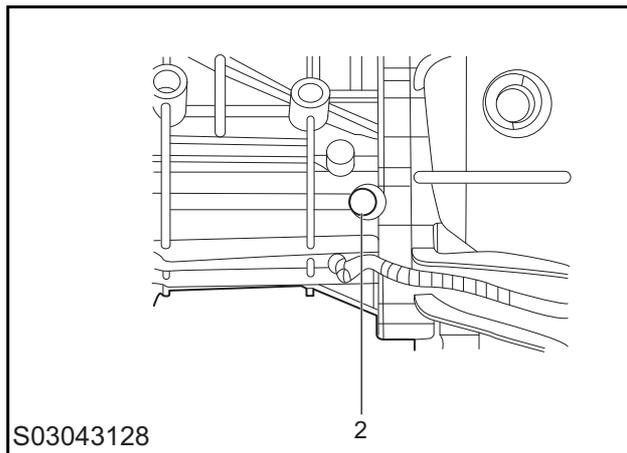


- 1 Reverse Gear Idler Gasket
- 2 Thrust Bearing
- 3 Reverse Gear Idler Gasket
- 4 Reverse Gear Double Idler Gear Assembly
- 5 Reverse Gear Idler Shaft
- 6 Hexagon Socket Flat Head Bolt
- 7 Bolt

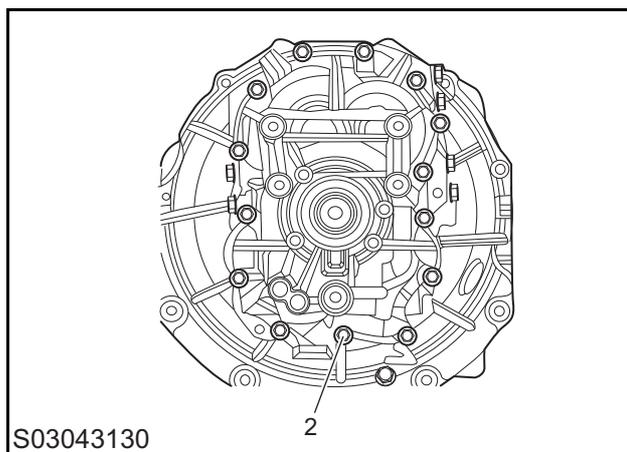
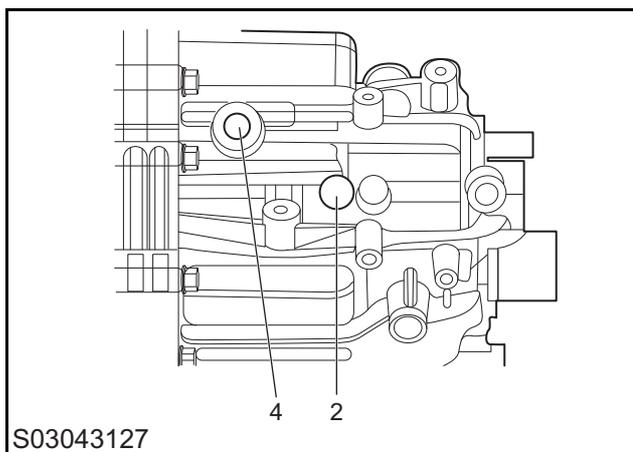
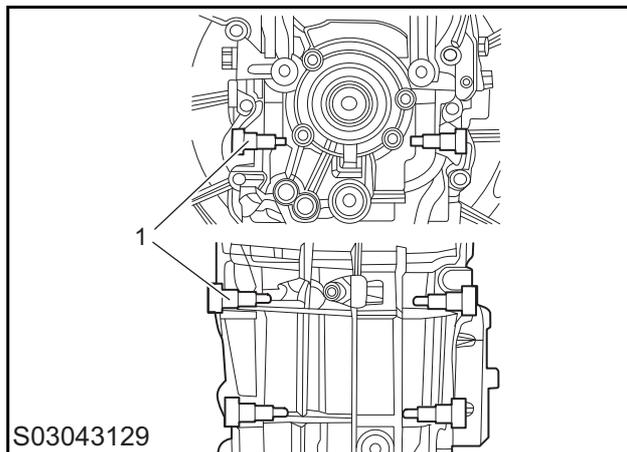
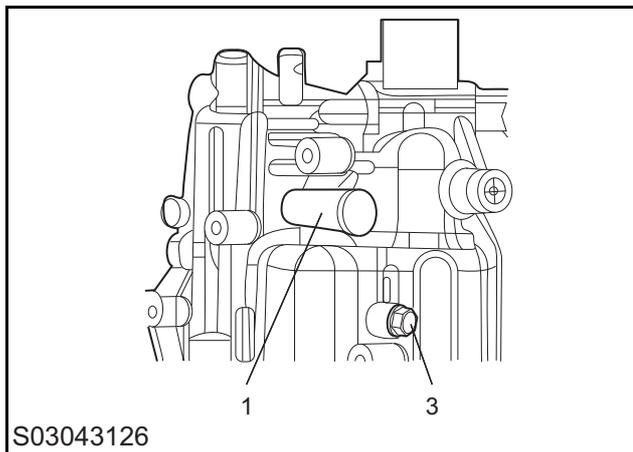
Manual Transmission 6MT



7 Remove the locating pin of shifter (1), 4 locating pins of shift fork shaft (2), 王-shaped slot bolt (3) and locating pin of gear selection/N gear (4) with a special tool C00189271.



8 Remove 6 shift fork pin shafts (1), unscrew and remove 14 bolts M8X40 (2), and remove the rear cover assembly (3) with a special tool C00189271.



Power Steering

Caution: An error-proof connection is made between the steering column and the steering gear extension shaft through the spline interface. When installing, pay attention to the installation direction, and do not install by force.

- 2 Fix the lower end of steering gear extension shaft to the steering gear, install 1 bolt, tighten it to $30\pm 3\text{Nm}$, and check the torque.
- 3 Lower the vehicle.
- 4 Fix the upper end of steering gear extension shaft to the steering column, install 1 bolt, tighten it to $35\pm 3\text{Nm}$, and check the torque.

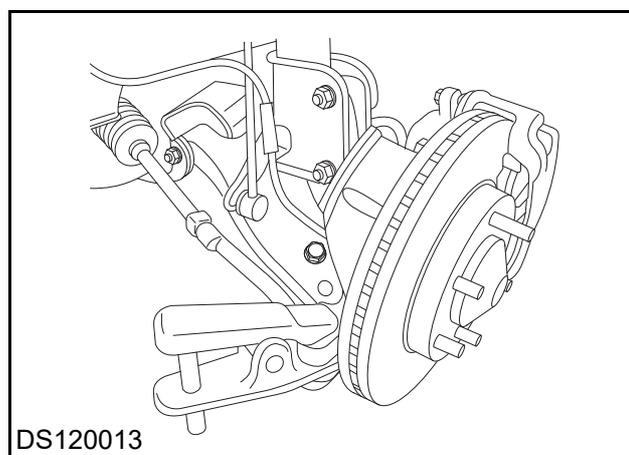
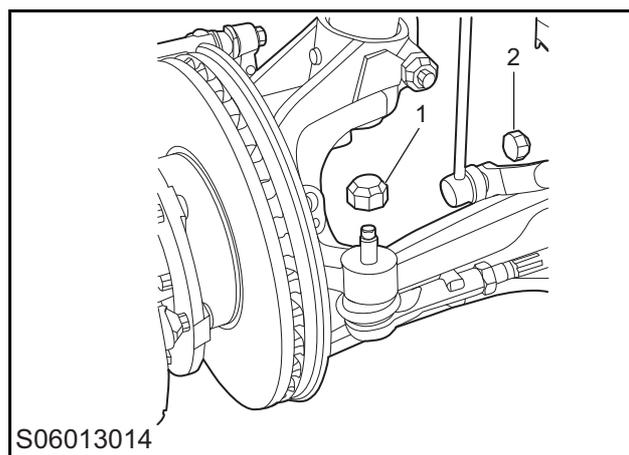
Steering Gear Assembly Replacement

Removal

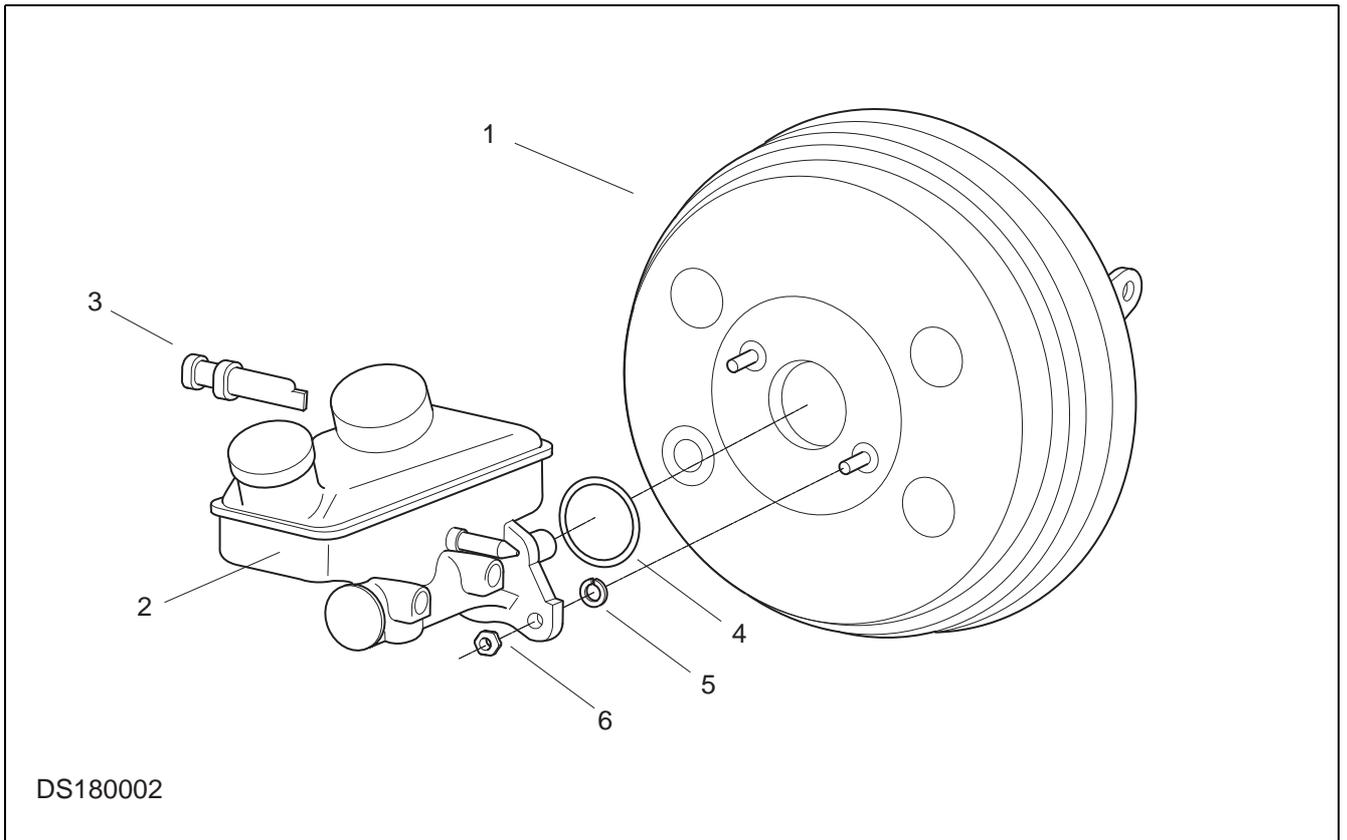
- 1 Disconnect the battery negative cable.
- 2 Raise the vehicle.

Caution: Do not operate under a vehicle supported by a jack only. The vehicle must be supported on a safe device.

- 3 Remove the left and right front wheels. Refer to "Wheel Replacement".
- 4 Locate the steering wheel in the straight forward position.
- 5 Remove 1 nut (1) fixing the left and right steering gear outer tie rod to the steering knuckle, and detach the tie rod ball head with a special tool C00017036.
- 6 Remove 2 nuts (2) fixing the stabilizer bar to the left and right front connecting rods.



Exploded View of Vacuum Booster Assembly

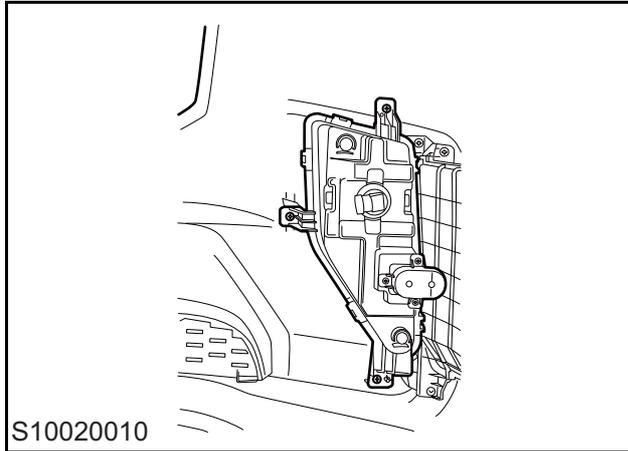


- 1 Vacuum booster
- 2 Master cylinder and fluid reservoir
- 3 Alarm switch for fluid reservoir
- 4 Seal ring for vacuum booster to brake master cylinder assembly
- 5 Washer - Vacuum Booster to Master Cylinder
- 6 Nut - Vacuum Booster to Master Cylinder

Front Fog Lamp Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the front bumper.
- 3 Remove the 3 bolts fixing the front fog lamp.



- 4 Disconnect the harness connector.
- 5 Remove the front fog lamp assembly.
- 6 Remove the inoperative bulb.

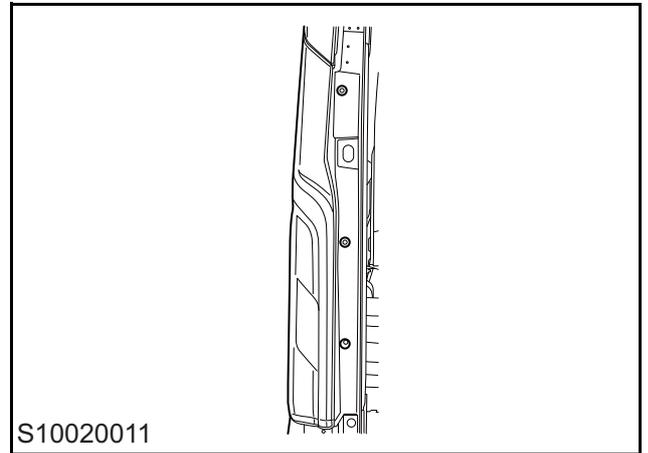
Installation

- 1 Connect the harness connector.
- 2 Install the bolts fixing the front fog lamps, tighten to 4 ± 0.5 N.m, and check the torque.
- 3 Install the front bumper assembly.
- 4 Connect the battery negative cable.

Rear Combination Lamp Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the 3 bolts fixing the rear combination lamp.



- 3 Disconnect the harness connector.
- 4 Remove the rear combination lamp.
- 5 Remove the inoperative bulb.

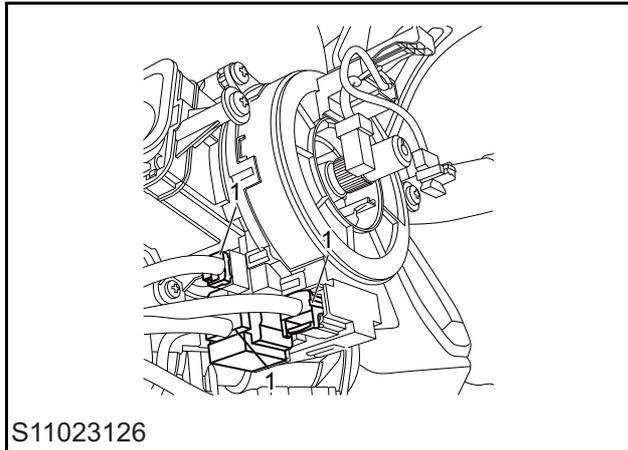
Installation

- 1 Connect the harness connector.
- 2 Install the buckle and fixing bolts of the rear combination lamp, tighten to 4 ± 0.5 N.m, and check the torque.
- 3 Connect the battery negative cable.

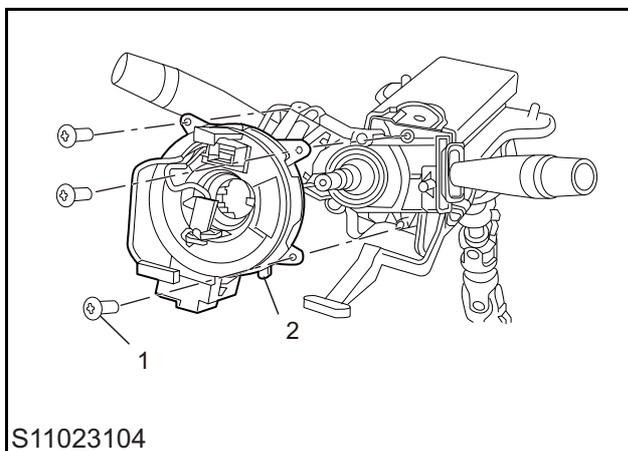
Clock Spring Assembly and Clock Spring Returning Ring Replacement

Removal

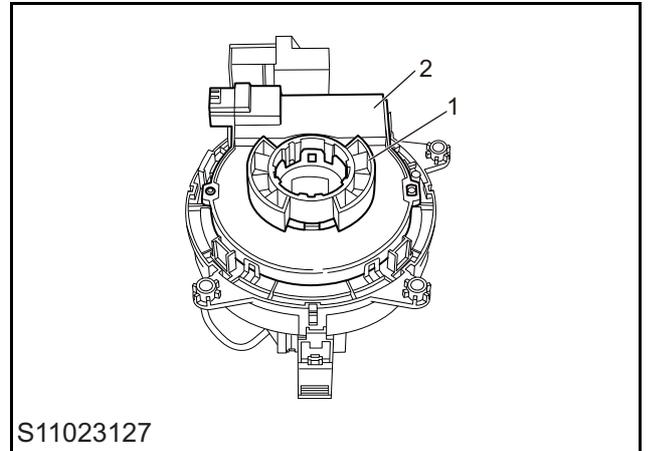
- 1 Remove the steering wheel (driver) airbag assembly. Refer to "Steering Wheel (Driver) Airbag Assembly Replacement".
- 2 Remove the steering wheel assembly. Refer to "Steering Wheel Assembly Replacement".
- 3 Remove the instrument cluster shroud assembly. Refer to "Instrument Cluster Shroud Assembly Replacement".
- 4 Remove the steering column shroud. Refer to "Steering Column Shroud Replacement".
- 5 Disconnect the electrical connector of the clock spring assembly, the clock spring returning ring and the steering angle sensor (1).



- 6 Remove 3 bolts of the clock spring assembly (1).
- 7 Remove the clock spring assembly, the clock spring returning ring and the steering angle sensor (2).



- 8 Pry off the clips, and remove the clock spring returning ring (1).
- 9 Pry off the clips, and remove the steering angle sensor (2).

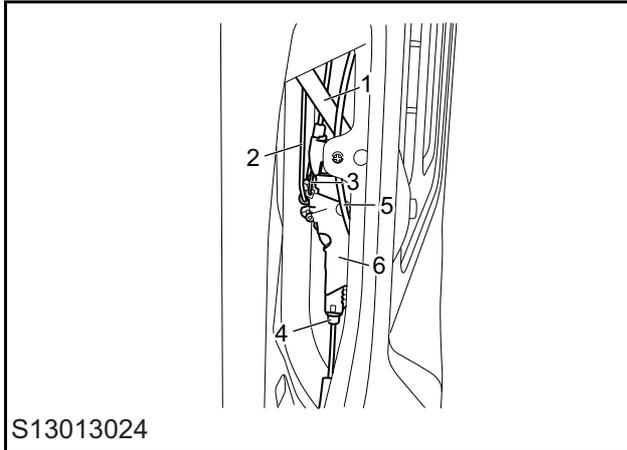


Installation

- 1 Install the clock spring returning ring to the clock spring.
- 2 Install the steering angle sensor to the clock spring assembly.
- 3 Install the clock spring assembly, the clock spring returning ring and the steering angle sensor to the steering column.
- 4 Install 3 bolts of the clock spring assembly, tighten them to 1.5 ± 0.5 N.m, and check the torque.
- 5 Connect the electrical connector of the clock spring assembly, the clock spring returning ring and the steering angle sensor.
- 6 Install the steering column shroud. Refer to "Steering Column Shroud Replacement".
- 7 Install the instrument cluster shroud assembly. Refer to "Instrument Cluster Shroud Assembly Replacement".
- 8 Install the steering wheel assembly. Refer to "Steering Wheel Assembly Replacement".
- 9 Install the steering wheel (driver) airbag assembly. Refer to "Steering Wheel (Driver) Airbag Assembly Replacement".

Caution: Note: Installation Requirements of the Clock Spring:

- 1 The clock spring is retained with a pin, which shall not be pulled out before installing the



S13013024

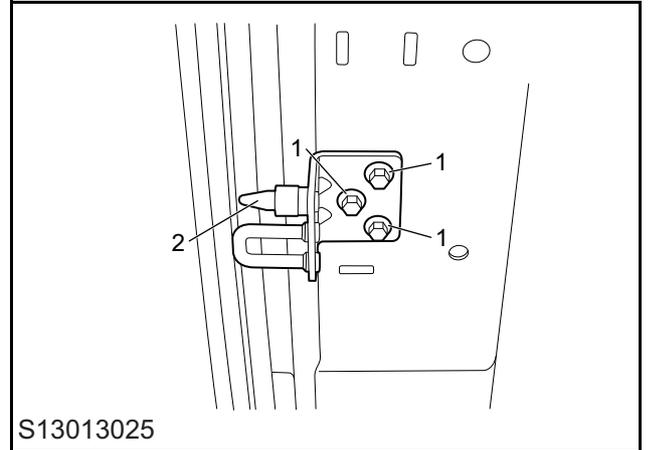
Installation

- 1 Install the rear door middle lock assembly.
- 2 Install the tail gate inner handle cable.
- 3 Install the tail gate outer handle cable.
- 4 Install the right tail gate upper lock unlock cable.
- 5 Install the tail gate lock cylinder lever.
- 6 Connect the rear door harness electrical connector.
- 7 Install 3 retaining bolts fixing the rear door middle lock assembly to the rear door.
- 8 Install the rear door waterproof membrane.
- 9 Install the tail gate trim panel. Refer to "Tail Gate Trim Panel Replacement".

Rear Door Upper Lock Catch Assembly Replacement

Removal

- 1 Remove 3 retaining bolts (1) fixing the rear door upper lock catch to the body, and remove the rear door upper lock catch assembly (2).

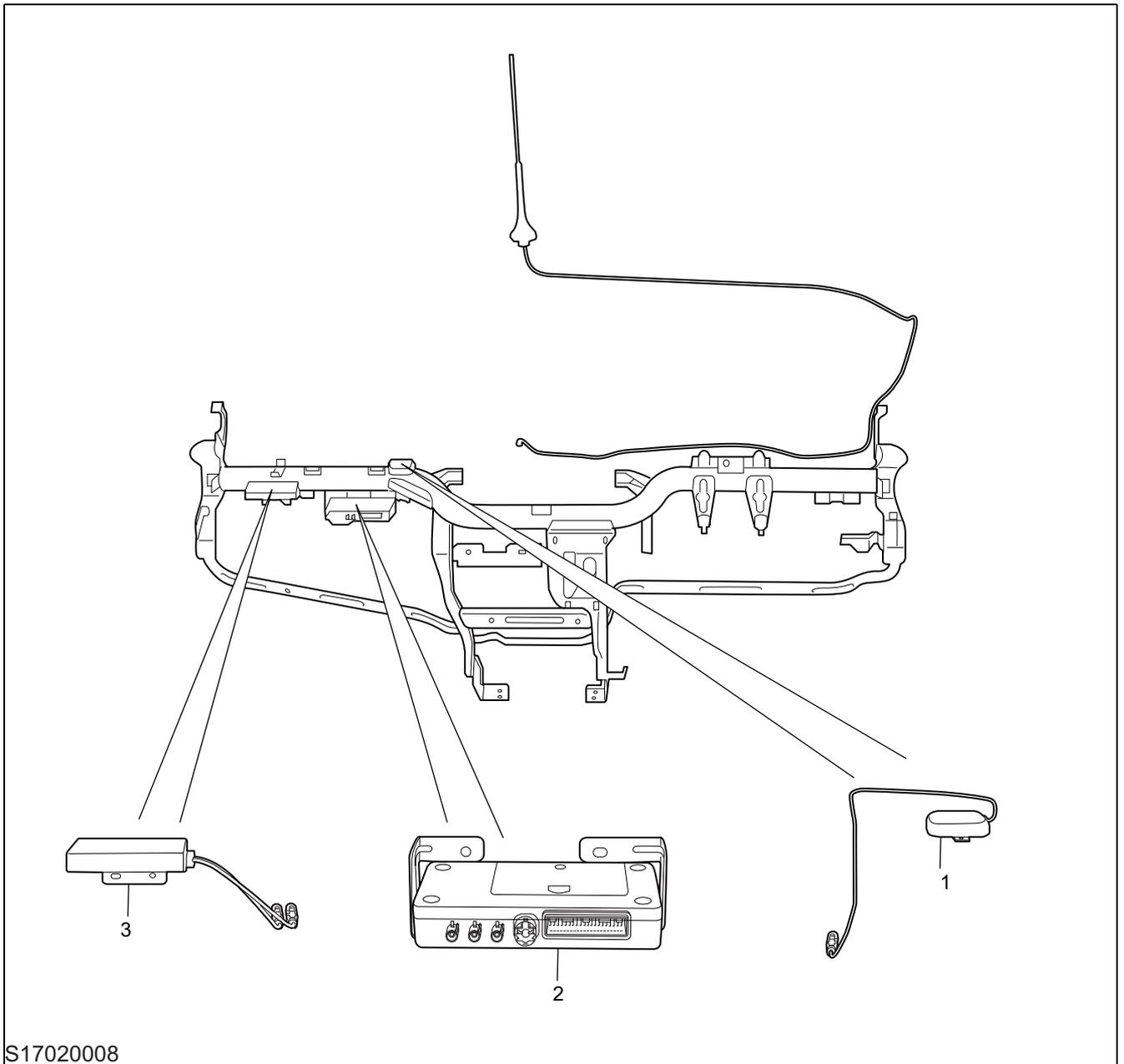


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Installation

- 1 Place the rear door upper lock catch assembly, and install 3 retaining bolts fixing the rear door upper lock catch to the body.

Layout 2



- 1 BD/GPS Output Antenna
- 2 On-board Communication Module
- 3 4G Antenna Assembly