

Overview

General Information

Major vehicle dimension parameters

Model	SV63C-6610/E610	SV63C-6620/E620
Driving type	Front drive	Front drive
Length, mm	5546	5940
Width, mm	2062	2062
Height, mm	2525	2525
Wheelbase, mm	3366	3760
Front/Rear suspension, mm	1020/1160	1020/1160
Front/Rear track, mm	1734/1756	1734/1756
Minimum turning circle diameter, m	13.4	14.8

Vehicle weight parameters

Model	SV63C-6610/E610		SV63C-6620/E620		
Capacitance of high-voltage battery pack	51.5kWh	72kWh	51.5kWh	72kWh	88.55kWh
Gross vehicle weight, kg	3500	3500	3500	3500	3500
Curb weight of a vehicle, kg	2300	2460	2340	2520	2640
Axle load (Front/rear axle load under gross vehicle weight), kg	1670/1830	1660/1840	1725/1775	1740/1760	1645/1855
Passenger capacity	3	3	3	3	3

Electric Drive System

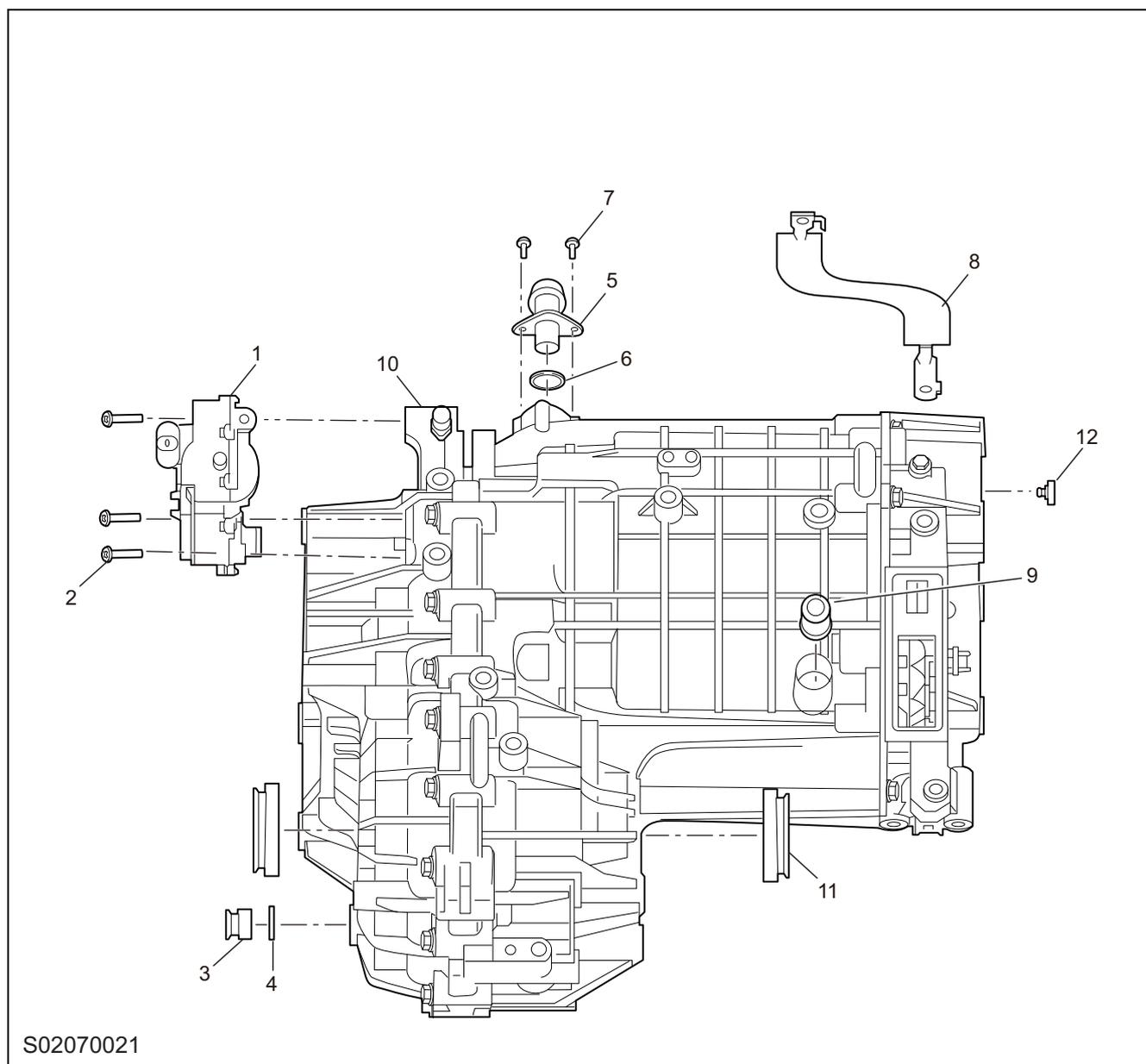
Specification

Fastener Specifications

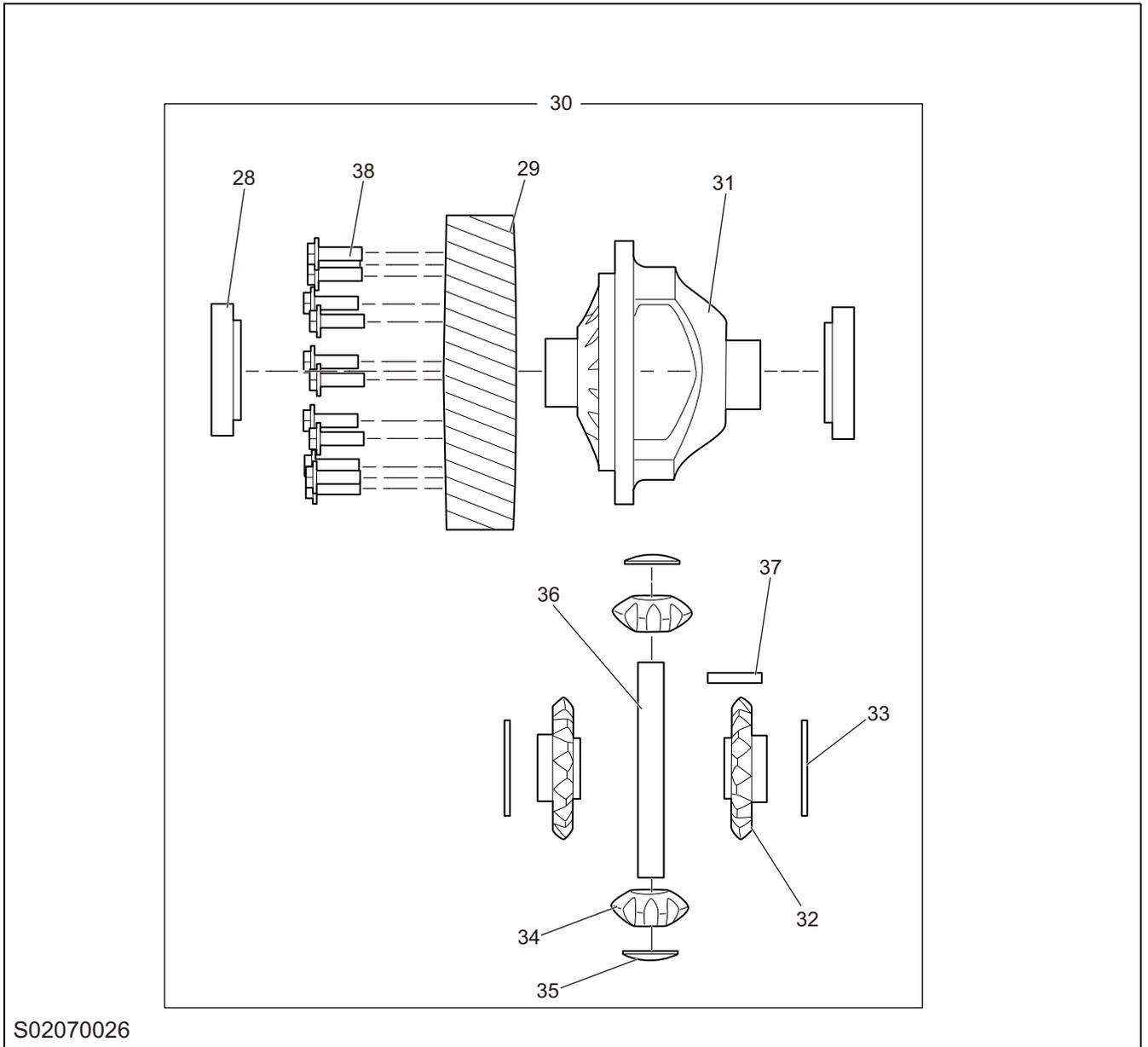
Name	Torque (Nm)
Drain plug	50 ± 5 Nm
Bolt - Water Outlet Pipe Fitting	3 ± 0.3 Nm
Bolt - Electric Parking Actuator	11 ± 1 Nm
Breather plug	10 Nm
Bolt - PEB Assembly	30 ± 5 Nm
Bolt - Shock Pad Retaining	30 ± 5 Nm
Bolt - Three-phase Harness to PEB	9 ± 1 Nm
Bolt - Rotary Transformer Cover	4.5 ± 0.5 Nm
Bolt - Housing	35 Nm
Bolt - Ratchet Shaft	16 ± 1.5 Nm
Bolt - Supporting Plate	16 ± 1.5 Nm
Filler plug	50 ± 5 Nm
Bolt - Main Reduction Gear to Differential Housing	55 Nm+42°
Bolt - Motor Suspension to Suspension Beam	180 ± 10 Nm
Bolt - Drive Motor Suspension to Motor	110 ± 10 Nm
Bolt - Reducer Suspension to Suspension Beam	180 ± 10 Nm
Bolt - Rear Suspension to Subframe	180 ± 10 Nm
Bolt - Reducer Suspension to Motor	110 ± 10 Nm
Bolt - Rear Suspension Assembly to Motor	110 ± 10 Nm
Bolt - Suspension Beam Assembly	180 ± 10 Nm

Electric Drive System

Exploded View of Accessories

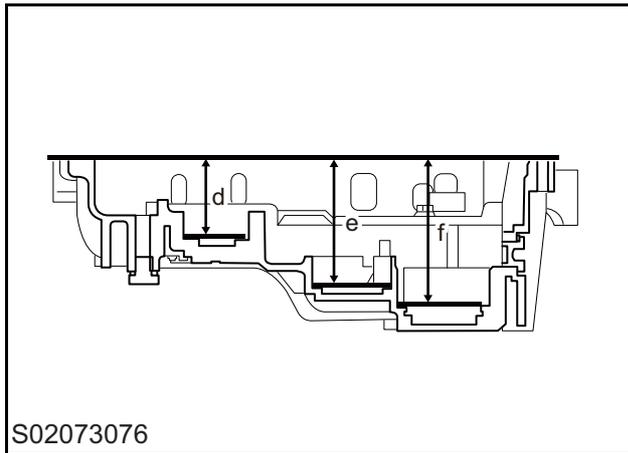


- | | | | |
|----|---|----|-----------------------------------|
| 1 | Electric parking actuator assembly | 11 | Differential oil seal 40 × 66 × 9 |
| 2 | Electric parking actuator assembly bolt M6 × 25 | 12 | Breather valve |
| 3 | Hexagon socket head plug M18 × 1.5 | | |
| 4 | Oil plug gasket ?18 × ?24 × 2 | | |
| 5 | Water pipe fitting | | |
| 6 | Cooling water pipe O-ring | | |
| 7 | Water pipe fitting bolt M4 × 10 | | |
| 8 | Ground wire | | |
| 9 | Water pipe fitting assembly | | |
| 10 | Breather plug assembly | | |



S02070026

- | | | | |
|----|---|----|-----------------------------------|
| 28 | Differential cone bearing 45 × 85 × 20.75 | 34 | Planet gear |
| 29 | Main reduction gear | 35 | Planet gear gasket |
| 30 | Differential assembly | 36 | Planet shaft |
| 31 | Differential housing | 37 | Coil spring pin D6 |
| 32 | Axle shaft gear | 38 | Main reduction gear bolt M10 × 33 |
| 33 | Axle shaft gear gasket | | |



- 3 Calculate the thickness d-a of differential cone bearing adjustment gasket, and select the gasket according to the table below.

Differential		
Minimum value \geq	Maximum value <	Selection of gasket
1.4	1.45	1.55
1.45	1.50	1.60
1.50	1.55	1.65
1.55	1.60	1.70
1.60	1.65	1.75
1.65	1.70	1.80
1.70	1.75	1.85
1.75	1.80	1.90
1.80	1.90	1.95
1.90	1.95	2.00
1.95	2.00	2.05
2.00	2.05	2.10
2.05	2.10	2.15
2.10	2.15	2.20
2.15	2.20	2.25

- 4 Calculate the thickness e-b of intermediate shaft cone bearing adjustment gasket, and select the gasket according to the table below.

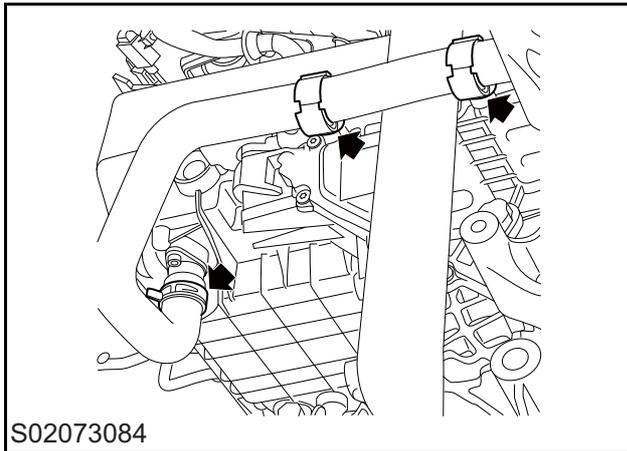
Intermediate shaft		
Minimum value \geq	Maximum value <	Selection of gasket
0.95	1.00	1.10
1.00	1.05	1.15
1.05	1.10	1.20
1.10	1.15	1.25
1.15	1.20	1.30
1.20	1.25	1.35
1.25	1.30	1.40
1.30	1.35	1.45
1.35	1.40	1.50
1.40	1.45	1.55
1.45	1.50	1.60
1.50	1.55	1.65
1.55	1.60	1.70
1.60	1.65	1.75
1.65	1.70	1.80

- 5 Calculate the thickness f-c of input shaft cone bearing adjustment gasket, and select the gasket according to the table below.

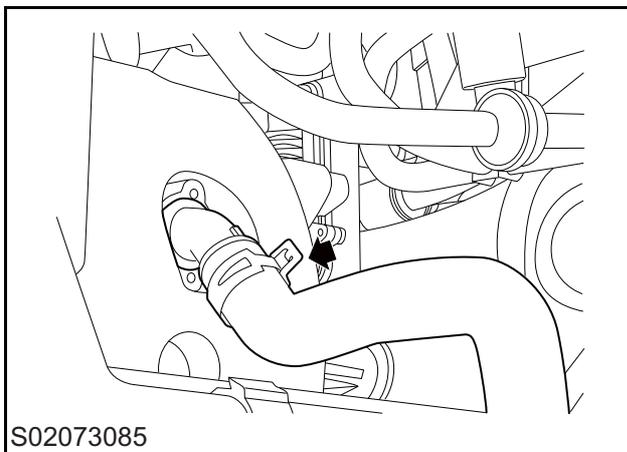
Electric Drive System Assembly Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the manual service disconnect. Refer to "Manual Service Disconnect Replacement".
- 3 Drain the coolant. Refer to "Coolant Drain".
- 4 Drain the reducer oil. Refer to "Reducer Oil Drain and Refill".
- 5 Remove the left/right axle shaft. Refer to "Axle Shaft Replacement".
- 6 Remove the A/C compressor. Refer to "A/C Compressor Replacement".
- 7 Disconnect the motor controller to charging and distribution unit hose from the motor.

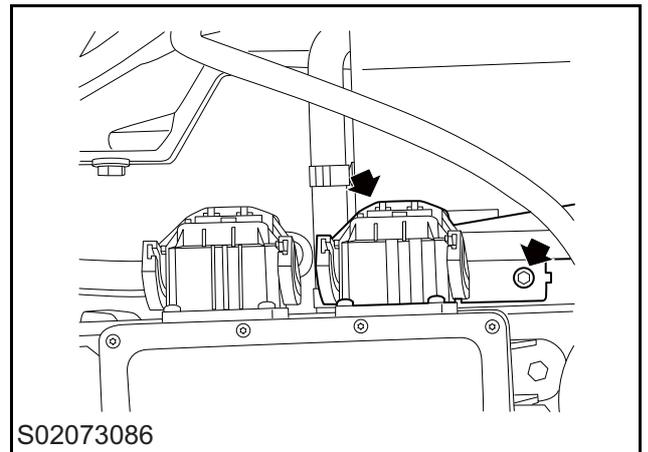


- 8 Disconnect the radiator inlet pipe.

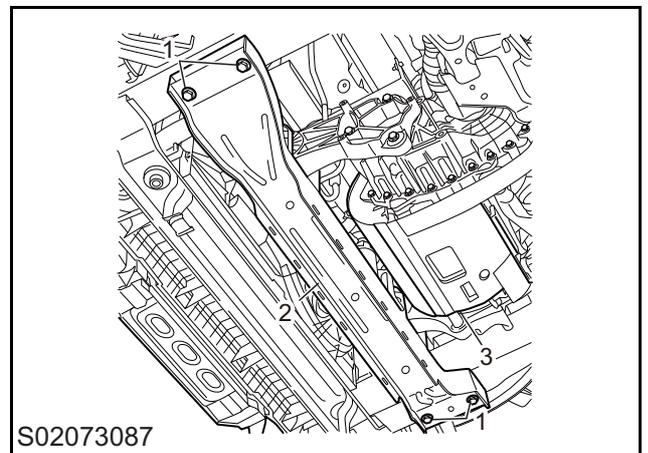


- 9 Remove the high-voltage harness from the charging and distribution unit end.

- 10 Remove the high-voltage harness bracket bolt.



- 11 Disconnect the ground wire.
- 12 The electric drive system assembly will be supported by an appropriate tool.
- 13 Remove the rear suspension assembly. Refer to "Rear Suspension Assembly Replacement".
- 14 Remove the suspension beam assembly bolt (1).
- 15 Remove the suspension beam assembly (2) and the electric drive assembly together.



- 16 Remove the drive motor suspension. Refer to "Drive Motor Suspension Replacement".
- 17 Remove the reducer suspension. Refer to "Reducer Suspension Replacement".
- 18 Separate the suspension beam assembly and the electric drive system assembly.

Installation

- 1 Install the electric drive system assembly.

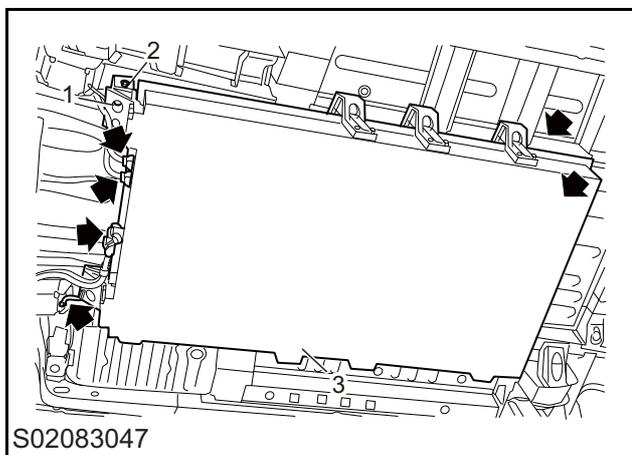
Power and Control System

Power Battery Replacement (51.5Kwh/72Kwh Battery)

Removal

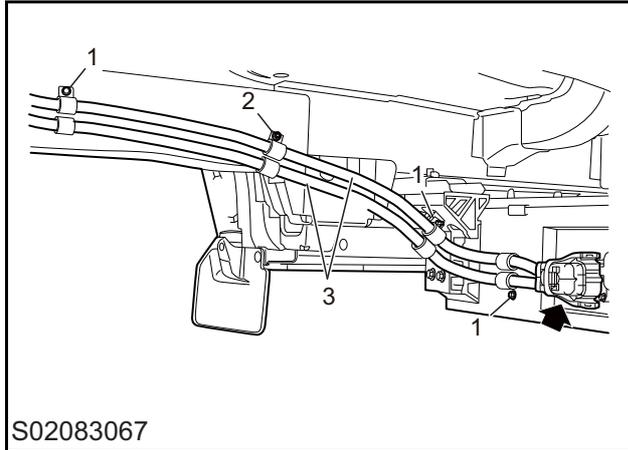
- 1 Turn off the key power of the complete vehicle and wait for 3-5 minutes.
- 2 Remove the service switch. Refer to "Service Switch Replacement".
- 3 Lift the vehicle to the appropriate height.
- 4 Disconnect the low-voltage harness connector from the battery.
- 5 Disconnect the power battery high-voltage output harness.
- 6 Disconnect the battery ground wire.
- 7 Use an appropriate bracket to support the weight of the rear battery.
- 8 Remove 8 bolts (1) connecting the battery to the adapter bracket.
- 9 And lower the bracket, remove the power battery (2).
- 10 If necessary, remove the adapter bracket to vehicle body bolt (3) and the adapter bracket.

- 5 Connect the battery ground wire.
- 6 Connect the harness connector to the battery.
- 7 Install the service switch. Refer to "Service Switch Replacement".
- 8 Perform the self-learning operation to the power battery again.



Installation

- 1 If necessary, install the bolts connecting the adapter bracket to the vehicle body, tighten them to 110 ± 10 Nm, and check the torque.
- 2 Lift the bracket and install the power battery.
- 3 Install 8 bolts connecting the battery to the adapter bracket, tighten them to 110 ± 10 Nm and check the torque.
- 4 Connect the power battery high-voltage output harness.



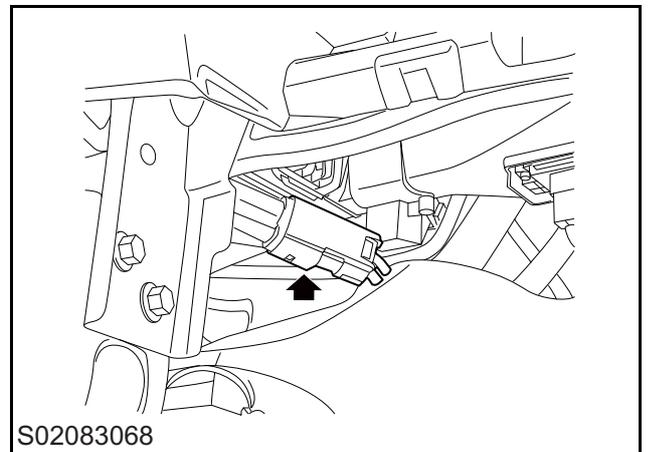
Installation

- 1 Install the power battery high-voltage output harness assembly.
- 2 Connect the high-voltage harness to the charging and distribution unit.
- 3 Connect the power battery high-voltage output harness assembly to the power battery.
- 4 Install the power battery high-voltage output harness assembly bracket nut, tighten it to 9 ± 1 Nm and check the torque.
- 5 Install the power battery high-voltage output harness assembly bracket bolt, tighten it to 9 ± 1 Nm and check the torque.
- 6 Connect the power battery high-voltage output harness assembly to the charging and distribution unit.
- 7 Install the sound absorbing cover. Refer to "Sound Absorbing Cover Replacement".
- 8 Install the service switch. Refer to "Service Switch Replacement".
- 9 Connect the negative battery cable.

Front Electric Heater High-voltage Harness Assembly Replacement

Removal

- 1 Turn off the key power of the complete vehicle and wait for 3-5 minutes.
- 2 Disconnect the negative battery cable.
- 3 Remove the service switch. Refer to "Service Switch Replacement".
- 4 Remove the front passenger footwell air duct.
- 5 Remove the middle lower guard plate.
- 6 Disconnect the front electric heater high-voltage harness assembly from the front electric heater.



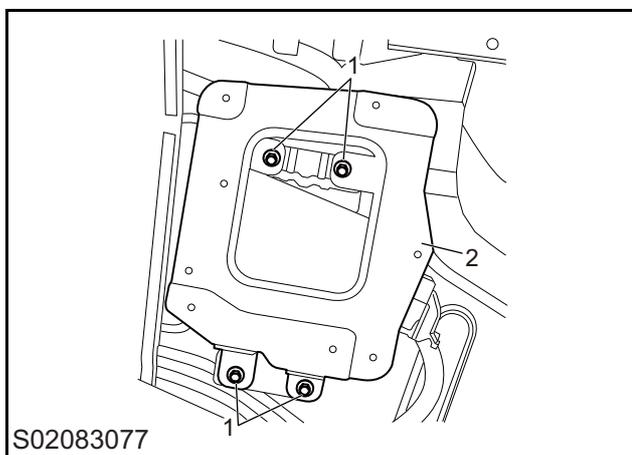
- 7 Remove the sound absorbing cover. Refer to "Sound Absorbing Cover Replacement".
- 8 Disconnect the front electric heater high-voltage harness assembly from the charging and distribution unit.
- 9 Disconnect the front electric heater high-voltage harness assembly from the vehicle body.
- 10 Remove the front electric heater high-voltage harness assembly (1).

Power and Control System

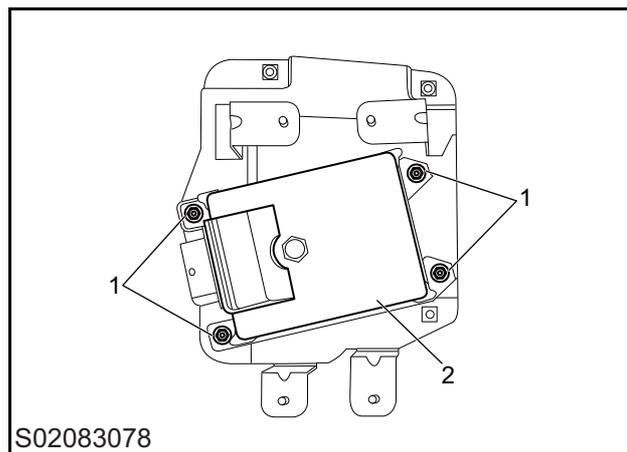
Electric Vehicle Communication Controller Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the service switch. Refer to "Service Switch Replacement".
- 3 Remove the complete vehicle controller. Refer to "Complete Vehicle Controller Replacement".
- 4 Disconnect the electrical connector of the electric vehicle communication controller.
- 5 Remove the bracket bolt (1).
- 6 Remove the bracket (2) and the electric vehicle communication controller together.



- 7 Remove the electric vehicle communication controller bolt (1).
- 8 Remove the electric vehicle communication controller (2).



Installation

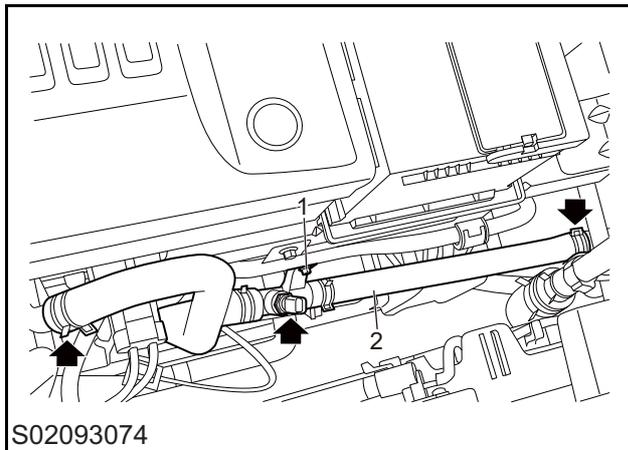
- 1 Install the electric vehicle communication controller and its bracket.
- 2 Install the electric vehicle communication controller bolts, tighten them to 9 ± 1 Nm, and check the torque.
- 3 Install the bracket and the electric vehicle communication controller assembly to the vehicle body.
- 4 Install the bracket bolts, tighten them to 9 ± 1 Nm, and check the torque.
- 5 Connect the electrical connector of the electric vehicle communication controller.
- 6 Install the complete vehicle controller. Refer to "Complete Vehicle Controller Replacement".
- 7 Install the service switch. Refer to "Service Switch Replacement".
- 8 Connect the negative battery cable.

Electric Water Pump to Motor Controller Hose Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the service switch. Refer to "Service Switch Replacement".
- 3 Drain the coolant of electric drive system.
- 4 Disconnect the electric water pump to motor controller hose from the charging and distribution unit.
- 5 Disconnect the electric water pump to motor controller hose from the electric water pump.
- 6 Disconnect the water temperature sensor harness connector from the electric water pump to motor controller hose.
- 7 Remove the electric water pump to motor controller hose bracket bolt (1).
- 8 Remove the electric water pump to motor controller hose (2).

- 7 Install the service switch. Refer to "Service Switch Replacement".
- 8 Connect the negative battery cable.



Installation

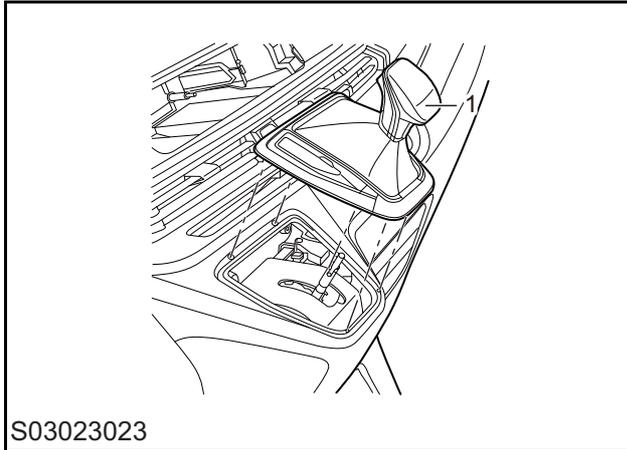
- 1 Install the electric water pump to motor controller hose.
- 2 Install the electric water pump to motor controller hose bracket bolt and tighten it.
- 3 Connect the electric water pump to motor controller hose to the electric water pump.
- 4 Install the electric water pump to motor controller hose to the charging and distribution unit.
- 5 Install the water temperature sensor harness connector.
- 6 Fill the coolant of electric drive system.

Service Guide

Shifting Handle Assembly Replacement

Removal

- 1 Pry the shifting lever protecting sleeve.
- 2 Carefully pull up the shifting lever handle, and remove the shifting handle assembly (1) from the shifting lever.



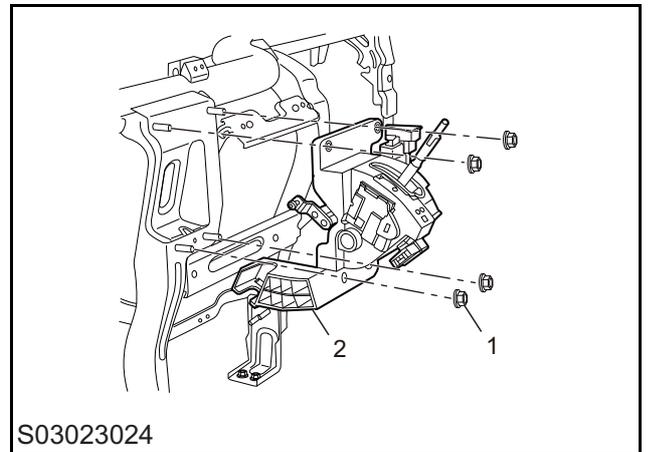
Installation

- 1 Locate the protecting sleeve on the shifting lever of gear shifter.
- 2 Press the handle into shifting lever and in place.
- 3 Clamp the shifting handle assembly onto the center console lower panel assembly.

Transmission Control Lever Assembly Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the instrument panel lower body assembly. Refer to "Instrument Panel Lower Body Assembly Replacement".
- 3 Disconnect the electrical connector of the control lever.
- 4 Remove 4 transmission control lever nuts (1).
- 5 Remove the transmission control lever assembly (2).



Installation

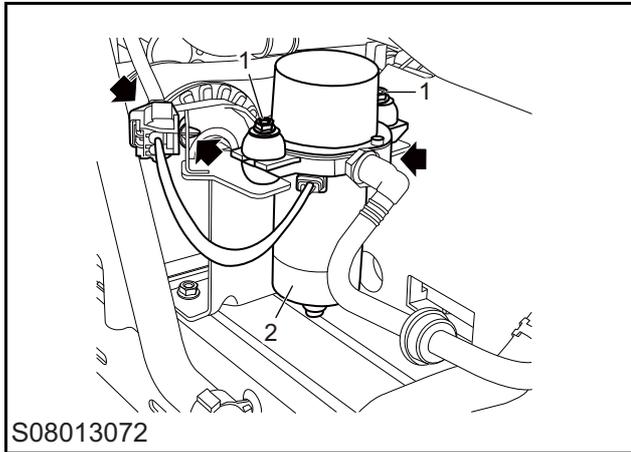
- 1 Locate the transmission control lever to the instrument panel beam.
- 2 Install 4 transmission control lever nuts, tighten them to 20 ± 2 Nm, and check the torque.
- 3 Connect the electrical connector of the control lever.
- 4 Install the instrument panel lower body assembly. Refer to "Instrument Panel Lower Body Assembly Replacement".
- 5 Connect the negative battery cable.

Brake System

Electronic Vacuum Pump Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the front bottom deflector.
- 3 Disconnect the harness from the vacuum pump connector.
- 4 Disconnect the vacuum pump connector from the bracket.
- 5 Disconnect the vacuum tube from the vacuum pump.
- 6 Remove the bolt (1) of the electronic vacuum pump.
- 7 Remove the electronic vacuum pump (2).



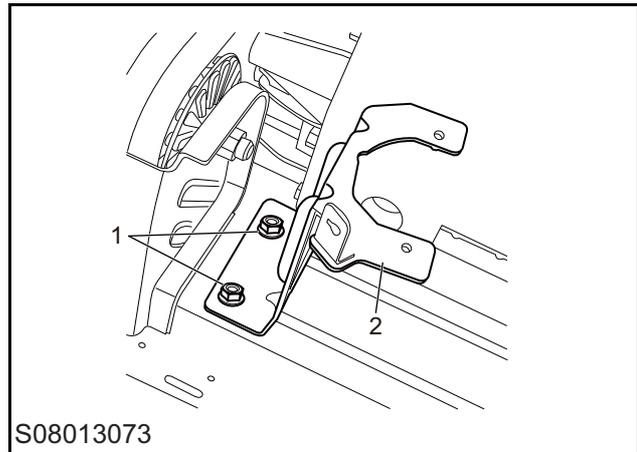
Installation

- 1 Install the electronic vacuum pump.
- 2 Install the electronic vacuum pump bolts, tighten them to 9 ± 1 Nm, and check the torque.
- 3 Connect the quick connector of the vacuum tube to the vacuum pump.
- 4 Connect the connector of the vacuum pump.
- 5 Install the front bumper assembly. Refer to "Front Bumper Assembly Replacement".
- 6 Connect the negative battery cable.

Electronic Vacuum Pump Bracket Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the electronic vacuum pump. Refer to "Electronic Vacuum Pump Replacement".
- 3 Remove the electronic vacuum pump bracket bolt (1).
- 4 Remove the electronic vacuum pump bracket (2).



Installation

- 1 Install the electronic vacuum pump bracket.
- 2 Install the electronic vacuum pump bracket bolts, tighten them to 23 ± 2 Nm, and check the torque.
- 3 Install the electronic vacuum pump. Refer to "Electronic Vacuum Pump Replacement".
- 4 Connect the negative battery cable.

Heating, Ventilation and Air Conditioning

Specification

Fastener Specifications

Name	Torque (Nm)
Bolt - A/C Compressor	22 ± 2 Nm
Bolt - A/C Compressor Exhaust Pipe to Compressor Assembly	22 ± 2 Nm
Bolt - A/C Compressor Inlet Pipe to Compressor Assembly	22 ± 2 Nm
Bolt - A/C Compressor Exhaust Pipe to Condenser Assembly	9 ± 1 Nm
Bolt - Condenser Outlet Pipe Assembly to Condenser Assembly	9 ± 1 Nm
Bolt - Condenser Outlet Pipe Assembly Bracket	9 ± 1 Nm
Nut - Condenser Outlet Pipe Assembly	9 ± 1 Nm

Parameters

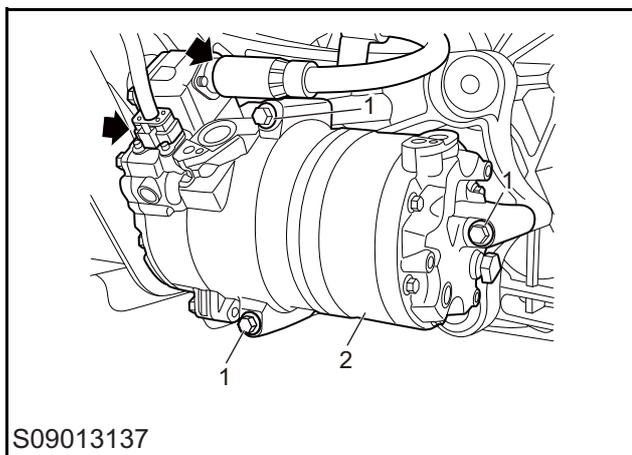
Compressor type	SHS-33H4203
Compressor displacement	33CC
Compressor voltage	
• Low voltage	12V DC
• High Voltage	400V DC
Compressor motor output power	2.4kW@5000rpm
Rotational speed of compressor	
• Minimum speed	800rpm
• Maximum speed	8500rpm
A/C lubricating oil type	SP-A2
Total lubricating oil filling level	120 ± 15 g
Refrigerant type	R1234yf
Refrigerant charge	660 ± 20 g
Evaporator temperature sensor	
• Compressor ON	4 °C
• Compressor OFF	1 °C
Pressure protection	
• High-pressure protection opening pressure	3.14Mpa
• Low-pressure protection opening pressure	0.19Mpa
PTC	5kW

Heating, Ventilation and Air Conditioning

A/C Compressor Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the service switch. Refer to "Service Switch Replacement".
- 3 Recover the refrigerant.
- 4 Disconnect the A/C compressor high-voltage and low-voltage harnesses.
- 5 Remove the A/C compressor bolt (1).
- 6 Remove the A/C compressor (2).



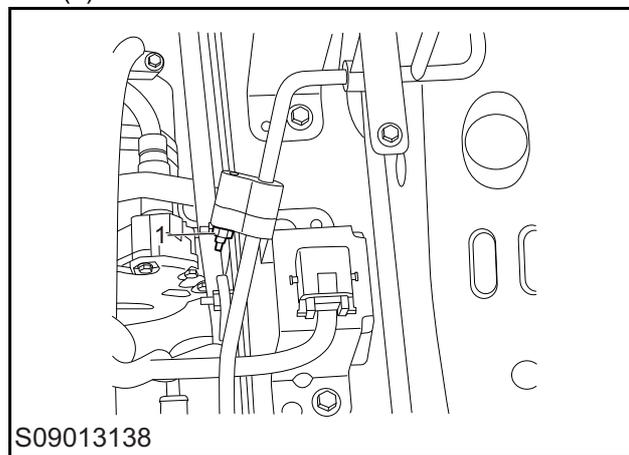
Installation

- 1 Install the A/C compressor.
- 2 Install 3 A/C compressor bolts, tighten them to 22 ± 2 Nm and check the torque.
- 3 Install the A/C compressor high-voltage and low-voltage harnesses.
- 4 Install the service switch. Refer to "Service Switch Replacement".
- 5 Refill the refrigerant.
- 6 Connect the negative battery cable.

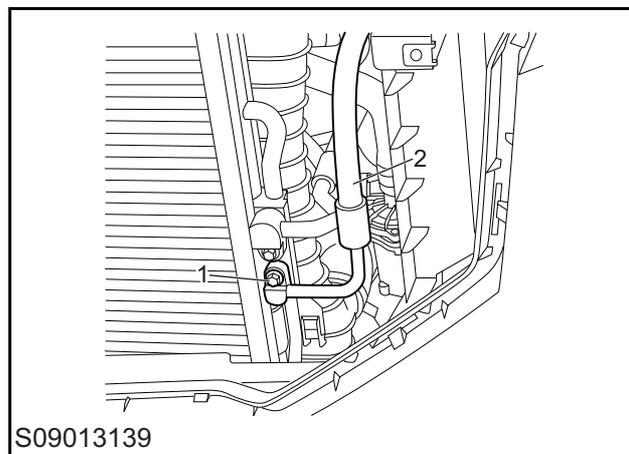
Condenser Outlet Pipe Assembly Replacement

Removal

- 1 Disconnect the negative battery cable.
- 2 Remove the service switch. Refer to "Service Switch Replacement".
- 3 Recover the refrigerant.
- 4 Remove the radiator grille assembly.
- 5 Remove the front compartment fuse box assembly bracket.
- 6 Remove the A/C pressure sensor. Refer to "A/C Pressure Sensor Replacement".
- 7 Remove the condenser outlet pipe assembly nut (1).



- 8 Remove the condenser outlet pipe assembly bolt (1).
- 9 Remove the condenser outlet pipe assembly (2).



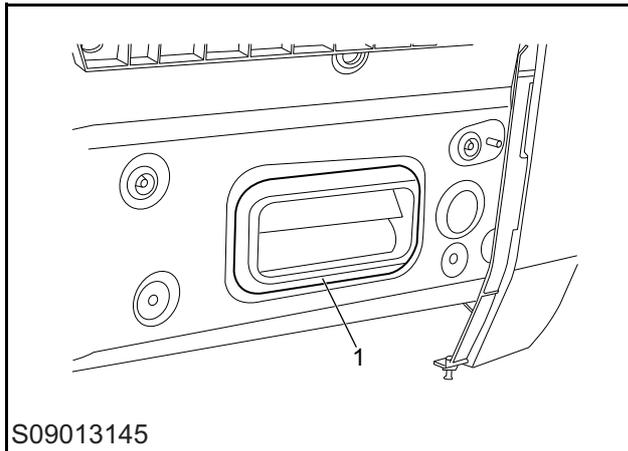
Installation

- 1 Install the condenser outlet pipe assembly.

Compartment Air Outlet Assembly Replacement (Van-type Truck)

Removal

- 1 Remove the rear bumper side panel assembly. Refer to "Rear Bumper Side Panel Assembly Replacement".
- 2 Remove the compartment air outlet assembly (1).



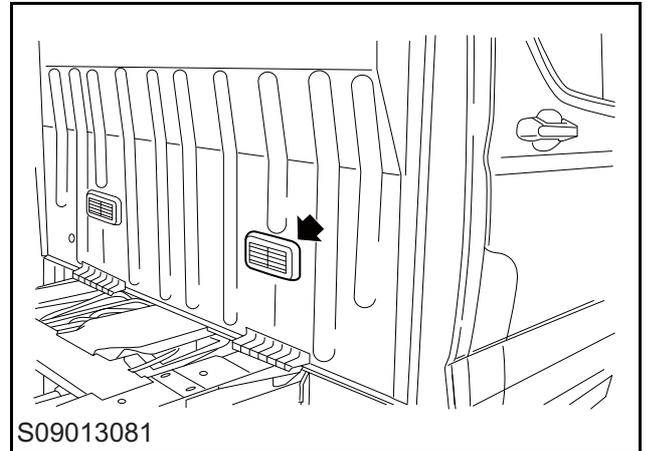
Installation

- 1 Install the rear bumper side panel assembly. Refer to "Rear Bumper Side Panel Assembly Replacement".
- 2 Install the compartment air outlet assembly.

Compartment Air Outlet Cover Plate Assembly Replacement (Chassis Truck)

Removal

- 1 Gently pry off the vehicle air outlet cover plate with plastic crowbar.



- 2 Remove the vehicle air outlet cover plate assembly from the vehicle.

Installation

- 1 Fix the vehicle air outlet assembly to the vehicle, and tighten them.