Service Diagnosis and Measurement Manual

MG4 Electric

The Service Diagnosis and Measurement Manual provides the specification, system introduction, service procedure and adjustment information of the new model MG4 Electric series.

After mastering the content of this manual and materials in the service bulletins of SAIC Motor Passenger Vehicle Co., the technicians of Authorised Repairers of SAIC Motor Passenger Vehicle Co. can provide better service for MG4 Electric vehicle owners.

For relevant information about product brands, part numbers or special tools mentioned in this manual, we recommend contacting SAIC Motor Passenger Vehicle Co.

SAIC Motor Passenger Vehicle Co.

Information is due in May, 2022.

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Cooling System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Cooling Fan Running All the Time	Related Circuits or Connectors of Cooling Fan
	Cooling Fan Assembly
Cooling Fan Not Working Well/Not Working	Related Circuits or Connectors of Cooling Fan
	Cooling Fan Assembly
Electric Drive System (EDS) Coolant Overheat	Lack of Coolant
	Cooling Fan Assembly and Related Harness
	Radiator
	Expansion Tank
	PEB Cooling Water Pump Relay
	PEB Cooling Water Pump and Related Harness
	Cooling Pipeline
	Shroud
	DC-to-DC Converter
	Power Electronic Box (PEB)
	Electric Drive Transmission
	Charger
Electric Drive System (EDS) Coolant Leak	Radiator
	Expansion Tank
	PEB Cooling Water Pump
	Cooling Pipeline
	DC-to-DC Converter
	Power Electronic Box (PEB)
	Electric Drive Transmission
	Charger

Cooling Fan Running All the Time

Test Condition	Detail/Result/Action
1. Check related circuits or connectors of the cooling fan	A. Press "START STOP" button to turn off the power system, and disconnect the negative battery cable. B. Disconnect the harness connector of the cooling fan, and connect the negative battery cable. C. Use a multimeter to measure if the voltage or resistance between the cooling fan harness connector and the ground is within the specified range. If the voltage or resistance is abnormal, repair / replace the related circuits and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Cooling Fan Not Working Well/Not Working

Test Condition	Detail/Result/Action
1. Check related circuits or connectors of the cooling fan	A. Disconnect the harness connector of the cooling fan, and connect the negative battery cable. B. Use a multimeter to measure if the voltage or resistance between the cooling fan harness connector and the ground is within the specified range. If the voltage or resistance is abnormal, repair / replace the related circuits and confirm if the symptom disappears. • Yes → Make repairs/replacements. • No → Go to Step 2.
2. Check the cooling fan assembly	Check if the cooling fan assembly works normally when it is powered normally. • No → Replace the cooling fan assembly. • Yes → Check for other possible causes.

High-voltage Battery Pack Overheated

Test Condition	Detail/Result/Action
1. Check coolant	Check for coolant loss or performance failure. Replace coolant when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check cooling fan assembly and related harness	Check if the cooling fan assembly and related harness can work normally. Repair/replace the cooling fan assembly and related harness when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check radiator	Check if the radiator is blocked or leaking. Clean the radiator or replace it when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check expansion tank	Check the expansion tank for leakage. Replace the expansion tank when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. PEB cooling water pump relay	Check the PEB cooling water pump relay for normal operation. Repair/replace the PEB cooling water pump relay when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. PEB cooling water pump and related harness	Check if the PEB cooling water pump and related harness can work normally. Repair/replace the PEB cooling water pump and related harness when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the pressure relief valve of expansion tank cap	Check if the cooling system pipeline is blocked or leaking. Make repairs / replacements when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check shroud	Check if the shroud is deformed or damaged. Replace the cooling system shroud assembly when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. DC-DC converter	Check the DC-DC converter for blockage or leakage. Make repairs/replacements when necessary After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check cooling system pipeline	Check the PEB for blockage or leakage. Make repairs/replacements when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 11.

Test Condition	Detail/Result/Action
11. Electric drive transmission	Check the electric drive transmission for blockage or leakage. Make repairs / replacements when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 12.
12. Charger	Check the charger for blockage or leakage. Make repairs / replacements when necessary. After the repair / replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

High-voltage Battery Pack Cooling System
Leakage

Test Condition	Detail/Result/Action
1. Check radiator	Check the radiator for damage; if any damage is found, repair/replace the radiator assembly. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check expansion tank	Check the expansion tank for damage; if any damage is found, replace the expansion tank. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check PEB cooling water pump	Check the PEB cooling water pump for improper sealing. Replace the PEB cooling water pump assembly when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check coolant pipeline	Check the coolant pipeline for damage. Replace the coolant pipeline when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. DC-DC converter	Check the DC-DC converter for leakage. Repair/replace the DC-DC converter when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Power electronic box (PEB)	Check for PEB damage or leakage and for gap at the pipe joint. Repair/replace the PEB when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Electric drive transmission	Check the electric drive transmission for damage or leakage. Repair/replace the electric drive transmission when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Charger	Check the charger for damage or leakage. Repair/replace the charger when necessary. • Yes → Repair/replace the charger. • No → Check for other possible causes.

Transmission/Transaxle

Electric Drive Transmission

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Fluid Leak	Axle Shaft Oil Seal
	Drain Plug Gasket
	Electric Drive Unit Housing Junction Surface
	Electric Drive Unit Cooling Water Pipe Fitting Seal Ring
Abnormal Sound in Transmission	Abnormal Sound During Acceleration or Deceleration
	Abnormal Sound While Traveling on A Bumpy Road

Fluid Leak

Test Condition	Detail/Result/Action
1. Check axle shaft oil seals	Check axle shaft oil seals for wear or damage. Make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check drain plug gasket	Check the drain plug gasket for damage. Make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the electric drive unit housing junction surface	Check the electric drive unit housing junction surface for leakage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the electric drive unit cooling water pipe fitting seal ring	Check the electric drive unit cooling water pipe fitting seal ring for leakage, and make repairs/replacements when necessary. • Yes → Repair/replace the electric drive unit cooling water pipe. • No → Check for other possible causes.

Abnormal Sound in Transmission

Test Condition	Detail/Result/Action
1. Check for abnormal sound during acceleration or deceleration	Check for abnormal sound in mounts, gear shafts and bearings during acceleration or deceleration. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Drive the vehicle on a bumpy road	Check for abnormal sound in bearings while traveling on a bumpy road. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Power Electronic Box (PEB)

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Fluid Leak	External Pipeline Leakage
	Internal Pipeline Leakage
Vehicle Cannot Be Powered On	Manual Service Disconnect
	Fuse
	PEB High-voltage Interlock Circuit
	PEB Related Circuits
	Battery
	PEB
Vehicle Emergency Power-Off	Manual Service Disconnect
	Fuse
	PEB High-voltage Interlock Circuit
	PEB Related Circuits
	PEB
PEB Cannot Be Connected to Diagnostic Device	Data Link Connector (DLC)
	Fuse
	PEB Related Circuits
	PEB

Fluid Leak

Test Condition	Detail/Result/Action
1. External pipeline leakage	Check the PEB water inlet and outlet pipes and clamps for aging or damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Internal pipeline leakage	Check the PEB for damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Vehicle Cannot Be Powered On

Test Condition	Detail/Result/Action
1. Check manual service disconnect	Check the manual service disconnect for damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check if the PEB fuse is damaged. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the PEB high-voltage Interlock circuit	Remove the MSD to disconnect the PEB high/low voltage harness connector and check the conductivity of the corresponding interlock pin. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. High-voltage insulation detection	Perform the high-voltage insulation detection as required. If abnormal: confirm if the symptom disappears after the troubleshooting. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check PEB related circuits	A. Check the high-voltage harness between the high-voltage battery pack and the PEB for aging, damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Check the PEB low-voltage harness connector for any poor contact, and check if the battery and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C.

	C. Disconnect the PEB harness connector from the EDU, check the conductivity of the corresponding pin, and check for short to ground or short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the battery	Check the battery for under voltage, damage or aging. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the PEB	Check the PEB for any damage and check if the status of the TC software is normal. If abnormal: After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Reference Information	
Circuit Diagram	High-voltage Power Distribution System

Vehicle Emergency Power-Off

Test Condition	Detail/Result/Action
1. Check manual service disconnect	Check the manual service disconnect for damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check if the PEB fuse is damaged. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the PEB high-voltage Interlock circuit	Remove the MSD to disconnect the PEB high/low voltage harness connector and check the conductivity of the corresponding interlock pin. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. High-voltage insulation detection	Perform the high-voltage insulation detection as required. If abnormal: confirm if the symptom disappears after the troubleshooting. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check PEB related circuits	A. Check the high-voltage harness between the high-voltage battery pack and the PEB for aging, damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the low voltage harness connector of PEB. Check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C.

	C. Disconnect the PEB harness connector from the EDU, check the conductivity of the corresponding pin, and check for short to ground or short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the PEB	Check the PEB for any damage and check if the status of the TC software is normal. If abnormal: After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Reference Information	
Circuit Diagram	High-voltage Power Distribution System

PEB Cannot Be Connected to Diagnostic Device

Test Condition	Detail/Result/Action
1. Check if the communication between the diagnosis device and other modules on the same CAN bus is normal.	Check if the connection between the diagnosis device and other modules on the same CAN bus is normal. If yes, go to Step 2; if not, perform the integrity inspection and service of CAN network, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check DLC	Check the DLC for damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check fuses	Check if the PEB fuse is damaged. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check PEB related circuits	A. Check the high-voltage harness between the high-voltage battery pack and the PEB for aging, damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the low voltage harness connector of PEB. Check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the PEB harness connector from the EDU, check the conductivity of the corresponding pin, and check for short to ground or short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the PEB	

	Check the PEB for any damage and check if the status of the TC software is normal. If abnormal: After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Reference Information	
Circuit Diagram	High-voltage Power Distribution System

Drive Motor

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Fluid Leak	External Pipeline Leakage
Vehicle Unable to Run	Fuse
	PEB Related Circuits
	Drive Motor Related Circuits
	PEB
	Drive Motor

Fluid Leak

Test Condition	Detail/Result/Action
1. External pipeline Leakage	Check the drive motor water inlet and outlet pipes and clamps for aging or damage. Repair/replace the drive motor water inlet and outlet pipes or clamps when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Vehicle Unable to Run

Test Condition	Detail/Result/Action
1. Check fuses	Check if the PEB fuse is damaged. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check PEB related circuits	A. Check the high-voltage harness and connectors of the high-voltage battery pack to PEB for any aging, damage, poor connection, etc. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Check the PEB low-voltage harness connector for any poor contact, and check if the battery and the ground are normal. If not: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check drive motor related circuits	A. Check the high-voltage harness and connectors of the PEB to drive motor for any aging, damage, poor connection, etc. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Check the drive motor low-voltage connector for poor contact and check the rear-end cover for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the low-voltage harness connectors of the PEB and EDU, check the conductivity of the related PIN, and check for short to ground or battery. If not: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

4. Check the PEB	Check the PEB for damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check drive motor	Check if the drive motor is damaged. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Reference Information	
Circuit Diagram	High-voltage Power Distribution System

Power and Control System

High-voltage Battery Pack and Its Charging System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Slow Charging Unavailable	Mains Grid
	Charging Extension Socket
	Charging Pile
	Charging Cable
	Slow Charging Port
	Related Circuits or Connectors of CCU
	Combined Charging Unit (CCU)
Charging Connector Cannot be Plugged In Place	Charging Connector
	Charging Port
	Fuse
	Charging Connector Unlock Relay
	Vehicle Control Unit
Charging Connector Cannot be Unplugged	Appearance
	Charging Port Emergency Cable
	Fuse
	Charging Connector Unlock Relay
	Vehicle Control Unit

Slow Charging Unavailable

Test Condition	Detail/Result/Action
1. Check mains grid	Check if charging power supply is normal. • If the mains grid power goes out, check if there is electricity in other homes, or if the main switch and branch switches in your home are tripped, or if the circuit is broken. • If the mains is normal, check for other possible causes.
2. Check charging extension socket	Check if there is electricity in the charging extension socket. • If there is no electricity in the charging extension socket, repair/replace the charging extension socket and then confirm if the charging extension socket can work normally. If yes, diagnosis is completed; if still not, check for other possible causes. • If the charging extension socket is normal, check for other possible causes.
3. Check charging pile	It may be a charging pile failure, find out if another charging pile can be used for charging. If yes, inform the person in charge about the repair of the charging pile; if not, check for other possible causes.
4. Check charging cable	It may be a break failure in the charging cable, replace with a new charging cable and check if it can be used for charging. If yes, the failure is cleared; if not, check for other possible causes.
5. Check slow charging port	Check the slow charging port high/low-voltage harness for aging, damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

6. Check related circuits or connectors of CCU	A. Check the CCU high/low-voltage harness for aging, damage or poor connection. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the low voltage harness connector of CCU. Check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Remove the MSD to disconnect the CCU high voltage harness connector, check the conductivity of the corresponding interlock pin, and check for short to ground or short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the CCU	After the CCU is flashed, check if the slow charging function works normally. If yes, diagnosis is completed; if still not, replace the VCU module.

Reference Information	
Circuit Diagram	High-voltage Power Distribution System

Charging Connector Cannot be Plugged In Place

Test Condition	Detail/Result/Action
1. Check charging connector	Check the charging connector for any signs of deformation, sticking and the charging port for any signs of blockage, damage, etc. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check charging port	Check the charging connector for any signs of deformation or sticking, charging port seal ring for any signs of failure, and the charging port for any signs of blockage, damage, etc. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check fuses	Check if the charging connector lock fuse is damaged. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check charging connector unlock relay	Check if the charging connector unlock relay is abnormal. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check VCU	After the VCU is flashed, confirm if the charging connector can be plugged in place. If yes, diagnosis is completed; if still not, replace the VCU.

Charging Connector Cannot be Unplugged

Test Condition	Detail/Result/Action
1. Check the appearance	Check the visual component for obvious blockage, damage or deformation. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check charging port emergency cable	Open the service access in the luggage compartment right side trim panel to pull the charging port emergency cable and try to unplug the charging connector again. • If yes: repair/replace the charging port. • If still not: go to Step 3.
3. Check fuses	Check if the charging connector lock fuse is damaged. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check charging connector unlock relay	Check if the charging connector unlock relay is abnormal. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check VCU	After the VCU is flashed, confirm if the charging connector can be plugged and unplugged normally. If yes, diagnosis is completed; if still not, replace the VCU.

Reference Information	
Circuit Diagram	Vehicle Security - Charging Connector Lock System

Heating, Ventilation and Air Conditioning

Leakage Detection

Test Condition	Detail/Result/Action
1. Visually check for leakage	Refrigerant leakage is generally accompanied by leakage of compressor oil. Visually check for leakage. • All fittings or joints that use seal washers or O-rings. • A/C refrigerant pipeline. • A/C compressor. • A/C condenser. • A/C hoses and pressure switch. • A/C condensed water drain pipe. • Service access (refrigerant high-/low-pressure filling ports).
2. Vacuum leak detection	The refrigerant is evacuated by the refrigerant filling/evacuating equipment, and then maintain the pressure under vacuum for a period of time. Check whether the pressure can be maintained, in order to determine whether there is a leak. However, the leakage location cannot be determined.
3. Foam leak detection	After injecting nitrogen into the system, apply soapy water to the following possible leakage locations to see if there is any bubble formed: • All fittings or joints that use seal washers or O-rings. • A/C refrigerant pipeline. • A/C condenser. • A/C hoses and pressure switch. • A/C condensed water drain pipe. • Service access (refrigerant high-/low-pressure filling ports).
4. Fluorescent dye leak detection	Note: Only use the fluorescent dyes approved by SAIC Motor. Note: Not all fluorescent dyes are compatible with the compressor oil. Some types of dye decrease the oil viscosity or may chemically react with the oil. • Add the fluorescent dye to the A/C system through the high-/low-pressure pipeline service access. Be sure to wipe clean the service access of the fluorescent agent, so as to avoid wrong diagnosis. • Do NOT overcharge the A/C system with dye, so as not to affect the cooling effect. • Leak detection dye requires time to work depending on the different leakage speed.
5. Electronic detector leak	

Test Condition	Detail/Result/Action
detection	Place the electronic detector leak detection probe near possible leakage location, and move back and forth. When the leak detector sends out an alarm, it indicates that there is a leak. • All fittings or joints that use seal washers or O-rings. • A/C refrigerant pipeline. • A/C compressor. • A/C condenser. • A/C hoses and pressure switch. • A/C condensed water drain pipe. • Service access (refrigerant high-/low-pressure filling ports).

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
A/C Cooling Capacity Insufficient	Refrigerant
	Blower Speed Control Module
	Blower
	Temperature Actuator and Damper
	A/C Filter
	Compressor
	Condenser
	A/C Pipeline
	Expansion Valve
	Evaporator
A/C Heating Capacity Insufficient	Check the coolant
	Blower Speed Control Module
	Blower
	Temperature Actuator and Damper
	A/C Filter
	Heater Water Pipe
	Heater Core
Compressor Inoperative	Check Appearance and Functionality
	Fuse
	Relay
	Related Circuits or Connectors of Compressor
	Compressor
	ECM
Compressor Cannot Automatically Stop	Check Appearance and Functionality
	A/C Pressure Sensor
	Related Circuits or Connectors of A/C Pressure Sensor
	Related Circuits or Connectors of Compressor
	Compressor
	Compressor Engine Control Module

Symptom	Possible Faulty Parts
Compressor Clutch Intermittent Engagement	Check Appearance and Functionality
	Relay
	A/C Pressure Sensor
	Related Circuits or Connectors of A/C Pressure Sensor
	Related Circuits or Connectors of ECM
	Related Circuits or Connectors of Compressor Clutch
	Compressor Clutch
	ECM
Abnormal Refrigerant Pressure	Refrigerant
	A/C Pipeline
	Condenser
	Expansion Valve
	A/C Pressure Sensor
	Related Circuits or Connectors of A/C Pressure Sensor
	Compressor
	ECM
A/C Condensed Water Leakage	Drain Pipe
	A/C Box Housing
Air Output Insufficient	Related Circuits or Connectors of Blower Speed Control Module
	Related Circuits or Connectors of Blower
	Blower Speed Control Module
	Blower
	Temperature Damper Actuator and Damper
	A/C Filter
	Air Inlet Grille
	Air Outlet
Blower Inoperative	Fuse
	Appearance and Functionality
	Blower Speed Control Module
	Related Circuits or Connectors of Blower Speed Control Module
	Related Circuits or Connectors of Blower
	Related Circuits or Connectors of HVAC
	Blower
	Heating, Ventilation and Air Conditioning Module
Noise	Appearance and Functionality
	Compressor
	Blower
	Cooling Fan

Symptom	Possible Faulty Parts
Air Conditioning System Peculiar Smell	A/C Filter
	A/C Inlet Grille
	Fresh/Recirculated Air Damper and Actuator
	A/C Pipeline

A/C Cooling Capacity Insufficient

Test Condition	Detail/Result/Action
1. Check the refrigerant	Check if the refrigerant is excessive or insufficient, and make refills/repairs when necessary. After the refill/repair, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check blower speed control module	Check the blower speed control module for damage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check blower	Check the blower for damage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check temperature actuator and damper	Check the temperature actuator and damper for damage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check A/C filter	Check if the A/C filter is blocked or too dirty, and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check the compressor	Check the compressor for damage, and replace the compressor assembly when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the condenser	Check the condenser for blockage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check A/C pipeline	Check the A/C pipeline for leakage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check the expansion valve	Check the expansion valve for blockage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check evaporator	Check the evaporator for blockage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

A/C Heating Capacity Insufficient

Test Condition	Detail/Result/Action
1. Check coolant	Check the coolant for leakage, and make refills/repairs when necessary. After the repair, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check blower speed control module	Check the blower speed control module for damage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check blower	Check the blower for damage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check temperature actuator and damper	Check the temperature actuator and damper for damage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check A/C filter	Check the A/C filter for filthy blockage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check heater water pipe	Check if the heater water pipe is blocked or too dirty, and make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the heater core	Check if the heating core is blocked or too dirty, and make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Compressor Inoperative

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of compressor work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the related fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the relay	Check the compressor relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of compressor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of compressor, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the HVAC harness connector from the compressor, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the compressor	Remove the original compressor from the vehicle, fit a new good one and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the ECM	After the ECM is refreshed, confirm if the cooling fan can work normally. If yes, diagnosis is completed; if not, replace the ECM.

Reference Information	
Circuit Diagram	A/C-3 - Compressor Control

Compressor Cannot Automatically Stop

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of compressor work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check A/C pressure sensor	Remove the original A/C pressure sensor from the vehicle, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of A/C pressure sensor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of A/C pressure sensor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the A/C pressure sensor harness connector from the ECM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

Test Condition	Detail/Result/Action
4. Check related circuits or connectors of compressor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the HVAC harness connector from the compressor, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the compressor	Remove the original compressor from the vehicle, fit a new good one and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the ECM	After the ECM is refreshed, confirm if the cooling fan can work normally. If yes, diagnosis is completed; if not, replace the ECM.

Reference Information	
Circuit Diagram	A/C-3 - Compressor Control
	Engine Management System - 2

Compressor Clutch Intermittent Engagement

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of compressor work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the relay	Check the compressor clutch relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check A/C pressure sensor	Remove the original A/C pressure sensor from the vehicle, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of A/C pressure sensor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the A/C pressure sensor harness connector from the ECM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of A/C pressure sensor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check related circuits or connectors of the ECM	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the front compartment fuse box harness connector from the ECM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check related harnesses or connectors of compressor clutch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the compressor clutch harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the compressor clutch	Remove the original compressor clutch from the vehicle, fit a new good one (replace the higher-level assembly) and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check the ECM	After the ECM is refreshed, confirm if the cooling fan can work normally. If yes, diagnosis is completed; if not, replace the ECM.

Reference Information	
Circuit Diagram	A/C-3 - Compressor Control
	Engine Management System

Abnormal Refrigerant Pressure

Test Condition	Detail/Result/Action
1. Check the refrigerant	Check for excess or lack of refrigerant, and make repairs when necessary. After the repair, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check A/C pipeline	Check the A/C pipeline for damage/blockage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the condenser	Check the condenser for blockage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the expansion valve	Check the expansion valve for blockage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check A/C pressure sensor	Remove the original A/C pressure sensor from the vehicle, fit a new good one and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check related circuits or connectors of A/C pressure sensor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the A/C pressure sensor harness connector from the ECM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace

Test Condition	Detail/Result/Action
	the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of A/C pressure sensor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the compressor	Remove the original compressor from the vehicle, fit a new good one and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check the ECM	After the ECM is refreshed, confirm if the cooling fan can work normally. If yes, diagnosis is completed; if not, replace the ECM.

Reference Information	
Circuit Diagram	Engine Management System

A/C Condenser Leakage

Test Condition	Detail/Result/Action
1. Check drain pipe	Check if the drain pipe is disconnected, damaged or blocked, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check A/C box housing	Check the A/C box housing for damage. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Air Output Insufficient

Test Condition	Detail/Result/Action
1. Check related circuits or connectors of blower speed control module	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. No → Go to Step B. B. Disconnect the harness connector of blower speed control module and check if the ground is normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. No → Go to Step C. C. Disconnect the A/C control module harness connector from the blower speed control module, check the conductivity of the corresponding pin of signal line, and check for short to ground or short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. No → Go to Step 2.
2. Check related circuits or connectors of blower	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. No → Go to Step B. B. Disconnect the A/C control module harness connector from the blower, check the conductivity of the corresponding pin of signal line, and check for short to ground or short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. No → Go to Step C. C. Disconnect the blower speed control module harness connector from the blower, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after

Test Condition	Detail/Result/Action
	the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. No → Go to Step 3.
3. Check blower speed control module	Check the blower speed control module for damage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check blower	Check the blower for damage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check A/C filter	Check the A/C filter for filthy blockage and replace it when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check temperature damper actuator and damper	Check the temperature damper actuator and damper for damage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check air inlet grille	Check the air inlet grille for blockage, and make repairs/replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check air outlet	Check the air outlet for blockage or damage. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Reference Information	
Circuit Diagram	A/C-1 - Blower Control

Blower Inoperative

Test Condition	Detail/Result/Action
1. Check fuses	Check the related fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the appearance and functionality	Check if the related functions of blower work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check blower speed control module	Remove the blower speed control module from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of blower speed control module	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the blower speed control module harness connector from the blower, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of blower speed control module and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check related circuits or connectors of blower	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the blower speed control module harness connector and check if the battery and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check blower	Remove the original blower from the vehicle, fit a new good one and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check related circuits or connectors of the HVAC	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect HVAC harness connector from the fuse box, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the blower speed control module harness connector from the HVAC, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check the heating, ventilation and air conditioning module	After the HVCM is refreshed, confirm if the blower can work normally. If yes, diagnosis is completed; if not, replace the HVCM.

Reference Information	
Circuit Diagram	A/C-1 - Blower Control

Noise

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Visually check if the A/C system and its related system are loosely fitted, damaged or interfere with each other, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the compressor	Start the powertrain, turn on the air conditioner, and determine the working zone that has the most obvious sound. Set the noise monitor at the A/C compressor. Change the status of switch in the air conditioner to determine if the sound is from the A/C compressor, and repair/replace the compressor when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check blower	Check if there is abnormal sound in the blower motor and foreign materials in the blower. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check cooling fan	Check if there are foreign materials in the cooling fan and abnormal sound in the motor, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Air Conditioning System Peculiar Smell

Test Condition	Detail/Result/Action
1. Check A/C filter	Check if the A/C filter is dirty or musty, and rinse/replace them when necessary. After the rinse/replacement, confirm if the peculiar smell disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check A/C inlet grille	Check if the A/C inlet grille is dirty or musty, and rinse/replace them when necessary. After the rinse/replacement, confirm if the peculiar smell disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check fresh/recirculated air damper and actuator	Check the fresh/recirculated air damper and actuator for damage, and make repairs/replacements when necessary. After the repair/replacement, confirm if the peculiar smell disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check A/C pipeline	Check if the A/C pipeline is dirty or musty, and rinse/replace them when necessary. After the rinse/replacement, confirm if the peculiar smell disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Steering System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Shaking When Braking	Steering Gear Outer Tie Rod
	Steering Gear Inner Tie Rod
	Steering Intermediate Shaft
	Steering Gear Subassembly
Steering Wheel off Centre Position	Steering Gear Outer Tie Rod
	Steering Gear Inner Tie Rod
	Steering Gear Subassembly
Vehicle Off-track	Steering Gear Outer Tie Rod
	Steering Gear Inner Tie Rod
	Steering Gear Subassembly
Steering Wheel Vibration During Steering	Steering Gear Outer Tie Rod
	Steering Gear Inner Tie Rod
	Steering Intermediate Shaft
	Steering Gear Subassembly
Poor Steering Wheel Return-to-Centre	Steering Gear Retaining Bolt
	Steering Intermediate Shaft
	Steering Gear Subassembly
Hard Steering	Steering Intermediate Shaft
	Steering Gear Subassembly
	Upper Steering Column Assembly
Steering Noise	Steering Gear Retaining Bolt
	Steering Gear Subassembly
	Upper Steering Column Assembly Retaining Bolt
	Upper Steering Column Assembly

Shaking When Braking

Test Condition	Detail/Result/Action
1. Check steering gear outer tie rod	Check whether the steering gear outer tie rod is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check steering gear inner tie rod	Check whether the steering gear inner tie rod is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check steering intermediate shaft	Check whether the steering intermediate shaft is worn or loose, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the steering gear subassembly	Check whether the steering gear subassembly is worn. • Yes → Make repairs/replacements. • No → Go to: Brake System - Shaking When Braking. ☞

Direction Deviation from Centre

Test Condition	Detail/Result/Action
1. Check steering gear outer tie rod	Check whether the steering gear outer tie rod is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check steering gear inner tie rod	Check whether the steering gear inner tie rod is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the steering gear subassembly	Check whether the steering gear subassembly is worn. After the repair/replacement, confirm if the symptom disappears. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Vehicle Off-track

Test Condition	Detail/Result/Action
1. Check steering gear outer tie rod	Check whether the steering gear outer tie rod is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check steering gear inner tie rod	Check whether the steering gear inner tie rod is worn or deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the steering gear subassembly	Check whether the steering gear subassembly is worn. • Yes → Make repairs/replacements. • No → Go to: Suspension System - Vehicle Off-track. ☞

Steering Wheel Vibration During Steering

Test Condition	Detail/Result/Action
1. Check steering gear outer tie rod	Check whether the steering gear outer tie rod is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check steering gear inner tie rod	Check whether the steering gear inner tie rod is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check steering intermediate shaft	Check whether the steering intermediate shaft is worn or loose, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the steering gear subassembly	Check whether the steering gear subassembly is worn. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Poor Steering Wheel Return-to-Centre

Test Condition	Detail/Result/Action
1. Check steering gear retaining bolts	Check steering gear retaining bolts for looseness, and repair them when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check steering intermediate shaft	Check whether the steering intermediate shaft is worn or loose, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the steering gear subassembly	Check whether the steering gear subassembly is worn. • Yes → Make repairs/replacements. • No → Go to: Suspension System - Poor Steering Wheel Return-to-Centre. ☞

Noises from Steering Gear

Test Condition	Detail/Result/Action
1. Check steering gear retaining bolts	Check steering gear retaining bolts for looseness, and repair them when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the steering gear subassembly	Check whether the steering gear subassembly is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check upper steering column retaining bolts	Check upper steering column retaining bolts for looseness, and repair them when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check upper steering column assembly	Check whether the upper steering column assembly is poorly lubricated or worn. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Noises from Steering Column

Test Condition	Detail/Result/Action
1. Check steering gear retaining bolts	Check steering gear retaining bolts for looseness, and repair them when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the steering gear subassembly	Check whether the steering gear subassembly is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check upper steering column retaining bolts	Check upper steering column retaining bolts for looseness, and repair them when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check upper steering column assembly	Check whether the upper steering column assembly is poorly lubricated or worn. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Hard Steering

Test Condition	Detail/Result/Action
1. Check steering intermediate shaft	Check whether the steering intermediate shaft is seized, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the steering gear subassembly	Check whether the steering gear subassembly is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check upper steering column assembly	Check if the upper steering column assembly is stuck • Yes → Make repairs/replacements. • No → Go to: Suspension System - Hard to Steer

Suspension System

Front Suspension

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Vehicle Off-track	Tyre
	Front Lower Swing Arm Assembly
	Front Lower Swing Arm Rear Bushing
	Front Lower Swing Arm Ball Head Assembly
	Front Suspension Spring
	Front Shock Absorber Assembly
	Front Steering Knuckle
	Front Wheel Hub Bearing Assembly
	Front Subframe Assembly
	Wheel Alignment
Abnormal Driving Track (The vehicle can not keep straight)	Front Lower Swing Arm Ball Head Assembly
	Front Wheel Hub Bearing Assembly
	Front Subframe Assembly
	Wheel Alignment
Abnormal Wear in Tyres	Tyre
	Wheel Dynamic Balance
	Front Lower Swing Arm Ball Head Assembly
	Front Lower Swing Arm Assembly
	Front Shock Absorber Assembly
	Front Steering Knuckle Assembly
	Front Subframe Assembly
	Wheel Alignment
Hard Steering	Tyre
	Bearing at the Top of Front Shock Absorber
	Wheel Alignment
Poor Steering Wheel Return-to-Centre	Tyre
	Front Lower Swing Arm Ball Head Assembly
	Front Lower Swing Arm Rear Bushing
	Bearing at the Top of Front Shock Absorber
	Front Steering Knuckle Assembly
	Wheel Alignment

Vehicle Off-track

Test Condition	Detail/Result/Action
1. Check wheels and tyres	Check wheels and tyres and perform wheel rotation, make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the front lower swing arm assembly	Check the front lower swing arm assembly for deformation, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front lower swing arm rear bushing	Check if the front lower swing arm rear bushing is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4 Check the front lower swing arm ball head connector assembly	Check if the front lower swing arm ball head connector assembly is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check Front Suspension Spring	Check whether the front suspension spring has abnormal elasticity, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check the front shock absorber assembly	Check whether the front shock absorber assembly leaks oil or is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check front steering knuckle	Check whether the front steering knuckle is misaligned, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check the front wheel hub bearing assembly	Check if the front wheel hub bearing assembly is stuck or deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.

Abnormal Driving Track (The vehicle can not keep straight)

Test Condition	Detail/Result/Action
1. Check the front lower swing arm ball head assembly	Check if the front lower swing arm ball head assembly is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the front wheel hub bearing assembly	Check if the front wheel hub bearing assembly is loosened, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front subframe assembly	Check if the front subframe assembly is misaligned. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Check for other possible causes.

Abnormal Wear in Tyres

Test Condition	Detail/Result/Action
1. Check the tyres	Check whether the tyre pressure is within the specified range, and make adjustment when necessary. After the adjustment, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the dynamic balance of wheels	Check if the dynamic balance of wheels is within reasonable range, and make adjustments/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front lower swing arm ball head assembly	Check if the front lower swing arm ball head assembly is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the front lower swing arm assembly	Check the front lower swing arm assembly for deformation, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the front shock absorber assembly	Check whether the front shock absorber assembly is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check front steering knuckle assembly	Check whether the front steering knuckle assembly is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the front subframe assembly	Check if the front subframe assembly is misaligned or deformed. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Check for other possible causes.

Hard Steering

Test Condition	Detail/Result/Action
1. Check tyre pressure	Check whether the tyre pressure is within the specified range, and make adjustment when necessary. After the adjustment, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the bearing at the top of the front shock absorber.	Check whether bearing at the top of the front shock absorber is stuck, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Go to: Steering System - Hard to Steer

Poor Steering Wheel Return-to-Centre

Test Condition	Detail/Result/Action
1. Check the tyres	Check whether the tyre pressure is too low, and make adjustment when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the front lower swing arm ball head assembly	Check if the front lower swing arm ball head assembly is worn or loosened, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front lower swing arm rear bushing	Check if the front lower swing arm rear bushing is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the bearing at the top of the front shock absorber.	Check whether bearing at the top of the front shock absorber is stuck, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check front steering knuckle assembly	Check whether the front steering knuckle assembly is deformed, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Diagnosis is completed.

Vehicle Swings During Driving

Test Condition	Detail/Result/Action
1. Check the front lower swing arm rear bushing	Check if the front lower swing arm rear bushing is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the front lower swing arm ball head assembly	Check if the front lower swing arm ball head assembly is worn or loosened, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front wheel hub bearing assembly	Check if the front wheel hub bearing assembly is loose or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Check for other possible causes.

Vehicle Jitters During Driving

Test Condition	Detail/Result/Action
1. Check the tyres	Check whether the tyre tread is smooth, and with no foreign body, make adjustments/replacements when necessary. After the adjustment/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the dynamic balance of wheels	Check if the dynamic balance of wheels is within allowable range, and make adjustments/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check Front Suspension Spring	Check whether the front suspension spring has abnormal elasticity, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the front shock absorber	Check the front shock absorber for oil leakage or damage. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Acceleration Deviation

Test Condition	Detail/Result/Action
1. Check the tyres	Check whether the tyre pressures are balanced, and make adjustment when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Check for other possible causes.

Abnormal Noises During Driving

Test Condition	Detail/Result/Action
1.Check front anti-roll bar bushing	Check whether the front anti-roll bar bushing is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2 Check front anti-roll bar link	Check whether the front anti-roll bar link is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front lower control arm ball head assembly	Check if the front lower control arm ball head assembly is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check front suspension control arm rear bushing	Check whether the front suspension control arm rear bushing is worn, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the front wheel hub assembly	Check whether the hub assembly is loose or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check the front shock absorber	Check whether the front shock absorber is worn or damaged, and make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the front subframe assembly	Check whether the front subframe assembly is loose or damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Rear Suspension

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Vehicle Off-track	Tyre
	Rear Upper Swing Arm Bushing
	Rear Upper Swing Arm Assembly
	Rear Lower Swing Arm Bushing
	Rear Lower Swing Arm Assembly
	Rear Suspension Trailing Arm Bushing
	Rear Suspension Trailing Arm Assembly
	Rear Suspension Spring
	Rear Shock Absorber Assembly
	Rear Wheel Bracket Assembly
	Rear Wheel Hub Assembly
	Rear Subframe
	Wheel Alignment
Abnormal Sound	Rear Upper Swing Arm Bushing
	Rear Lower Swing Arm Bushing
	Rear Shock Absorber Assembly
	Rear Wheel Hub Assembly
	Rear Anti-roll Bar Link
	Rear Anti-roll Bar Rubber Bushing
	Lateral Push Rod Bushing
	Trailing Arm Bushing
	Rear Subframe Assembly
Body Shaking	Tyre
	Rear Shock Absorber Assembly
	Rear Suspension Spring Assembly
	Rear Wheel Hub Assembly
Body Tilted	Tyre
	Rear Lower Arm Assembly
	Rear Shock Absorber Assembly
	Rear Suspension Spring

Vehicle Off-track

Test Condition	Detail/Result/Action
1. Check wheels and tyres	Check wheels and tyres and perform wheel rotation, make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check rear upper swing arm bushing	Check if the rear upper swing arm bushing is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check rear upper swing arm assembly	Check the rear upper swing arm assembly for deformation. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check rear lower swing arm bushing	Check if the rear lower swing arm bushing is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check rear lower swing arm assembly	Check the rear lower swing arm assembly for deformation. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check trailing arm bushing	Check if the trailing arm bushing is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check trailing arm assembly	Check the trailing arm assembly for deformation. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check rear suspension spring	Check if the rear suspension spring has abnormal elasticity. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check rear shock absorber assembly	Check the rear shock absorber assembly for oil leak or deformation. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check rear wheel bracket assembly	Check if the rear wheel bracket assembly is deformed or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 11.

Test Condition	Detail/Result/Action
11. Check rear hub assembly	Check if the rear hub assembly is stuck or deformed. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 12.
12. Check rear subframe	Check if the rear subframe is misaligned or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 13.
13. Check wheel alignment	Check if the wheel alignment data is abnormal. • Yes → Make adjustment/replacements. • No → Go to "Steering System - Vehicle Off-track".

Abnormal Sound

Test Condition	Detail/Result/Action
1. Check rear upper swing arm bushing	Check whether the rear upper swing arm bushing is worn. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check rear lower swing arm bushing	Check whether the rear lower swing arm bushing is worn. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check rear shock absorber assembly	Check whether the rear shock absorber assembly leaks oil. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check rear hub assembly	Check whether the rear hub assembly is loose. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the rear anti-roll bar link	Check whether the rear anti-roll bar link is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6 Check the rear anti-roll bar rubber bushing	Check whether the rear anti-roll bar rubber bushing is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the lateral push rod bushing	Check whether the lateral push rod bushing is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check trailing arm bushing	Check if the trailing arm bushing is worn or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check the rear subframe assembly	Check whether the rear subframe assembly is loose or damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Body Shaking

Test Condition	Detail/Result/Action
1. Check the tyres	Check whether the tyres are evenly worn. Make replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check rear shock absorber assembly	Check whether the rear shock absorber assembly leaks oil. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the rear suspension spring assembly	Check whether the rear suspension spring assembly is aged or damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check rear hub assembly	Check whether the rear hub assembly is loose. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Body Tilted

Test Condition	Detail/Result/Action
1. Check the tyre pressure	Check whether the tyre pressures are balanced. Make adjustment when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2 Check the rear lower arm assembly	Check the rear lower arm assembly for deformation. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check rear shock absorber assembly	Check whether the rear shock absorber assembly leaks oil. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check rear suspension spring	Check whether the rear suspension spring assembly is soft. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Brake System

Service brake

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Vehicle Off-track	Brake Pad
	Brake Disc
	Brake Caliper
	Brake Line
	Brake Master Cylinder
Brake Judder	Brake Pad
	Brake Disc
	Brake Caliper
Brake Pedal Sinks Rapidly	Brake Pipeline Leakage
	Brake Caliper
	Brake Master Cylinder
Brake Pedal Low or Soft	Brake Pad
	Brake Disc
	Brake Pedal
	Brake Fluid
	Brake Caliper
	Air in Brake System
Brake Locked and ABS Starts to Work When Brake is Slightly Depressed	Brake Pad
	Brake Caliper
	Brake Master Cylinder
Excessive Brake Pedal Travel	Brake Disc
	Brake Pad
	Air in Brake System
Step On the Pedal and Hold, the Pedal Sinks Slowly	Brake Pipeline Leakage
	Brake Master Cylinder
	Air in Brake System
Brake Drag	Brake Pedal
	Brake Line
	Brake Disc
	Brake Caliper
	Brake Master Cylinder
	Brake Booster
Poor Effect of Brake Boost	Brake Booster

Symptom	Possible Faulty Parts
Abnormal Sound in Brake System	Brake Pedal
	Brake Pad
	Brake Caliper
	Brake Disc
	Brake Master Cylinder
	Brake Booster

Braking Deviation

Test Condition	Detail/Result/Action
1. Check the brake pad	Check the brake pad for dirt or oil stain. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake disc	Check if the brake disc is abnormally worn: • Whether the thickness of front brake disc is less than the service limit value. • Whether the thickness of rear brake disc is less than the service limit value. • Whether the brake disc runout is greater than maximum runout. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake caliper	Check if the brake caliper is stuck or deformed. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the brake pipeline	Check if the brake pipeline is blocked or leaks. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the brake master cylinder	Check if the brake master cylinder is stuck or leaks. • Yes → Make replacements. • No → Check for other possible causes.

Brake Judder

Test Condition	Detail/Result/Action
1. Check the brake pad	Check the brake pad for dirt or oil stain. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake disc	Check if the brake disc is abnormally worn: • Whether the thickness of front brake disc is less than the service limit value. • Whether the thickness of rear brake disc is less than the service limit value. • Whether the brake disc runout is greater than maximum runout. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake caliper	Check if the brake caliper is damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Brake Pedal Sinks Rapidly

Test Condition	Detail/Result/Action
1. Brake Pipeline Leakage	Check the brake pipeline for leakage. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake caliper	Check the brake caliper for leakage. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake master cylinder	Check if the brake master cylinder is damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Brake Pedal Low or Soft

Test Condition	Detail/Result/Action
1. Check the brake pad	Check if the thickness of brake pad is within the standard value range. Make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake disc	Check if the brake disc is abnormally worn: • Whether the thickness of front brake disc is less than the service limit value. • Whether the thickness of rear brake disc is less than the service limit value. • Whether the brake disc runout is greater than maximum runout. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake pedal	Check if the brake pedal is deformed. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the brake fluid	Check if the brake fluid deteriorates. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the brake caliper	Check if the brake caliper is deformed or stuck. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check for air existence in the brake system	Check if air exists in the brake system. • Yes → Bleed air / repair/replace the brake fluid. • No → Check for other possible causes.

Brake Locked and ABS Starts to Work When Brake is Slightly Depressed

Test Condition	Detail/Result/Action
1. Check the brake pad	Check if the brake pad is correctly fitted. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake caliper	Check if the brake caliper is stuck. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake master cylinder	Check if the brake master cylinder is damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Excessive Brake Pedal Travel

Test Condition	Detail/Result/Action
1. Check the brake disc	Check if the brake disc is abnormally worn: • Whether the thickness of front brake disc is less than the service limit value. • Whether the thickness of rear brake disc is less than the service limit value. • Whether the brake disc runout is greater than maximum runout. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
2. Check the brake pad	Check if the thickness of brake pad is within the standard value range. Make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check for air existence in the brake system	Check if air exists in the brake system. • Yes → Bleed air / repair/replace the brake fluid. • No → Check for other possible causes.

Step On the Pedal and Hold, the Pedal Sinks Slowly

Test Condition	Detail/Result/Action
1. Check for brake pipeline leakage	Check the brake pipeline for leakage. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake master cylinder	Check the brake master cylinder for leakage. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check for air existence in the brake system	Check if air exists in the brake system. • Yes → Bleed air / repair/replace the brake fluid. • No → Check for other possible causes.

Brake Drag

Test Condition	Detail/Result/Action
1. Check the brake pedal	Check if the brake pedal and spring are deformed or aged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake pipeline	Check if the brake pipeline is blocked in one direction. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake disc	Check if the brake disc is abnormally worn: • Whether the thickness of front brake disc is less than the service limit value. • Whether the thickness of rear brake disc is less than the service limit value. • Whether the brake disc runout is greater than maximum runout. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the brake caliper	Check if the brake caliper is deformed or stuck. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the brake master cylinder	Check if the brake master cylinder is stuck. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check brake booster	Check if the brake booster is damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Poor Effect of Brake Boost

Test Condition	Detail/Result/Action
1. Check brake booster	Check if the brake booster is damaged. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Abnormal Sound in Brake System

Test Condition	Detail/Result/Action
1. Check the brake pedal	Check if the brake pedal is deformed or stuck. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake pad	After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake caliper	Check if the brake caliper is deformed or stuck. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the brake disc	Check if the brake disc is abnormally worn: • Whether the thickness of front brake disc is less than the service limit value. • Whether the thickness of rear brake disc is less than the service limit value. • Whether the brake disc runout is greater than maximum runout. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the brake master cylinder	Check if the brake master cylinder is damaged. Make repairs/replacements when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check brake booster	Check if the brake booster is damaged.

Test Condition	Detail/Result/Action
	• Yes → Make repairs/replacements. • No → Check for other possible causes.

Parking Brake

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Poor Effect of Parking Brake	Rear Brake Pad
	Parking Motor
	Parking Brake Switch

Poor Effect of Parking Brake

Test Condition	Detail/Result/Action
1. Check rear brake pad	Check if the thickness of brake pad is within the standard value range. Make replacements when necessary. After the replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check parking motor	Check if the parking motor is damaged, corroded or loose. Repair/replace it when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check parking brake switch	Check if the parking brake switch is stuck or damaged. Make repairs/replacements when necessary. • Yes → Make repairs/replacements. • No → Check for other possible causes.

Interior Fittings

Seats

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Front Seat Manual Adjustment Failure	Appearance and Functionality
	Manual Seat Adjusting Handle Assembly
Front Seat Power Adjustment Failure	Appearance and Functionality
	Fuse
	Power Seat Adjustment Switch Assembly
	Related Circuits or Connectors of Power Seat Adjustment Switch
	Related Circuits or Connectors of Power Seat Adjustment Motor
	Seat Adjustment Motor
Front Seat Heating Failure	Appearance and Functionality
	Fuse
	Relay
	Related Circuits or Connectors of HVAC
	Related Circuits or Connectors of Seat Cushion Heating Element
	Seat Cushion Heating Element

Front Seat Manual Adjustment Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of manual seat work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the manual seat adjusting handle assembly	Remove the original manual seat adjusting handle from the vehicle, fit a new good one and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Front Seat Power Adjustment Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of power seat work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check if the power seat fuse is damaged. If yes: replace the power seat fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check power seat adjustment switch assembly	Remove the original power seat adjustment switch from the vehicle, fit a new good one and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of power seat adjustment switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of power seat adjustment switch and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector on both ends of the fuse box from the power seat adjustment switch, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check related circuits or connectors of power seat adjustment motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of power seat adjustment motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check seat adjustment motor	If above causes are excluded, it indicates that the seat adjustment motor has failed, please replace the upper level assembly of the seat adjustment motor. After the replacement, confirm that the system works normally.

Reference Information	
Circuit Diagram	Driver Seat Adjust Switch

Front Seat Heating Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of seat heater work normally and check the exterior components for obvious damage, etc. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the seat heater fuse for damage. If yes: replace the seat heater fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check relay	Check the seat heater relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the HVAC	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the fuse box harness connector from the HVAC, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check related circuits or connectors of seat cushion heating element	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of seat cushion heating element and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the seat cushion heating element	After the above causes are excluded, it indicates that the seat cushion heating element has failed, please replace the upper level assembly of seat cushion heating element, and confirm that the system works normally.

Reference Information	
Circuit Diagram	Front Left Seat Heating & Steering Wheel Heating

Exterior Fittings

Wiper and Washer

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Front Wiper Inoperative	Appearance and Functionality
	Fuse
	Bonnet Touch Switch
	Fuse
	Relay
	Wiper/Washer Stalk Switch
	Related Circuits or Connectors of Wiper/Washer Stalk Switch
	Related Circuits or Connectors of Front Wiper Motor
	Front Wiper Motor Assembly
	Body Control Module
Front Wiper Fails to Wipe Clean	Windscreen Wiper Blade
	Windscreen Wiper Arm
	Windscreen Wiper Linkage Mechanism Refit
Front Wiper Fails to Stop	Appearance and Functionality
	Relay
	Wiper/Washer Stalk Switch
	Related Circuits or Connectors of Front Wiper Motor
	Body Control Module
Abnormal Noise/Shake During Front Wiper Operation	Windscreen Wiper Arm
	Windscreen Wiper Arm Refit
	Windscreen Wiper Linkage Mechanism
	Windscreen Wiper Linkage Mechanism Refit
	Front Wiper Motor
Front Wiper Fails to Return to Original Position	Windscreen Wiper Arm
	Windscreen Wiper Arm Refit
	Windscreen Wiper Linkage Mechanism
	Windscreen Wiper Linkage Mechanism Refit
	Related Circuits or Connectors of Front Wiper Motor
Front Washer Sprays Insufficiently	Windscreen Washer Nozzle
	Windshield Washer Nozzle Hose
	Windshield Washer Reservoir Hose
	Windscreen Washer Pump

Front Washer Inoperative	Appearance and Functionality
	Fuse
	Relay
	Wiper/Washer Stalk Switch
	Related Circuits or Connectors of Wiper/Washer Stalk Switch
	Related Circuits or Connectors of Windscreen Washer Pump
	Windscreen Washer Pump Assembly
	Body Control Module

Front Wiper Inoperative

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of front wiper work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check front compartment lid	Check if the front compartment lid is closed. If abnormal: after closing the bonnet, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check front compartment lid touch switch	Check the bonnet touch switch for damage. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check fuses	Check the front wiper fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the relay	Check the front wiper enable and speed relays for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the wiper/washer stalk switch	Remove the original wiper/washer stalk switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 7.

Test Condition	Detail/Result/Action
7. Check related circuits or connectors of the wiper/washer stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the wiper/washer stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check related circuits or connectors of the front wiper motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of front wiper motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the front wiper motor harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check front wiper motor assembly	Remove the original windscreen wiper motor from the vehicle, fit a new good one and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check BCM	After the BCM is flashed, confirm if the front wiper works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Wiper

Front Wiper Fails to Wipe Clean

Test Condition	Detail/Result/Action
1. Check windscreen wiper blade	Check if the windscreen wiper blade is deformed, aged or worn. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the windscreen wiper arm	Check the windscreen wiper linkage mechanism for any signs of deformation or damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the windscreen wiper linkage mechanism for installation	If above causes are excluded, it indicates that the retaining bolts of the wiper linkage mechanism are loose, damaged or missing, please tighten/fit the retaining bolts of front wiper linkage mechanism. Confirm the system works normally after tightening/fitting the bolts.

Front Wiper Fails to Stop

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of front wiper work normally and check the exterior components for obvious blockage or damage. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the relay	Check the front wiper enable and speed relays for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the wiper/washer stalk switch	Remove the original wiper/washer stalk switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the front wiper motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the front wiper motor harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the front wiper works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Wiper

Abnormal Noise/Shake During Front Wiper Operation

Test Condition	Detail/Result/Action
1. Check the windscreen wiper arm	Check the windscreen wiper arm for any signs of deformation or damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the windscreen wiper arm for installation	Check the windscreen wiper arm for any signs of looseness, damage or loss of retaining bolts. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the windscreen wiper linkage mechanism	Check the windscreen wiper linkage mechanism for any signs of deformation or damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the windscreen wiper linkage mechanism for installation	Check the windscreen wiper linkage mechanism for any signs of looseness, damage or loss of retaining bolts. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the front wiper motor	If the above causes are excluded, it indicates that the front wiper motor has failed, replace the front wiper motor. After the replacement, confirm that the system can work normally.

Front Wiper Fails to Return to Original Position

Test Condition	Detail/Result/Action
1. Check the windscreen wiper arm	Check the windscreen wiper arm for any signs of deformation or damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the windscreen wiper arm for installation	Check the windscreen wiper arm for any signs of looseness, damage or loss of retaining bolts. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the windscreen wiper linkage mechanism	Check the windscreen wiper linkage mechanism for any signs of deformation or damage. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4. If the above causes are excluded, it indicates that the front wiper motor mounting position may have failed, tighten/fit the retaining bolts of the front wiper motor. After the replacement, confirm that the system can work normally.
4. Check the windscreen wiper linkage mechanism for installation	Check the windscreen wiper linkage mechanism for any signs of looseness, damage or loss of retaining bolts. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check related circuits or connectors of the front wiper motor	Disconnect the front wiper motor harness connector from the BCM, and check the conductivity of the corresponding Pin of signal line. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Reference Information	
Circuit Diagram	Wiper

Front Washer Sprays Insufficiently

Test Condition	Detail/Result/Action
1 Check the windscreen washer nozzle	Check the windscreen washer nozzle for any signs of blockage or damage. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the windscreen washer nozzle hose	Check the windscreen washer nozzle hose for any signs of damage. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the windscreen washer reservoir hose	Check the windscreen washer reservoir hose for any signs of damage. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the windscreen washer pump	After above causes are excluded, it indicates that the windscreen washer pump failed, replace the windscreen washer pump. After the replacement, confirm that the system works normally.

Front Washer Inoperative

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the front washer can be performed properly and check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the washer pump fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the relay	Check the windscreen washer relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the wiper/washer stalk switch	Remove the original wiper/washer stalk switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check related circuits or connectors of the wiper/washer stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the wiper/washer stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check related circuits or connectors of the windscreen washer pump	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the windscreen washer motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the windscreen washer pump assembly	Remove the original windscreen washer pump from the vehicle, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check BCM	After the BCM is flashed, confirm if the front washer can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Washer

Lighting System

Interior Lighting

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Front Reading Lamp Not Illuminated	Appearance and Functionality
	Related Circuits or Connectors of Front Reading Lamp
	Front Reading Lamp Assembly
	Body Control Module
Rear Reading Lamp Failure	Appearance and Functionality
	Related Circuits or Connectors of Rear Reading Lamp
	Rear Reading Lamp Assembly
	Body Control Module
Vanity Mirror Lamp Failure	Appearance and Functionality
	Vanity Mirror Lamp Switch
	Related Circuits or Connectors of Vanity Mirror Lamp Switch
	Related Circuits or Connectors of Vanity Mirror Lamp
	Vanity Mirror Lamp Assembly
	Body Control Module
Trunk Lamp Not Illuminated	Appearance and Functionality
	Boot Light Bulb
	Tailgate Release Switch
	Related Circuits or Connectors of Tailgate Release Switch
	Related Circuits or Connectors of Trunk Lamp
	Trunk Lamp
	Body Control Module

Front Reading Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the front reading lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the front reading lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the front reading lamp and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the front reading lamp harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the front reading lamp assembly	Remove the original front reading lamp assembly from the vehicle, fit a new good one (replace the higher-level assembly), and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check BCM	After the BCM is flashed, confirm whether the front reading lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Interior Lighting

Rear Reading Lamp Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the rear reading lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the rear reading lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the rear reading lamp harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the rear reading lamp harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the rear reading lamp assembly	Remove the original rear reading lamp assembly from the vehicle, fit a new good one (replace the higher-level assembly), and confirm whether it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check BCM	After the BCM is flashed, confirm whether the rear reading lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Interior Lighting

Vanity Mirror Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the vanity mirror lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the vanity mirror lamp switch	Remove the original vanity mirror lamp switch from the vehicle, fit a new good one, and confirm whether it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the vanity mirror lamp switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect connectors on both ends of the harness connecting the vanity mirror lamp switch to the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of vanity mirror lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the vanity mirror lamp and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the vanity mirror lamp assembly	Remove the original vanity mirror lamp from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm whether the vanity mirror lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Interior Lighting

Trunk Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the trunk lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Tailgate Release Switch	Check the tailgate release switch for damage or deformation. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the tailgate release switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate release switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the trunk lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect connectors on both ends of the harness connecting the trunk lamp to the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C.

Test Condition	Detail/Result/Action
	C. Disconnect the harness connector of the trunk lamp and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the trunk lamp	Remove the original trunk lamp from the vehicle, fit a new good side trunk lamp and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm if the trunk lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
	Interior Lighting

Exterior Lighting

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Low Beam Not Illuminated	Appearance and Functionality
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related Circuits or Connectors of Low Beam
	Low Beam
	Body Control Module
Low Beam Always On	Appearance and Functionality
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related Circuits or Connectors of Low Beam
	Body Control Module
High Beam Not Illuminated	Appearance and Functionality
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related Circuits or Connectors of High Beam
	High Beam
	Body Control Module
High Beam Always On	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of High Beam
	Body Control Module
Headlamp Leveling Failure	Appearance and Functionality
	Headlamp Leveling Switch
	Related Circuits or Connectors of Headlamp Leveling Switch
	Related Circuits or Connectors of Headlamp
	Headlamp Assembly
Front Position Lamp Not Illuminated	Appearance and Functionality
	Fuse
	Related Circuits or Connectors of Front Position Lamp
	Front Position Lamp
	Body Control Module

Daytime Running Lamp Not Illuminated	Appearance and Functionality
	Fuse
	Relay
	Related Circuits or Connectors of Daytime Running Lamp
	Daytime Running Lamp
	Body Control Module
Hazard Warning Lamp Not Illuminated	Appearance and Functionality
	Hazard Warning Lamp Switch
	Related Circuits or Connectors of Hazard Warning Lamp Switch
	Related Circuits or Connectors of Hazard Warning Lamp
	Hazard Warning Lamp
	Body Control Module
All Hazard Warning Lamps Keep Flashing	Appearance and Functionality
	Hazard Warning Lamp Switch
	Related Circuits or Connectors of Hazard Warning Lamp Switch
	Related Circuits or Connectors of Hazard Warning Lamp
	Body Control Module
Reverse Lamp Not Illuminated	Appearance and Functionality
	Reverse Lamp Switch
	Related Circuits or Connectors of Reverse Lamp Switch
	Related Circuits or Connectors of Reverse Lamp
	Reverse Lamp
	Body Control Module
Reverse Lamp Always On	Appearance and Functionality
	Reverse Lamp Switch
	Related Circuits or Connectors of Reverse Lamp Switch
	Related Circuits or Connectors of Reverse Lamp
	Body Control Module
Brake Lamp Not Illuminated	Appearance and Functionality
	Brake Pedal Switch
	Related Circuits or Connectors of Brake Pedal Switch
	Related lines or connectors of brake lamp
	Brake Lamp
	Body Control Module

Brake Lamp Always On	Appearance and Functionality
	Related Circuits or Connectors of Brake Lamp
	Brake Pedal Switch
	Related Circuits or Connectors of Brake Pedal Switch
	Body Control Module
Rear Fog Lamp Not Illuminated	Appearance and Functionality
	Related lines or connectors of rear fog lamp
	Rear Fog Lamp
	Body Control Module
Rear Fog Lamp Always On	Related lines or connectors of rear fog lamp
	Body Control Module
Position Lamp Not Illuminated	Appearance and Functionality
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related Circuits or Connectors of Position Lamp
	Position Lamp
	Body Control Module
Position Lamp Always ON	Appearance and Functionality
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related Circuits or Connectors of Position Lamp
	Position Lamp
	Body Control Module
High-mounted Stop Lamp Not Illuminated	Appearance and Functionality
	High-mounted Stop Lamp Assembly
	Brake Pedal Switch
	Related Circuits or Connectors of Brake Pedal Switch
	Related lines or connectors of high-mounted stop lamp
	Body Control Module
High-mounted Stop Lamp Always On	Appearance and Functionality
	Related Circuits or Connectors of High-mounted Stop Lamp
	Brake Pedal Switch
	Related Circuits or Connectors of Brake Pedal Switch
	Body Control Module

License Plate Lamp Not Illuminated	Appearance and Functionality
	License Plate Lamp Bulb
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related lines or connectors of license plate lamp
	Body Control Module
License Plate Lamp Always On	Appearance and Functionality
	Light Stalk Switch
	Related lines or connectors of lamp lever switch
	Related lines or connectors of license plate lamp
	Body Control Module
Front Direction Indicator Lamp Not Illuminated	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of Light Stalk Switch
	Related Circuits or Connectors of Front Direction Indicator Lamp
	Front Direction Indicator Lamp
	Body Control Module
Front Direction Indicator Lamp Always On	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of Front Direction Indicator Lamp
	Body Control Module
Side Direction Indicator Lamp Not Illuminated	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of Light Stalk Switch
	Related Circuits or Connectors of Side Direction Indicator Lamp
	Side direction indicator lamp
	Body Control Module
Side Direction Indicator Lamp Always On	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of Light Stalk Switch
	Related Circuits or Connectors of Side Direction Indicator Lamp
	Body Control Module

Rear Direction Indicator Lamp Not Illuminated	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of Light Stalk Switch
	Related Circuits or Connectors of Rear Direction Indicator Lamp
	Rear Direction Indicator Lamp
	Body Control Module
Reverse Lamp Always On	Appearance and Functionality
	Light Stalk Switch
	Related Circuits or Connectors of Light Stalk Switch
	Related Circuits or Connectors of Rear Direction Indicator Lamp
	Body Control Module

Low Beam Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the low beam can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the low beam	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the headlamp assembly harness connector, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the headlamp assembly harness connector from the BCM, check the conductivity of

Test Condition	Detail/Result/Action
	the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the low beam	Remove the original headlamp assembly from the vehicle, fit a new good one, and confirm if the low beam can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm if the low beam can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - High Beam

Low Beam Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the low beam can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the low beam	Disconnect the headlamp harness connector, and check the corresponding Pin of the low beam connector for short to battery. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the low beam can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - High/Low Beam

High Beam Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the high beam can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check of related circuits or connectors of the high beam	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the headlamp assembly harness connector, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the headlamp assembly harness connector from the BCM, check the conductivity of

Test Condition	Detail/Result/Action
	the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the high beam	Remove the original headlamp assembly from the vehicle, fit a new good one, and confirm if the high beam can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm if the high beam can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - High Beam

High Beam Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the high beam can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the high beam	Disconnect the headlamp harness connector, and check the corresponding Pin of the high beam connector for short to battery. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check BCM	After the BCM is flashed, confirm if the high beam can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - High Beam

Headlamp Leveling Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the headlamp leveling can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the headlamp leveling switch	Remove the original headlamp leveling switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the headlamp leveling switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the headlamp leveling switch and check if the power supply and the ground of the connector are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of headlamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the headlamp harness connector, and check if the power supply and the ground of the connector are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the headlamp leveling switch harness connector from the headlamp, check the conductivity

Test Condition	Detail/Result/Action
	of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the headlamp	After the above causes are excluded, it indicates that the headlamp has failed, please replace the headlamp. After the replacement, confirm that the system works normally.

Reference Information	
Circuit Diagram	Exterior Lighting - Headlamp Level Regulating

Front Position Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the front position lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the related fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the front position lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the headlamp harness connector, and check if the power supply and the ground of the connector are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the headlamp harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

Test Condition	Detail/Result/Action
4 Check the front position lamp	Remove the original headlamp assembly from the vehicle, fit a new good one, and confirm if the front position lamp can work normally. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the front position lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - Daytime Running Lamp & Width Lamp

Daytime Running Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the daytime running lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the related fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the relay	Inspect the related relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the daytime running lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the headlamp assembly harness connector, and check if its battery and ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the headlamp assembly harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the daytime running lamp	Remove the original headlamp assembly from the vehicle, fit a new good one, and confirm if the daytime running lamp can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm if the daytime running lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - Daytime Running Lamp & Width Lamp

Hazard Warning Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the hazard warning lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the hazard warning lamp switch	Remove the original hazard warning lamp switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the hazard warning lamp switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the hazard warning lamp switch harness connector, and check if its power supply and ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the hazard warning lamp switch harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

Test Condition	Detail/Result/Action
4. Check related circuits or connectors of the hazard warning lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect harness connectors of the headlamp assembly, tail lamp assembly and side direction indicator lamp, and check if the power supply and ground of the direction indicator lamp are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. B. Disconnect the headlamp assembly, tail lamp assembly and side direction indicator lamp harness connectors from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the hazard warning lamp	Remove the original headlamp assembly, tail lamp assembly and side direction indicator lamp from the vehicle, fit new good ones, and confirm if the hazard warning lamp can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the hazard warning lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - Direction Indicator Lamp

All Hazard Warning Lamps Keep Flashing

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the hazard warning lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the hazard warning lamp switch	Remove the original hazard warning lamp switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the hazard warning lamp switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B Disconnect the harness connector of the hazard warning lamp switch from the BCM, and check for conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the hazard warning lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. C. Disconnect the headlamp assembly, tail lamp assembly and side direction indicator lamp harness connectors from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed.

Test Condition	Detail/Result/Action
	• No → Go to Step 5.
5. Check BCM	After flashing the BCM, confirm if the hazard warning lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - Direction Indicator Lamp

Reverse Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the reverse lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the reverse lamp switch	Remove the original reverse lamp switch from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of reverse lamp switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector connecting the TCM, GW and BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4 Check related circuits or connectors of the reverse lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the reverse lamp harness connector, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. B. Disconnect the reverse lamp harness connector from the BCM, check the conductivity of the

Test Condition	Detail/Result/Action
	corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the reverse lamp	Remove the original reverse lamp from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the reverse lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - Reverse Lamp
	Data communication - Body HS CAN
	Data Communication - Power HS CAN

Reverse Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the reverse lamp can be performed properly and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the reverse lamp switch	Remove the original reverse lamp switch from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of reverse lamp switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector connecting the TCM, GW and BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4 Check related circuits or connectors of the reverse lamp	Disconnect the harness connector of the reverse lamp, and check the corresponding Pin of the reverse lamp connector for short to battery. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After flashing the BCM, confirm if the reverse lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting - Reverse Lamp
	Data communication - Body HS CAN
	Data Communication - Power HS CAN

Brake Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the brake lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the brake pedal switch	Check whether the real-time display parameter of brake pedal switch state is normal, if abnormal, remove the original brake pedal switch from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm whether it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the brake pedal switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the brake pedal switch from the BCM, and check for conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the brake pedal switch and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

Test Condition	Detail/Result/Action
4. Check related lines or connector of brake lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tail lamp/rear combination lamp harness connector from the BCM, and check the conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the brake lamp and check whether the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the brake lamp	Remove the original brake lamp from the vehicle, fit a new good one (replace a higher-level assembly) and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the brake lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Brake Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the brake lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the brake lamp	Disconnect the harness connector of the brake lamp, and check the corresponding Pin of the brake lamp connector for short to battery. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake pedal switch	Check whether the real-time display parameter of brake pedal switch state is normal, if abnormal, remove the original brake pedal switch from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm whether it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the brake pedal switch	A. Disconnect the brake pedal switch harness connector from the BCM, check the conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the brake pedal switch and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After flashing the BCM, confirm if the brake lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Rear Fog Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the rear fog lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the rear fog lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the rear fog lamp from the BCM, and check for conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the rear fog lamp, and check if the power supply and the ground of the rear fog lamp are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
3. Check the rear fog lamp	Remove the original rear fog lamp assembly from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.
4. Check BCM	After flashing the BCM, confirm if the rear fog lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Rear Fog Lamp Always On

Test Condition	Detail/Result/Action
1. Check related circuits or connectors of the rear fog lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the rear fog lamp from the BCM, and check for conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the rear fog lamp, and check if the power supply and the ground of the rear fog lamp are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check BCM	After flashing the BCM, confirm if the rear fog lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Position Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of the position lamp can work normally and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the position lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the position lamp and check if the power supply and the ground of the position lamp are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the position lamp	Remove the original position lamp from the vehicle, fit a new good one (replace a higher-level assembly) and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the position lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Position Lamp Always ON

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the related functions of the position lamp can work normally and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the position lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the position lamp and check if the power supply and the ground of the position lamp are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the position lamp	Remove the original position lamp from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the position lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

High-mounted Stop Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the high-mounted stop lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2 Check the high-mounted stop lamp assembly	Remove the original high-mounted stop lamp assembly from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake pedal switch	Check whether the real-time display parameter of brake pedal switch state is normal, if abnormal, remove the original brake pedal switch from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm whether it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the brake pedal switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the brake pedal switch from the BCM, and check for conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the brake pedal switch and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears.

Test Condition	Detail/Result/Action
	• Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check related circuits or connectors of the high-mounted stop lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the high-mounted stop lamp from the BCM, check the conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the brake lamp and check whether the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the high-mounted stop lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Brake Apply Sensing

High-mounted Stop Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the high-mounted stop lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the high-mounted stop lamp	Disconnect the harness connector of the high-mounted stop lamp, and check the corresponding Pin of the high-mounted stop lamp connector for short to battery. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the brake pedal switch	Check whether the real-time display parameter of brake pedal switch state is normal, if abnormal, remove the original brake pedal switch from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm whether it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the brake pedal switch	A. Disconnect the brake pedal switch harness connector from the BCM, check the conductivity of the corresponding Pin of the connector and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the brake pedal switch and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After flashing the BCM, confirm if the high-mounted stop lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

License Plate Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the license plate lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the license plate lamp bulb	Check the bulb for looseness and the filament for breakage. If yes: replace related parts (replace a higher-level assembly) and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

5. Check related circuits or connectors of the license plate lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the license plate lamp, and check if the power supply and the ground of the license plate lamp are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After flashing the BCM, confirm if the license plate lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

License Plate Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the license plate lamp can be performed properly and if the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the license plate lamp	Disconnect the harness connector of the license plate lamp, and check the corresponding Pin of the license plate lamp connector for short to battery. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After flashing the BCM, confirm if the license plate lamp can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Front Direction Indicator Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if related functions of the front direction indicator lamp are normal, and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the front direction indicator lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the headlamp assembly harness connector, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the headlamp assembly harness connector from the BCM, check the conductivity of

Test Condition	Detail/Result/Action
	the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the front direction indicator lamp	Remove the original headlamp assembly from the vehicle, fit a new good one, and confirm if the front direction indicator lamp can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm whether the front direction indicator lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Front Direction Indicator Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if related functions of the front direction indicator lamp are normal, and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the front direction indicator lamp	Disconnect the headlamp assembly harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check BCM	After the BCM is flashed, confirm whether the front direction indicator lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Side Direction Indicator Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if related functions of the side direction indicator lamp are normal, and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related lines or connectors of side direction indicator lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the side direction indicator lamp harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the side direction indicator lamp harness connector from the BCM, check the

Test Condition	Detail/Result/Action
	conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the side direction indicator lamp	Remove the original side direction indicator lamp assembly from the vehicle, fit a new good one, and confirm if the side direction indicator lamp works normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm whether the side direction indicator lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Side Direction Indicator Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if related functions of the side direction indicator lamp are normal, and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related lines or connectors of side direction indicator lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the side direction indicator lamp harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the side direction indicator lamp harness connector from the BCM, check the

Test Condition	Detail/Result/Action
	conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm whether the side direction indicator lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Rear Direction Indicator Lamp Not Illuminated

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if related functions of the rear direction indicator lamp are normal, and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of rear direction indicator lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the rear direction indicator lamp harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the rear direction indicator lamp harness connector from the BCM, check the

Test Condition	Detail/Result/Action
	conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the rear direction indicator lamp	Remove the original rear tail lamp assembly from the vehicle, fit a new good one and confirm if the rear direction indicator lamp can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm whether the rear direction indicator lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Rear Direction Indicator Lamp Always On

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if related functions of the rear direction indicator lamp are normal, and check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the light stalk switch	Remove the original light stalk switch from the vehicle, fit a new good one and confirm if it works normally. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the light stalk switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the light stalk switch harness connector from the BCM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of rear direction indicator lamp	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the rear direction indicator lamp harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the rear direction indicator lamp harness connector from the BCM, check the

Test Condition	Detail/Result/Action
	conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm whether the rear direction indicator lamp works normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Exterior Lighting

Door System

Four-door

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Single Power Window Inoperative	Appearance and Functionality
	Fuse
	Power Window Regulator Cable
	Power Window Switch Assembly
	Related Circuits or Connectors of Power Window Switch
	Related Circuits or Connectors of Power Window Motor
	Power Window Motor Assembly
	Body Control Module
Window Regulator Stuck	Appearance and Functionality
	Window Glass Run Channel Weatherstrip
Front Door Opening Inside Failure	Interior Handle and Interior Handle Cable
	Door Lock Body
Front Door Opening Outside Failure	Appearance and Functionality
	Door Lock Body
	Related Circuits or Connectors of Door Lock Motor
	Door Lock Body Motor
	Body Control Module
Rear Door Opening Inside Failure	Interior Handle and Interior Handle Cable
	Door Lock Body
Rear Door Opening Outside Failure	Appearance and Functionality
	Door Lock Body
	Related Circuits or Connectors of Door Lock Motor
	Door Lock Body Motor
	Body Control Module

Single Power Window Inoperative

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the power window can be performed properly and check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the power window fuse for damage. If yes: replace the power window fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the power window regulator cable	Check the power window regulator cable for any sign of disengagement, breakage, etc. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the power window switch assembly	Remove the original power window switch assembly from the vehicle, fit a new good one and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check related circuits or connectors of the power window switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the power window switch harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C.

Test Condition	Detail/Result/Action
	C. Disconnect the power window switch harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check related circuits or connectors of the power window motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the power window motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the window motor harness connector from the BCM, check the conductivity of the corresponding Pin of Lin bus, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the power window motor assembly	Remove the original power window motor from the vehicle, fit a new good one (replace a higher-level assembly) and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check BCM	After the BCM is flashed, confirm if the power window can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Driver Window Lift/Passenger Window lift/Rear Left Window Lift/Rear Right Window Lift

Window Regulator Stuck

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check the glass guide rail for any signs of blockage by foreign matters, deformation, damage, etc. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check window glass run channel weatherstrip	If the above causes are excluded, it indicates that the window glass run channel weatherstrip may be stuck by foreign matters, or it is deformed or damaged. Confirm that the system works normally after cleaning/replacing the window glass run channel weatherstrip.

Front Door Opening Inside Failure

Test Condition	Detail/Result/Action
1. Check interior handle and interior handle cable	Check if the interior handle cable on the corresponding fault side is damaged, broken or too long, and if the interior handle has the issues of insufficient travel or deformation. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check door lock body	If the above causes are excluded, it indicates that the door lock body may have a failure. Confirm that the system works normally after replacing the door lock body on the corresponding fault side.

Front Door Opening Outside Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the exterior handle link on the corresponding fault side is damaged or broken, if the exterior handle liner is improperly fitted, or if the exterior handle has the issues of insufficient travel or deformation. If yes: repair/replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check door lock body	Check the door lock body on the corresponding fault side for any sign of looseness, blockage or deformation. If yes: repair/replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related lines or connectors of door lock motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the door lock motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the door lock motor harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

4. Check the door lock body motor	Remove the original door lock body motor from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the door can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Door Locking System

Rear Door Opening Inside Failure

Test Condition	Detail/Result/Action
1. Check interior handle and interior handle cable	Check if the interior handle cable on the corresponding fault side is damaged, broken or too long, and if the interior handle has the issues of insufficient travel or deformation. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check door lock body	If the above causes are excluded, it indicates that the door lock body may have a failure. Confirm that the system works normally after replacing the door lock body on the corresponding fault side.

Rear Door Opening Outside Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the exterior handle link on the corresponding fault side is damaged or broken, if the exterior handle liner is improperly fitted, or if the exterior handle has the issues of insufficient travel or deformation. If yes: repair/replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check door lock body	Check the door lock body on the corresponding fault side for any sign of looseness, blockage or deformation. If yes: repair/replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related lines or connectors of door lock motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the door lock motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the door lock motor harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

4. Check the door lock body motor	Remove the original door lock body motor from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the door can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Door Locking System

Engine Cover

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Charging Port Release Failure	Appearance and Functionality
	Related Lines or Connectors of Charging Port Door Motor
	Charging Port Door Assembly
	Body Control Module

Charging Port Release Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Confirm if related functions of the charging port door are normal, and check the exterior component for any sign of obvious stuck, damage, etc. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related lines or connectors of charging port door motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the charging port door motor from the BCM harness connector, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the charging port door assembly	Remove the original charging port door assembly, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check BCM	After the BCM is flashed, confirm if the charging port door can work normally. If yes, diagnosis is completed; if not, replace BCM module.

Reference Information	
Circuit Diagram	Door Locking System

Manual Tailgate

Symptom Table

Tailgate Release Failure (Manual Open Failure)

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the tailgate release switch	Remove the original tailgate release switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the tailgate release switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate release switch harness connector from the PEPS module, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the tailgate lock body	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate lock body harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C.

Test Condition	Detail/Result/Action
	C. Disconnect the tailgate lock body harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check tailgate lock body	Remove the original tailgate lock body from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check BCM	After the BCM is flashed, confirm if the tailgate can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Door Locking System

Tailgate Release Failure (Remote Key Open Failure)

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the remote key	Check if the remote key can work normally. If not: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the tailgate lock body	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate lock body harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the tailgate lock body harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check tailgate lock body	Remove the original tailgate lock body from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the tailgate can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Door Locking System

Safety and Protection

Vehicle Access System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
All Functions of Remote Key Fail	Appearance and Functionality
	Distance or Interference Source of Remote Key
	Remote key battery
Charging Port Release Failure	Charging Port Door
	Charging Port Release Cable
Single Door Opening from Outside Failure	Appearance and Functionality
	Door Lock Body
	Circuits or connectors related to door lock motor
	Door Lock Body Motor
	Body Control Module
Tailgate Release Failure (Manual Open Failure)	Appearance
	Fuse
	Tailgate Release Switch
	Related Circuits or Connectors of Tailgate Release Switch
	Related Circuits or Connectors of Tailgate Lock Body
	Left Power Tailgate Support Rod
	Tail Gate Lock Body
	Electric tailgate control module
	Body Control Module
Tailgate Release Failure (Remote Key Open Failure)	Appearance
	Remote Key
	Fuse
	Related Circuits or Connectors of Tailgate Lock Body
	Left Power Tailgate Support Rod
	Tail Gate Lock Body
	Electric tailgate control module

All Functions of Remote Key Fail

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check the remote key for any sign of obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the distance or interference source of remote key	Move the remote key in the effective distance and confirm that there is no interference source nearby. Check if the remote key functions return to normal. If it can work properly, the diagnosis is completed; if not, check the remote key battery.
3. Check remote key battery	Make sure that the remote key battery (with the positive pole facing upward) is properly fitted and of sufficient capacity (no anti-theft system warning lamp flashing on the information centre display). Check whether the remote key function resumes to normal. If it can work normally, the diagnosis is completed; if not, replace the remote key, and reconfirm whether the system can work normally. If it still cannot work normally, check other corresponding mechanical parts.

Charging Port Release Failure

Test Condition	Detail/Result/Action
1. Check charging port	Check the charging port door for any signs of deformation, blockage, etc. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the charging port release cable	If the above causes are excluded, the charging port release cable may be damaged or broken, or both ends of the charging port release cable are misaligned with the open handle and the charging port door mounting groove. Confirm the system works normally after replacing or refitting the charging port door release cable.

Single Door Opening from Inside Failure

Test Condition	Detail/Result/Action
1. Check interior handle and interior handle cable	Check if the interior handle cable on the corresponding fault side is damaged, broken or too long, and if the interior handle has the issues of insufficient travel or deformation. If yes: replace/repair the related parts and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the door lock body	If the above causes are excluded, it indicates that the door lock body may have a failure. Confirm that the system works normally after replacing the door lock body on the corresponding fault side.

Single Door Opening from Outside Failure

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the exterior handle link on the corresponding fault side is damaged or broken, if the exterior handle liner is improperly fitted, or if the exterior handle has the issues of insufficient travel or deformation. If yes: repair/replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the door lock body	Check the door lock body on the corresponding fault side for any sign of looseness, blockage or deformation. If yes: repair/replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the door lock motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the door lock motor and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the door lock motor harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

Test Condition	Detail/Result/Action
4. Check the door lock body motor	Remove the original door lock body motor from the vehicle, fit a new good one (if not allowed to replace it, replace a higher-level assembly) and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the door can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Lock

Tailgate Release Failure (Manual Open Failure)

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Inspect the fuses (if equipped)	Check the power tailgate fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the tailgate release switch	Remove the original tailgate release switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the tailgate release switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate release switch harness connector from the PEPS module, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check related circuits or connectors of the tailgate lock body	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate lock body harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the tailgate lock body harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the left power tailgate support rod (if equipped)	Remove the original left power tailgate support rod from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the tailgate lock body	Remove the original tailgate lock body from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check the power tailgate control module (if equipped)	After the PLCM is flashed or replaced, check if the tailgate can work normally. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check BCM	After the BCM is flashed, confirm if the tailgate can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Lock
	Passive Entry and Passive Start
	Power Liftgate

Tailgate Release Failure (Remote Key Open Failure)

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the remote key	Check if the remote key can work normally. If not: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Inspect the fuses (if equipped)	Check the power tailgate fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the tailgate lock body	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate lock body harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the tailgate lock body harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

Test Condition	Detail/Result/Action
5. Check the left power tailgate support rod (if equipped)	Remove the original left power tailgate support rod from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the tailgate lock body	Remove the original tailgate lock body from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the power tailgate control module (if equipped)	After the PLCM is flashed or replaced, check if the tailgate can work normally. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check BCM	After the BCM is flashed, confirm if the trunk can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Lock
	Passive Entry and Passive Start
	Power Liftgate

Anti-theft System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Door Ajar Warning Function Unavailable When Locking	Appearance
	Remote Key
	Fuse
	Fuse
	Door Lock
	Related Circuits or Connectors of Horns
	Horn
	Body Control Module
IMMO Triggered, Horn Inoperative	Fuse
	Relay
	Related Circuits or Connectors of Horns
	Horn
	Body Control Module

Door Ajar Warning Function Unavailable When Locking

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for any obvious signs of being stuck or damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the remote key	Check if the remote key can work normally. If not: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check fuses	Check the horn fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the relay	Check the horn relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the door lock	Check the door lock for any signs of being stuck or displaced. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check related circuits or connectors of the horn	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the horn harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears.

Test Condition	Detail/Result/Action
	• Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check horn	Remove the original horn from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check BCM	After the BCM is flashed, confirm if the warning function can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Horn

IMMO Triggered, Horn Inoperative

Test Condition	Detail/Result/Action
1. Check fuses	Check the horn fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the relay	Check the horn relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the horn	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the horn harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check horn	Remove the original horn from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the warning function can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Horn

PDC System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
No Warning Given for Obstacle When Parking	Appearance
	Speaker(s)
	PDC Sensor
	Related Circuits or Connectors of PDC Sensor
	Body Control Module
Warning Given for No Obstacle When Parking	Sensor Surface Cleanliness
	Sensor Refit
	PDC Sensor
Inaccurately-Measured Distance from the Obstacle When Parking	Obstacle Material
	Obstacle Size
	Sensor Surface Cleanliness
	PDC Sensor
Rear View Camera Not Display	Appearance and Functionality
	Rear Camera
	Related Circuits or Connectors of Rear Camera
	Related Circuits or Connectors of Reverse Lamp Signal
	Body Control Module

No Warning Given for Obstacle When Parking

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check speakers	Use the entertainment system to play music or listen to the radio and check if the entertainment system speakers sound normally; if yes, diagnosis is completed; if not, troubleshoot the speakers according to the troubleshooting methods in the chapter of Entertainment System, "No or Unclear Sound During Multimedia Player or Radio Working (with normal display, operation, multimedia playing or radio station search)".
3. Check PDC sensor	Remove the original PDC sensor from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the PDC sensor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the PDC sensor harness connector, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the PDC sensor harness connector from the BCM, check the conductivity of the corresponding LIN bus, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the PDC sensor can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	PDC System

Warning Given for No Obstacle When Parking

Test Condition	Detail/Result/Action
1. Check the surface cleanliness of the sensor	Keep the sensor surface clean, and remove the dirt from the surface. If it cannot work normally, check for other possible causes.
2. Check the installation of the sensor	Check if the sensor is fitted in place, and check if the system can work normally after adjusting the mounting angle. If it can work normally, diagnosis is completed; if it still cannot work normally, check for other possible causes.
3. Check PDC sensor	After replacing the PDC sensor with a new good one, confirm if the PDC system can alarm normally. If yes, diagnosis is completed; if still not, check for other possible causes.

Inaccurately-Measured Distance from the Obstacle When Parking

Test Condition	Detail/Result/Action
1. Check the material of the obstacle	Check if the obstacle is of acoustic material (spongy, foam, etc.). Property of sensor: cannot return sound waves. If not, check for other possible causes.
2. Check for small obstacle	If the obstacle is too small, the sensor cannot detect it. If not, check for other possible causes.
3. Check the surface cleanliness of the sensor	Keep the sensor surface clean, and remove the dirt from the surface. If the sensor surface is normal, check for other possible causes.
4. Check PDC sensor	After replacing the PDC sensor with a new good one, confirm if the PDC system can alarm normally. If yes, diagnosis is completed; if still not, check for other possible causes.

Rear View Camera Not Display

Test Condition	Detail/Result/Action
1. Check the appearance and functionality	Check if the functions of the rear view camera can be performed properly and check the exterior components for any obvious signs of being damaged. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the rear camera	Remove the original rear camera from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the rear camera	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the rear camera harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the rear camera harness connector from the entertainment mainframe, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.

4 Check related circuits or connectors of the reverse lamp signal	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. Check the conductivity of the corresponding Pin of communication line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check BCM	After the BCM is flashed, confirm if the rear view camera can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Rearview Camera
	PDC System

Passive Entry and Passive Start System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Keyless Unlocking Function Failure	Is Smart Key Too Far Away from Vehicle
	Is Any Strong Interference Source in the Vicinity of Smart Key
	Smart Key Battery
	Smart Key
	Fuse
	Door Handle Antenna
	Related Circuits or Connectors of Door Handle Antenna
	Related Circuits or Connectors of PEPS Module
	PEPS Module
Keyless Entry Coverage Abnormal	Is Smart Key Too Far Away from Vehicle
	Is Any Strong Interference Source in the Vicinity of Smart Key
	Smart Key
	Door Handle Antenna
	Interior Antenna
	PEPS Module
Keyless Locking Function Failure	Is Smart Key Too Far Away from Vehicle
	Is Any Strong Interference Source in the Vicinity of Smart Key
	Smart Key Battery
	Smart Key
	Fuse
	Door Handle Antenna
	Related Circuits or Connectors of Door Handle Antenna
	Related Circuits or Connectors of PEPS Module
	Interior Antenna
	PEPS Module
Vehicle Cannot Start	Is Smart Key Too Far Away from Vehicle
	Is Any Strong Interference Source in the Vicinity of Smart Key
	Smart Key Battery
	Smart Key
	Fuse
	Relay
	Start-stop Switch
	Related Circuits or Connectors of Start-stop Switch

	Spare Coil
	Related Circuits or Connectors of Spare Coil
	Related Circuits or Connectors of PEPS Module
	PEPS Module
Vehicle Cannot Stall	Relay
	Related Circuits or Connectors of Gateway
	Gateway Module
Vehicle Cannot Stall Without Long Pressing	Related Circuits or Connectors of PEPS Module
	Vehicle Speed Signal Abnormal
Trunk Lid Keyless Open Failure	Is Smart Key Too Far Away from Vehicle
	Is Any Strong Interference Source in the Vicinity of Smart Key
	Smart Key Battery
	Smart Key
	Tailgate Release Switch
	Circuits or Connectors of Tailgate Release Switch
	Rear Bumper Antenna
	Related Circuits or Connectors of Rear Bumper Antenna
	Related Circuits or Connectors of PEPS Module
	PEPS Module

Keyless Unlocking Function Failure

Test Condition	Detail/Result/Action
1. Check if the smart key is too far away from the vehicle	Check if the smart key is too far away from the vehicle and if the fault disappears when the smart key is within 1.5m from the trunk. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check if any strong interference source exists in the vicinity of the smart key	Check if any strong interference source exists in the vicinity of the smart key and if the fault disappears when the key is far away from the strong interference source. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the smart key battery	Check if the battery is in good contact, and test the voltage of the smart key button battery. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check smart key	Check the smart key for damage or failure. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check fuses	Check the PEPS module fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check door handle antenna	Check if the door handle antenna and button are abnormal. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.

Test Condition	Detail/Result/Action
7. Check related circuits or connectors of the door handle antenna	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the door handle antenna harness connector from the PEPS module, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check related circuits or connectors of the PEPS module	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the PEPS module and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the PEPS module harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check PEPS module	After the PEPS is flashed, confirm if the keyless system can work normally. If yes, diagnosis is completed; if still not, replace the PEPS module.

Reference Information	
Circuit Diagram	Passive Entry and Passive Start

Keyless Entry Coverage Abnormal

Test Condition	Detail/Result/Action
1. Check if the smart key is too far away from the vehicle	Check if the smart key is too far away from the vehicle and if the fault disappears when the smart key is within 1.5m from the trunk. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check if any strong interference source exists in the vicinity of the smart key	Check if any strong interference source exists in the vicinity of the smart key and if the fault disappears when the key is far away from the strong interference source. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check smart key	Check the smart key for damage or failure. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check door handle antenna	Check if the door handle antenna and button are abnormal. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check interior antenna	Check if the interior antenna is abnormal. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check PEPS module	After the PEPS is flashed, confirm if the keyless entry coverage is normal. If yes, diagnosis is completed; if still not, replace the PEPS module.

Keyless Locking Function Failure

Test Condition	Detail/Result/Action
1. Check if the smart key is too far away from the vehicle	Check if the smart key is too far away from the vehicle and if the fault disappears when the smart key is within 1.5m from the trunk. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check if any strong interference source exists in the vicinity of the smart key	Check if any strong interference source exists in the vicinity of the smart key and if the fault disappears when the key is far away from the strong interference source. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the smart key battery	Check if the battery is in good contact, and test the voltage of the smart key button battery. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check smart key	Check the smart key for damage or failure. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check fuses	Check the PEPS module fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check door handle antenna	Check if the door handle antenna and button are abnormal. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.

Test Condition	Detail/Result/Action
7. Check related circuits or connectors of the door handle antenna	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the door handle antenna harness connector from the PEPS module, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check related circuits or connectors of the PEPS module	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the PEPS module and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the PEPS module harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check interior antenna	Check if the interior antenna is abnormal. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check PEPS module	After the PEPS is flashed, confirm if the keyless locking function is normal. If yes, diagnosis is completed; if still not, replace the PEPS module.

Reference Information	
Circuit Diagram	Passive Entry and Passive Start

Vehicle Cannot Start

Test Condition	Detail/Result/Action
1. Check if the smart key is too far away from the vehicle	Check if the smart key is too far away from the vehicle and if the fault disappears when the smart key is within 1.5m from the trunk. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check if any strong interference source exists in the vicinity of the smart key	Check if any strong interference source exists in the vicinity of the smart key and if the fault disappears when the key is far away from the strong interference source. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the smart key battery	Check if the battery is in good contact, and test the voltage of the smart key button battery. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check smart key	Check the smart key for damage or failure. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check fuses	Check the PEPS module fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the relay	Check ACC and IG relays for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.

Test Condition	Detail/Result/Action
7. Check the start-stop switch	Remove the original start-stop switch from the vehicle, fit a new good one, and confirm if it can work normally. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check related circuits or connectors of the start-stop switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the start-stop switch harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. B. Disconnect the start-stop switch harness connector, and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9 Check the spare coil	Check the spare coil for any abnormality. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check related circuits or connectors of the spare coil	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the spare coil harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related

Test Condition	Detail/Result/Action
	circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the harness connector of the spare coil and check if the ground is normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 11.
11. Check related circuits or connectors of the PEPS module	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the PEPS module and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the PEPS module harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 12.
12. Check PEPS module	After the PEPS is flashed, confirm if the start function of the vehicle is normal. If yes, diagnosis is completed; if not, replace PEPS module.

Reference Information	
Circuit Diagram	Vehicle Anti-Theft System
	Passive Entry and Passive Start

Vehicle Cannot Stall

Test Condition	Detail/Result/Action
1. Check the relay	Check the KL15 relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the gateway	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the fuse box harness connector from the GW, check the conductivity between the GW and the corresponding Pin of KL15 relay, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check smart key	Check the smart key for damage or failure. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4 Check the gateway module	After flashing the GW, confirm if the vehicle can power off normally. If yes, diagnosis is completed; if still not, replace the GW module.

Reference Information	
Circuit Diagram	Front Compartment Fuse Box Power Distribution

Vehicle Cannot Stall Without Long Pressing

Test Condition	Detail/Result/Action
1. Check PEPS module and connection line	Check the PEPS module and the connection line for any abnormality. Replace the PEPS module or related connection line when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check vehicle speed signal	Check if the vehicle speed signal is normal, and replace the SCS module or related connecting circuits when necessary. After the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.

Reference Information	
Circuit Diagram	Dynamic Stability Control System
	Passive Entry and Passive Start

Trunk Lid Keyless Open Failure

Test Condition	Detail/Result/Action
1. Check if the smart key is too far away from the vehicle	Check if the smart key is too far away from the vehicle and if the fault disappears when the smart key is within 1.5m from the trunk. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check if any strong interference source exists in the vicinity of the smart key	Check if any strong interference source exists in the vicinity of the smart key and if the fault disappears when the key is far away from the strong interference source. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the smart key battery	Check if the battery is in good contact, and test the voltage of the smart key button battery. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check smart key	Check the smart key for damage or failure. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the tailgate release switch	Remove the original tailgate release switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 6.

Test Condition	Detail/Result/Action
6. Check circuits or connectors of the tailgate release switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the tailgate release switch harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check the rear bumper antenna	Check if the rear bumper antenna is abnormal. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 8.
8. Check related circuits or connectors of the rear bumper antenna	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the rear bumper antenna harness connector from the PEPS module, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 9.
9. Check related circuits or connectors of the PEPS module	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the PEPS module and check if the power supply and the ground are normal. If not: repair/replace the related

Test Condition	Detail/Result/Action
	circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the PEPS module harness connector from the BCM, check the conductivity of the corresponding Pin, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 10.
10. Check PEPS module	After the PEPS is flashed, confirm if the tailgate keyless release can work normally. If yes, diagnosis is completed; if still not, replace the PEPS module.

Reference Information	
Circuit Diagram	Passive Entry and Passive Start

Body System

Horn

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Horn Keeps Honking	Horn relay
	Horn switch
	Related Circuits or Connectors of Horns
	Body Control Module
Horn Inoperative	Horn Fuse
	Horn Relay
	Horn switch
	Related Circuits or Connectors of Horn Switches
	Related Circuits or Connectors of Horns
	Horn
	Body Control Module
Window Regulator Stuck	Horn
	Related Circuits or Connectors of Horns
	Horn Supply Voltage

Horn Keeps Honking

Test Condition	Detail/Result/Action
1. Check the relay	Check the horn relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check horn switch	Check if the horn contact switch between the driver airbag and the steering wheel has any signs of being eroded or poorly connected. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the power window motor	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the horn switch harness connector from the BCM, check the conductivity of the corresponding Pin of signal line, and check for short to battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check BCM	After the BCM is flashed, confirm whether the horn can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Horn

Horn Inoperative

Test Condition	Detail/Result/Action
1. Check fuses	Check the horn fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the relay	Check the horn relay for damage. If yes: replace the relay; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check horn switch	Check if the horn contact switch between the driver airbag and the steering wheel has any signs of being eroded or poorly connected. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the horn switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the horn switch harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check related circuits or connectors of the horn	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the horn harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears.

Test Condition	Detail/Result/Action
	• Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check horn	Remove the original horn from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 7.
7. Check BCM	After the BCM is flashed, confirm whether the horn can work normally. If yes, diagnosis is completed; if still not, replace the BCM.

Reference Information	
Circuit Diagram	Horn

Abnormal Horn Sound (Cracking Voice, Lack of Treble / Bass)

Test Condition	Detail/Result/Action
1. Check horns	Remove the original horn from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the horn	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the horn switch harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the horn supply voltage	Check if the supply voltage of the horn is between 11V and 14V. If the voltage is normal, diagnosis is completed; if not, check for other possible causes.

Reference Information	
Circuit Diagram	Horn

Driver Seat Occupancy Sensor System

Symptom Table

If the fault occurs but the relevant control module does not store diagnostic trouble codes (DTCs) and the cause of the fault cannot be confirmed in the visual inspection, the fault diagnosis and troubleshooting shall be carried out according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
The driver cannot be detected	Driver seat occupancy sensor
	Driver seat occupancy sensor related circuit or connector
	Body control module

The driver cannot be detected

Test condition	Detail/Result/Action
1. Check the driver seat occupancy sensor	Remove the driver seat occupancy sensor from the original vehicle, install a driver seat occupancy sensor in good condition, and confirm whether it works normally. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check relevant circuit or connector of driver seat occupancy sensor	A. Check whether the relevant harness connector is loose. If there are such signs: after repair / replacement, confirm whether the fault symptoms disappear. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the driver seat occupancy sensor and check whether the power supply and grounding of the occupancy sensor are normal. If it is abnormal: repair / replace relevant circuits, and confirm whether the fault symptoms disappear after repair / replacement. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the driver seat occupancy sensor and BCM harness connector, check the continuity of pin pin corresponding to the connector, and check whether there is short circuit to ground or power. If there is such an indication: repair / replace the relevant circuit, and confirm whether the fault symptoms disappear after repair / replacement. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the body control module	After the BCM refreshes, confirm whether the hazard warning lamp works normally. If it works normally, the diagnosis ends; If it is still abnormal, replace the BCM .

Reference Information	
Circuit diagram	Body control module

Driver Information and Entertainment System

On-board Telephone, Entertainment and Navigation System

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Failure to Start Up, Function Failure	Appearance
	Fuse
	Entertainment Panel Switch
	Related Circuits or Connectors of Entertainment Panel Switch
	Related Circuits or Connectors of Entertainment Mainframe
	Entertainment Mainframe
No or Unclear Sound During Multimedia Playing or Radio Working (with normal display, operation, multimedia playing or radio station search)	Speaker(s)
	Entertainment Mainframe
Poor or No Radio Signal Received and Radio Station Search Unavailable	Radio Signal in the Workplace
	Entertainment Mainframe
	Antenna Amplifier
	Antenna Coil
Poor or No GPS Signal Received	GPS Signal in the Workplace
	Communication Module Antenna
	Entertainment Mainframe
Display Error or No Display	Entertainment Mainframe
Bluetooth Connection Failure	Entertainment Mainframe Bluetooth Setting
	Mobile Phone Bluetooth Setting
	Entertainment Mainframe
Unable to Hear Each Other When Talking on the On-board Telephone	Mobile phone
	Speaker(s)
	Entertainment Mainframe
The Other Side Cannot Hear You When Talking on the On-board Telephone	Entertainment Mainframe Settings
	Microphone
	Entertainment Mainframe
	Mobile phone

Failure to Start Up, Function Failure

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for obvious damage, etc. If yes: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the entertainment mainframe fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the entertainment panel switch	Remove the original entertainment panel switch from the vehicle, fit a new good one and confirm if it can work properly. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check related circuits or connectors of the entertainment panel switch	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the entertainment panel switch harness connector from the FICM, check the conductivity of the corresponding Pin of connector, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

5. Check related circuits or connectors of the entertainment mainframe	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the harness connector of the entertainment mainframe and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check entertainment mainframe	After replacing the entertainment mainframe with a new good one, confirm if it can work normally. If yes, diagnosis is completed; if still not, check for other possible causes.

Reference Information	
Circuit Diagram	Entertainment System - Entertainment Mainframe

No or Unclear Sound During Multimedia Playing or Radio Working (with normal display, operation, multimedia playing or radio station search)

Test Condition	Detail/Result/Action
1. Check speakers	Place the ignition switch in "ACC" or "ON" position, turn on the entertainment mainframe, set all the sound channel output, cancel the mute function, enter the playing state, to check if all speakers are not working. If all speakers are not working, the cause might be the entertainment mainframe failure. If one or more (not all) speaker(s) cannot work, replace the speaker with a good one; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check entertainment mainframe	After replacing the entertainment mainframe with a new good one, confirm if it can sound normally. If yes, diagnosis is completed; if not, check for other possible causes.

Poor or No Radio Signal Received and Radio Station Search Unavailable

Test Condition	Detail/Result/Action
1. Check the radio signal in the workplace	Move the vehicle to a suitable place away from magnetic fields, underground garages or tunnels. Try to search the radio station, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check entertainment mainframe	Check the entertainment mainframe for damage. If yes: replace the entertainment mainframe; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the antenna amplifier	Check the antenna amplifier for damage. If yes: replace the antenna amplifier; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the antenna coil	After replacing the antenna coil with a new good one, confirm if the radio can work normally. If yes, diagnosis is completed; if still not, check for other possible causes.

Poor or No GPS Signal Received

Test Condition	Detail/Result/Action
1. Check the GPS signal in the workplace	Move the vehicle to a suitable place away from magnetic fields, underground garages or tunnels. Try to search the GPS signal, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the communication module antenna	Check the communication module antenna for damage. If yes: replace the communication module antenna; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check entertainment mainframe	After replacing the entertainment mainframe with a new good one, confirm if the GPS signal can be received normally. If yes, diagnosis is completed; if still not, check for other possible causes.

Display Error or No Display

Test Condition	Detail/Result/Action
1. Check entertainment mainframe	After replacing the entertainment mainframe with a new good one, confirm if the display can work normally. If yes, diagnosis is completed; if still not, check for other possible causes.

Bluetooth Connection Failure

Test Condition	Detail/Result/Action
1. Check the entertainment mainframe Bluetooth settings	Check if the Bluetooth functions of the entertainment mainframe can be enabled; if the Bluetooth functions can be enabled properly, try to carry out a Bluetooth connection with the mobile phone. Confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the mobile phone Bluetooth settings	Check if the Bluetooth functions of the mobile phone can be enabled; if the Bluetooth functions can be enabled properly, try to carry out a Bluetooth connection with the entertainment mainframe. Confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check entertainment mainframe	After replacing the entertainment mainframe with a new good one, confirm if the Bluetooth can be connected normally. If yes, diagnosis is completed; if still not, check for other possible causes.

The Other Side Cannot Hear You When Talking on the On-board Telephone

Test Condition	Detail/Result/Action
1. Check the entertainment mainframe settings	Check if the entertainment mainframe is set to "Mute". After canceling "Mute", confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2.Check the microphone	Check the microphone for damage. If yes: replace the microphone with a good one; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check entertainment mainframe	Check the entertainment mainframe for damage. After replacing the entertainment mainframe with a good one, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the mobile phone	Check the mobile phone for any failure, troubleshoot it and then confirm if the talk on the on-board mobile phone is normal. If yes, diagnosis is completed; if still not, check for other possible causes.

Unable to Hear Each Other When Talking on the On-board Telephone

Test Condition	Detail/Result/Action
1. Check the mobile phone	Check if the mobile phone is on mute or has any failure; after troubleshooting it and then confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check speakers	Check if one or more (not all) speaker(s) cannot work. If yes: replace the speaker with a good one; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check entertainment mainframe	After replacing the entertainment mainframe with a new good one, confirm if the talk on the on-board telephone is normal. If yes, diagnosis is completed; if still not, check for other possible causes.

Display and Gauge

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Instrument Pack Blank Screen/All Indicator Lamps Off	Appearance
	Fuse
	Related Circuits or Connectors of the IPK
	Instrument Pack
Speedometer Indicating Improperly	Instrument Pack Software
	Related Circuits or Connectors of the IPK
	Instrument Pack
	Dynamic Stability Control Module
	Gateway
Power Meter Indicating Improperly	Instrument Pack Parameter
	Instrument Pack Software
	Related Circuits or Connectors of the IPK
	Instrument Pack
	PEB
	Gateway
Electricity Meter Indicating Improperly	Instrument Pack Parameter
	Instrument Pack Software
	Related Circuits or Connectors of the IPK
	Instrument Pack
	BMS
	Gateway

Instrument Pack Blank Screen/All Indicator Lamps Off

Test Condition	Detail/Result/Action
1. Check the appearance	Check the exterior components for obvious damage, etc. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check fuses	Check the instrument pack fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the instrument pack	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the instrument pack harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the instrument pack	After the IPK software is flashed, confirm if the instrument pack can work normally. If yes, diagnosis is completed; if still not, replace the IPK.

Reference Information	
Circuit Diagram	Instrument Pack

Speedometer Indicating Improperly

Test Condition	Detail/Result/Action
1. Check the instrument pack software	After flashing IPK software, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the instrument pack	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the IPK harness connector from the gateway, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step C. C. Disconnect the SCS harness connector from the gateway, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the instrument pack	Remove the original IPK from the vehicle, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the dynamic stability control module	Check the dynamic stability control module for damage. If yes: replace the dynamic stability control module; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the gateway	After replacing the gateway with a new good one, confirm if the symptom disappears. If yes, diagnosis is completed; if not, check for other possible causes.

Reference Information	
Circuit Diagram	Data Communication - Information HS CAN
	Data Communication - Chassis HS CAN

Power Meter Indicating Improperly

Test Condition	Detail/Result/Action
1. Check the instrument pack parameters	A. Place the start switch in "ON" position, use the scan tool to carry out scan tests on all instruments, and confirm the power meter is scanned from the low to high. • If the instrument cannot be scanned → Replace the instrument pack. Check again whether the failure is excluded after replacement. If not, go to Step B. • If the instrument can be scanned normally → Go to Step B. B. Start the vehicle, and confirm if the value on the power meter matches the vehicle speed parameter on the scan tool. • No → Replace the instrument pack. Check again whether the failure is excluded after replacement. If not, go to Step 2. • Yes → Go to Step 2.
2. Check the instrument pack software	After flashing IPK software, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the instrument pack	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the IPK harness connector from the gateway, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the instrument pack	Remove the original IPK from the vehicle, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.

5. Check the PEB	Check the PEB for damage. If yes: replace the PEB; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the gateway	After replacing the gateway with a new good one, confirm if the symptom disappears. If yes, diagnosis is completed; if not, check for other possible causes.

Reference Information	
Circuit Diagram	Data Communication - Information HS CAN

Electricity Meter Indicating Improperly

Test Condition	Detail/Result/Action
1. Check the instrument pack parameters	Start the vehicle, and confirm if the value on the electricity meter matches with the parameter on the scan tool. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the instrument pack software	After flashing IPK software, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check related circuits or connectors of the instrument pack	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the IPK harness connector from the gateway, check the conductivity of the corresponding Pin of signal line, and check for short to ground or battery. If yes: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the instrument pack	Remove the original IPK from the vehicle, fit a new good one, and confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the BMS	Check the BMS for damage. If yes: replace the BMS; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 6.
6. Check the gateway	After replacing the gateway with a new good one, confirm if the symptom disappears. If yes, diagnosis is completed; if not, check for other possible causes.

Reference Information	
Circuit Diagram	Data Communication - Information HS CAN

Power and Signal Distribution

Data Communication

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
No Power Supplied to Scan Tool	Fuse
	Related Circuits or Connectors of the Diagnosis Port
Scan Tool Cannot Communicate with Bus	Scan Tool
	Gateway
	Terminal Resistance

No Power Supplied to Scan Tool

Test Condition	Detail/Result/Action
1. Check fuses	Check the diagnosis port fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check related circuits or connectors of the diagnosis port	A. Check related harness connectors for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Disconnect the diagnosis port harness connector and check if the power supply and the ground are normal. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Reference Information	
Circuit Diagram	BUS System-Diagnostic Line Connector

Scan Tool Cannot Communicate with Bus

Test Condition	Detail/Result/Action
1. Check the scan tool	Check the scan tool for damage. If yes: replace the scan tool; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the gateway	Check the gateway for damage. If yes: replace the gateway; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check the terminal resistance	Check if the terminal resistance is normal; replace it with a new good one when necessary, and confirm if the symptom disappears. If yes, diagnosis is completed; if not, check for other possible causes.

Reference Information	
Circuit Diagram	BUS System-Diagnostic Line Connector

Combined Charging Unit (CCU)

Symptom Table

If a failure occurs while the related control module does not store the DTC, and the cause of the failure cannot be determined by visual inspection, then carry out the diagnosis and troubleshooting according to the possible causes listed in the table below.

Symptom	Possible Faulty Parts
Fluid Leak	External Cooling Pipeline of the Combined Charging Unit (CCU)
Low-voltage Battery Feed	Appearance
	CCU External Cooling Pipeline
	Fuse
	Related Harness of CCU to the Battery
	Combined Charging Unit (CCU)
High Voltage Interlock (HVIL) Signal Lost, High Voltage Power Cannot be Supplied to Vehicle	CUU High-voltage Harness Connector
	CUU High-voltage Harness Connector Internal Interlock Circuit
	Combined Charging Unit (CCU)

Fluid Leak

Test Condition	Detail/Result/Action
1. Check the external cooling pipeline of the CCU	Check if the water inlet/outlet pipe of the coolant and clamps are damaged. If yes: replace the external cooling pipeline; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.

Low-voltage Battery Feed

Test Condition	Detail/Result/Action
1. Check the appearance	Check if the exterior components for any obvious signs of being damaged or aging. If abnormal: replace the related parts; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the CCU external cooling pipeline	Check if the water inlet/outlet pipe of the coolant and clamps are damaged. If yes: replace the external cooling pipeline; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 3.
3. Check fuses	Check the CCU fuse for damage. If yes: replace the fuse; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 4.
4. Check the related harness of CCU to the battery	A. Check the fasteners of related harnesses of CCU - fuse box - battery for looseness. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step B. B. Release the fasteners, disconnect both ends of related harnesses and check the conductivity of the corresponding harness. If not: repair/replace the related circuits; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 5.
5. Check the CCU	Check if the CCU is abnormal. If yes: repair/replace the CCU; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other causes.

Reference Information	
Circuit Diagram	Power Mode

High Voltage Interlock (HVIL) Signal Lost, High Voltage Power Cannot be Supplied to Vehicle

Test Condition	Detail/Result/Action
1. Check the CUU high-voltage harness connectors	Disconnect the manual service disconnect (MSD), and check related harnesses and connectors of CCU high-voltage circuits for aging, breakage, poor contact or deformation of PINs. If yes: after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Go to Step 2.
2. Check the CCU high-voltage harness connector internal interlock circuit	A. Remove the MSD, disconnect the CUU high-voltage harness connector and connect the internal low voltage interlock terminals. B. Fit the MSD, enable the start switch and confirm if the vehicle is powered to the high voltage. • Yes → Repair/Replace the CCU high-voltage harness connector/high-voltage harness. • No → Go to Step 3.
3. Check the CCU	Check if the CCU is abnormal. If yes: repair/replace the CCU; after the repair/replacement, confirm if the symptom disappears. • Yes → Diagnosis is completed. • No → Check for other possible causes.