MAINTENANCE MANUAL

10k ELECTRICAL UTILITY VEHICLE(UTV)

KANDI COWBOY

Dual Motors|EPS

10K

PREFACE

Thank you for choosing Kandi Electric Utility Vehicle.

1. This user's manual will provide the driver with information about safe operation instructions, maintenance and service.
2. Fully understanding this manual, complying with all the instructions and understanding the necessary knowledge in this manual will provide you with a happy, interesting and safe driving.
3. For the driving and maintenance questions about this electric utility vehicle, please contact your dealer or manufacturer.

USER NOTICE!

Minors under the age of 16 or seniors over the age of 60 are not allowed to drive this electric utility vehicle! Not all people have the strength, appropriate age, skill and judgment to drive this electric utility vehicle.

Electric utility vehicle are not toys, and they are dangerous when driving.
Electric utility vehicle are different from other vehicles, such as motorcycles and cars.

Even during everyday driving, cornering and driving over obstacles can result in a crash or rollover.

Read this user or operator manual!

1. Owners and all drivers of electric utility vehicle should carefully read this manual from beginning to end.
2. No one is allowed to drive this blade electric utility vehicle without reading and understanding the user's manual.
3. This manual is an integral part of the blade electric utility vehicle. Please always carry it with you. When the utility vehicle is sold, this manual shall be delivered together.

TABLE OF CONTHNT

I. PAD

1.1 Specifications and parameters

1.1. PAD specification and parameters

Parameter Name	Value or range
Voltage range	9~16V
Working temperature	-41℉~+122℉
Storage temperature	-68℉~+158℉
Dust and waterproof	IP67
Relative humidity	(No condensation)

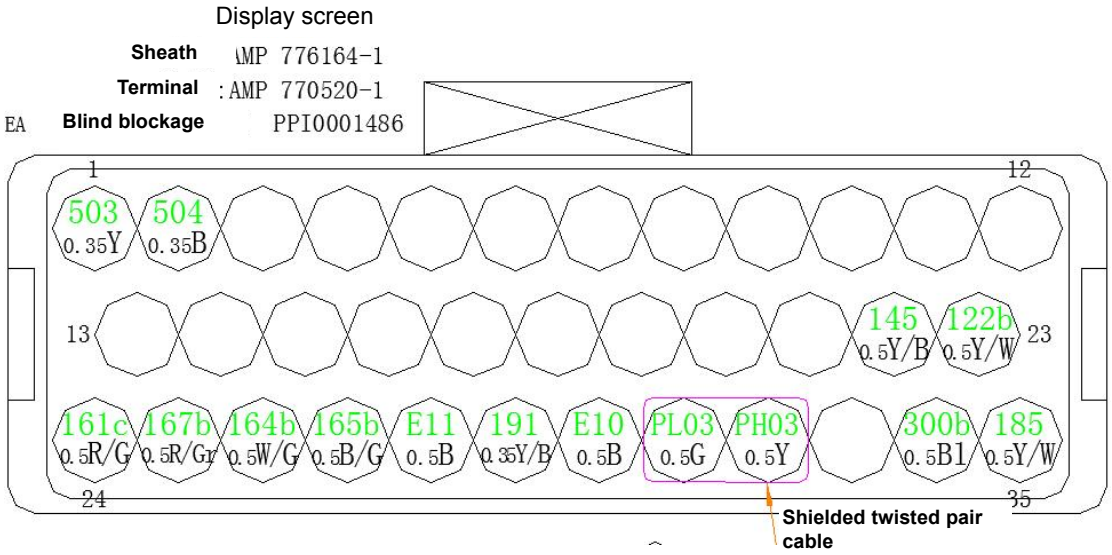
11.2 Fastener specifications

Item	Specifications	Torque (N • m)
Cross recessed pan head screw	M3×8	10±2

1.1.3 Component installation diagram

Insert the PAD into the thermoforming part from the bottom and secure it with 5 M3 * 8 cross recessed pan head screws.

1.1.4 Definition of connectors

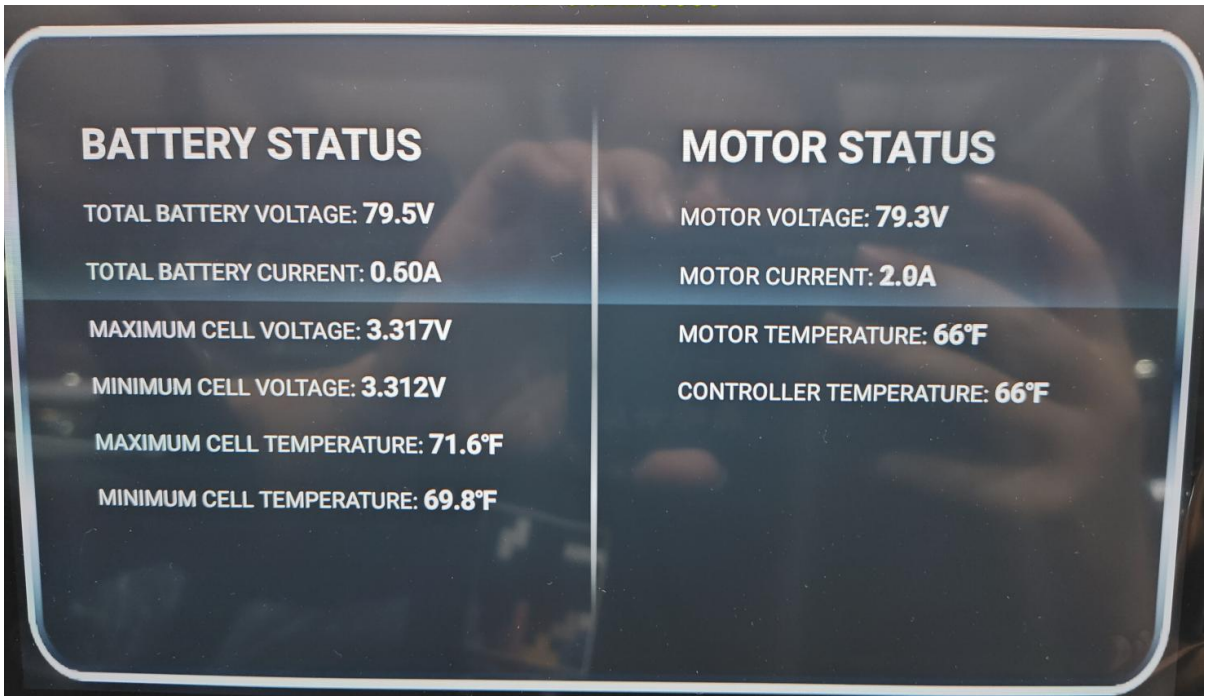


Pin	Definition	Pin	Definition	Pin	Definition
1	Video_IN	25	High beam lights	30	+12V_GND
2	Video_GND	26	Right turn signal	31	CAN_L
22	Brake lights	27	Left turn signal	32	CAN_H
23	Reverse lights	28	LED_GND	34	+12V
24	Low beam lights	29	Camera power supply _GND	35	ACC

1.1.5 PAD interface

1.1.5.1 Main interface

1.1.5.1 Parameter interface



1.1.6 Fault Code Table

Serial No.	Fault codes	Fault name	Phenomena	Fault handling methods
1	P221E	Motor over temperature alarm	Motor temperature ranges from 329 ℉ to 356 ℉, with each mode decreasing from maximum acceleration current to 0A; Phase current decreases linearly from maximum to 0A	1. After waiting for a period of time (not less than 30 minutes), power on again. If the vehicle becomes normal, no maintenance is required. 2. After waiting for a period of time (not less than 30 minutes), power on again. If the instrument still shows the fault, check if there is any abnormality in the motor temperature sensor. If there is no abnormality, record the information and contact professional personnel for repair;
2	P231E		The vehicle is unable to move;	
3	P221F	Controller over temperature alarm	Controller temperature from 167 ℉ to 189.5 ℉, phase current linearly decreases from maximum to 0	1. After waiting for a period of time (not less than 20 minutes), power on again. If the vehicle becomes normal, no maintenance is required. 2. Stop the machine and wait for a period of time (not less than 20 minutes) before powering on again. If the instrument still shows the fault, replace the MCU.
4	P231F		The vehicle is unable to move	
5	P2220	Hardware overcurrent fault	The vehicle is unable to move	Replace the motor controller
6	P2221	Software overcurrent fault	The vehicle is unable to move	Check if the motor U, V, and W three-phase wires are damaged, and repair them if they are

				damaged.
7	P2222	Motor rotation failure	The vehicle is unable to move	Check the wiring harness of the motor encoder. If there are no abnormalities in the wiring harness and the fault still exists after restarting the vehicle, replace the motor.
8	P2223	Current sampling circuit fault	The vehicle is unable to move	MCU has hardware failure, replace motor controller
9	P3224	Motor encoder malfunction	The vehicle is unable to move	Replace the motor encoder
10	P2225	MCU DC input terminal overvoltage alarm	The vehicle is unable to move	1.If other nodes also report first level faults in the power system, priority should be given to troubleshooting potential issues in other subsystems and high-voltage power supply circuits; 2.If the voltage between B+and B - is higher than 90V, it is necessary to check the front control circuit of B+and B -; 3 If both 1 and 2 have not occurred, record the information and contact professional personnel for repair.
11	P2226	MCU DC input terminal undervoltage alarm	The vehicle is unable to move	1.If other nodes also report first level faults in the power system, priority should be given to troubleshooting potential issues in other subsystems and high-voltage power supply circuits; 2.If the voltage between B+and B - is higher than 50V, it is necessary to check the front control circuit of B+and B -; 3 If both 1 and 2 have not occurred, record the information and contact professional personnel for repair.
12	P2227	CAN communication failure	The vehicle is unable to move	1.If the power is restored and the vehicle returns to normal, there is no need to dispatch workers. 2.If the vehicle cannot be restored to normal after being powered on again, the following methods should be followed for handling: (1) If other nodes also report a communication loss fault with the power battery, priority should be given to troubleshooting the power battery or circuit problems. (2) Otherwise, it may be a hardware failure of the MCU, and the MCU needs to be replaced.
13	P2228	Motor overspeed alarm	The vehicle is unable to move	1.If the power is restored and the vehicle is restored, professional maintenance is not

				required; 2.If the fault reoccurs after re powering on, professional maintenance is required.
14	P2229	Temperature sensor malfunction	The vehicle is unable to move	1. Check if the plug-in of the motor temperature sensor is connected, loose or damaged, and repair the faulty point; 2. It is possible that the MCU temperature sensor has malfunctioned, replace the MCU.
15	P1270	Charger hardware failure	Unable to charge	Replace the charger
16	P1271	Charger over temperature fault	Unable to charge	1. After waiting for a period of time (not less than 30 minutes), power on again. If the vehicle becomes normal, no maintenance is required. 2. Stop the machine and wait for a period of time (not less than 30 minutes) before powering on again. If the instrument still shows the fault, replace the charger.
17	P1272	Charger input voltage fault	Unable to charge	AC voltage is too low or too high, resulting in inability to charge.
18	P1273	Charger startup error	Unable to charge	1.If the power is restored and the vehicle is restored, professional maintenance is not required; 2.If the fault reoccurs after re powering on, professional maintenance is required.
19	P1274	Charger communication error	Unable to charge	Check if the CAN communication harness is loose or damaged, and repair the fault.
20	P6250	TBOX hardware failure	Steering wheel unable to automatically return to center	Replace with a new EPS
21	P525A	GPS antenna malfunction	/	Replace with a new TBOX
22	P525B	GPS module malfunction	/	
23	P525C	TBOX battery power supply voltage high alarm	/	Replace with a new TBOX
24	P525D	TBOX battery supply voltage low alarm	/	
25	P525E	TBOX internal battery aging alarm	/	

26	P525F	TBOX internal battery disconnection alarm	/	
27	P5260	TBOX communication module malfunction	/	Check if the communication port is connected properly, and check if the device, antenna connection, SIM card service status, etc. are normal.
28	P5261	SIM card not recognized	/	Check SIM card service status

11.7 Fault symptom table

Fault phenomenon	Cause analysis	Troubleshooting method
Vehicle has no READY	Possibly caused by malfunction of other modules	1. Observe the detailed information interface of the PAD to check for battery data and module alarms. If there is no battery data, check the battery first. If there is an alarm, analyze the alarm first.
	Maybe the controller doesn't have high voltage	1. Use a multimeter to measure whether there is 72V voltage of controller B+and B - . 2. Check if the power battery plug (pin 101 of the main battery) has a loose pin, and use a multimeter to measure if there is a 12V+output. 3. Remove the high-voltage box plug and observe if pin 1 (101 wire) has a pin retraction. Use a multimeter to measure if there is a 12V+output.
	Perhaps the controller does not have an ACC signal	1. Unplug the front controller plug-in and observe if the pins have retracted. 2. Use a multimeter to measure whether there is 72V voltage on pin 12 of the controller. If not, measure if there is 72V on pin 87 of the switch relay on the fuse box.
	Maybe there is loss of controller program.	1. Upgrade the program of the front controller
No gear signal	Maybe there is a pin retraction of the front controller plugin.	1. Unplug the front controller plug-in and observe if the pins have retracted.
	Maybe there is a brake pressure switch malfunction.	1. Step on the brake and observe if the brake lights are working. 2. Check if the wiring harness connection is normal, whether the wiring harness connection is loose, and whether the wiring harness is damaged. 1. 3. Step on the brake and measure whether the brake switch plug-in is conductive.

	Maybe there is gear switch pin retraction.	1. Check if the wiring harness connection is normal and if there is any damage to the wiring harness.
	Maybe there is a gear relay damage.	1. Check if the wiring harness connection is normal and if there is any damage to the wiring harness. 2. Measure whether there is 72V on pins 30 and 87 of the key gear relay on the fuse box. If there is no 72V on pin 87, replace the gear relay.
	Maybe there is loss of controller program.	1. Upgrade the program of the front controller
The light is not on.	Maybe the fuse is burnt out.	1. Check if the fuse is damaged
	Maybe there is a pin retraction in the rocker switch.	1. Check if the rocker switch has retracted the pin
SOC is 0	Maybe there is a battery connection problem.	1. Check the battery detailed information on the PAD to see if there is 72V voltage. If not, it indicates that one box of batteries is missing and the SOC calibration is 0%.
	Maybe there is a power battery communication failure.	1. Check if the wiring harness connection is normal and if there is any damage to the wiring harness.
PAD has no battery data.	Maybe the fuse is damaged.	1. Check if the battery fuse is damaged.
	Maybe it hasn't received the ACC signal.	1. Check if there is 12V+voltage on pin C (113 wire) of the main battery.
	Maybe there is a pin retraction in the battery plug.	1. Check if the low-voltage plug-in of the main battery has any pin retraction.

II. Power battery

2.1 Specifications

The specification of the lithium-ion power battery pack (hereinafter referred to as the battery pack) is KD25150H, which is used in series with three boxes of batteries in the entire vehicle.

2.2 Safety requirements for battery pack operation

2.2.1 Before disassembling the battery pack, please wear insulated protective gloves;

2.2.2 It is prohibited to short circuit or contact the positive and negative poles of the battery pack with metal or conductive objects during disassembly and assembly;

2.2.3 It is prohibited to immerse the battery pack in water or other conductive liquids;

2.2.4 It is prohibited to mix battery packs with other models of battery packs;

2.2.5 When disassembling and transporting battery packs, handle them gently and strictly prevent them from falling, rolling, and heavy pressure;

2.2.6 During disassembly and assembly of the battery pack, it is prohibited to touch the positive and negative terminals of the battery pack with both hands simultaneously;

2.2.7 It is prohibited to invert, place on its side or tap the battery pack;

2.2.8 The working area should be under good environment and be equipped with fire blankets, fire extinguishers, or fire sand;

2.2.9 Please operate according to the disassembly and assembly requirements of the battery pack;

2.3 Storage requirements for battery packs

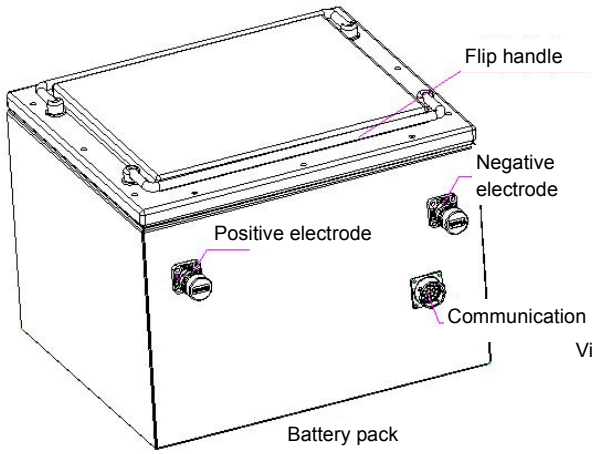
2.3.1 The battery pack should be stored in a dry, clean, and well ventilated warehouse;

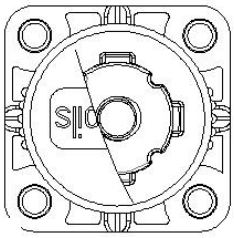
2.3.2 The storage environment temperature of the battery pack is -50 ℉~95 ℉, and the ambient humidity is 15%~90%;

2.3.3 The battery pack capacity should be maintained at 70% or above for long-term storage;

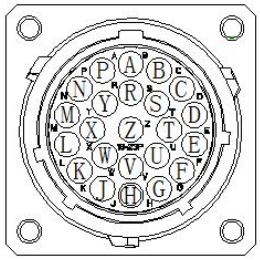
2.4 Battery pack installation requirements

2.4.1 Appearance of battery pack



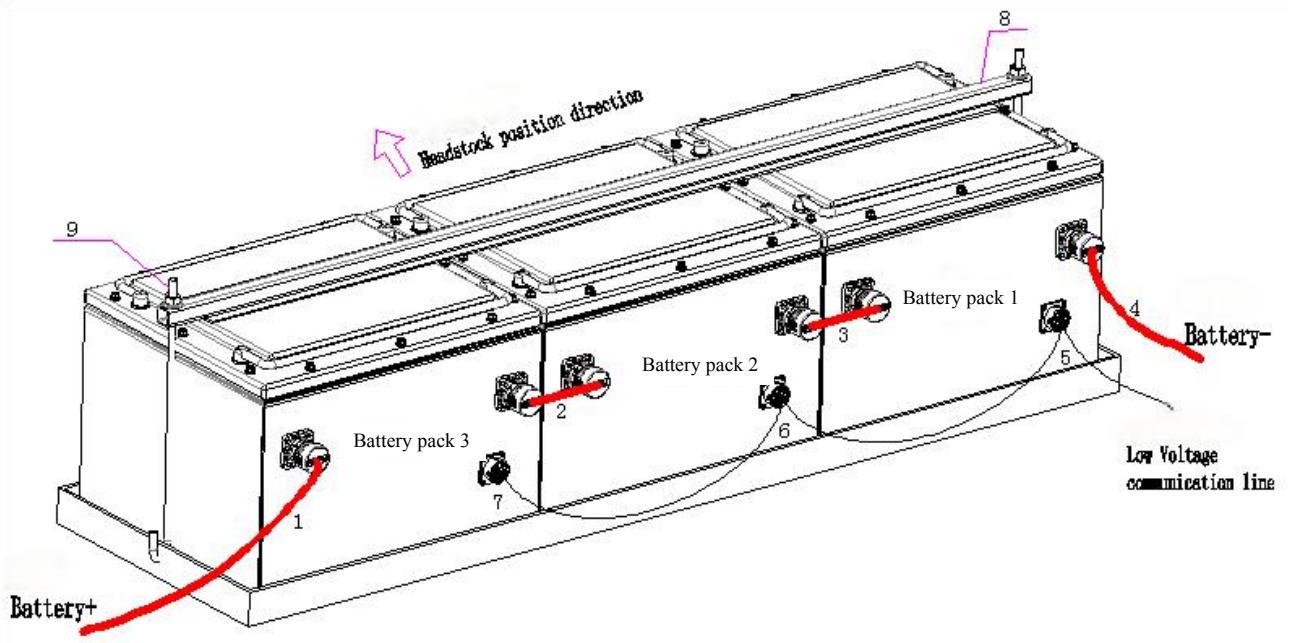


View of positive/negative connection
Matching bolt: M8 * 16 flat spring washer combination bolt
Installation torque: 3.5-4.5N. m



Communication connector view

2.4.2 Battery pack disassembly requirements



Battery pack installation related components		Installation requirements:	Disassembly requirements:
1	Total positive and high voltage power line	Step 1: Place battery pack 1 and battery pack 2 on the vehicle battery tray and move them to the farthest edge. Finally, place battery pack 3 on the vehicle battery tray; Step 2: Install the total positive and negative high-voltage power lines onto the battery pack first, and then install the series high-voltage power lines onto the battery pack; Step 3: Connect the communication plugs of battery pack 1, battery pack 2, and battery pack 3 respectively; Step 4: Finally, install the battery pack hook and pressure bar;	Step 1: Remove the battery pack hook and pressure bar; Step 2: Remove the communication plugs of battery pack 1, battery pack 2, and battery pack 3 respectively; Step 3: Remove the series power line first, and then remove the total positive and high voltage power lines and the total negative high voltage power lines; Step 4: First, remove battery pack 2 from the vehicle battery push frame, and then remove battery pack 3 and battery pack 1;
2/3	Series high-voltage power lines		
4	Total negative high-voltage power lines		
5	Battery pack 1 communication plug		
6	Battery pack 2 communication plug		
7	Battery pack 3 communication plug		
8	Pressure bar		
9	Battery pack hook		

2.5 Battery Fault Code Table and Common Troubleshooting

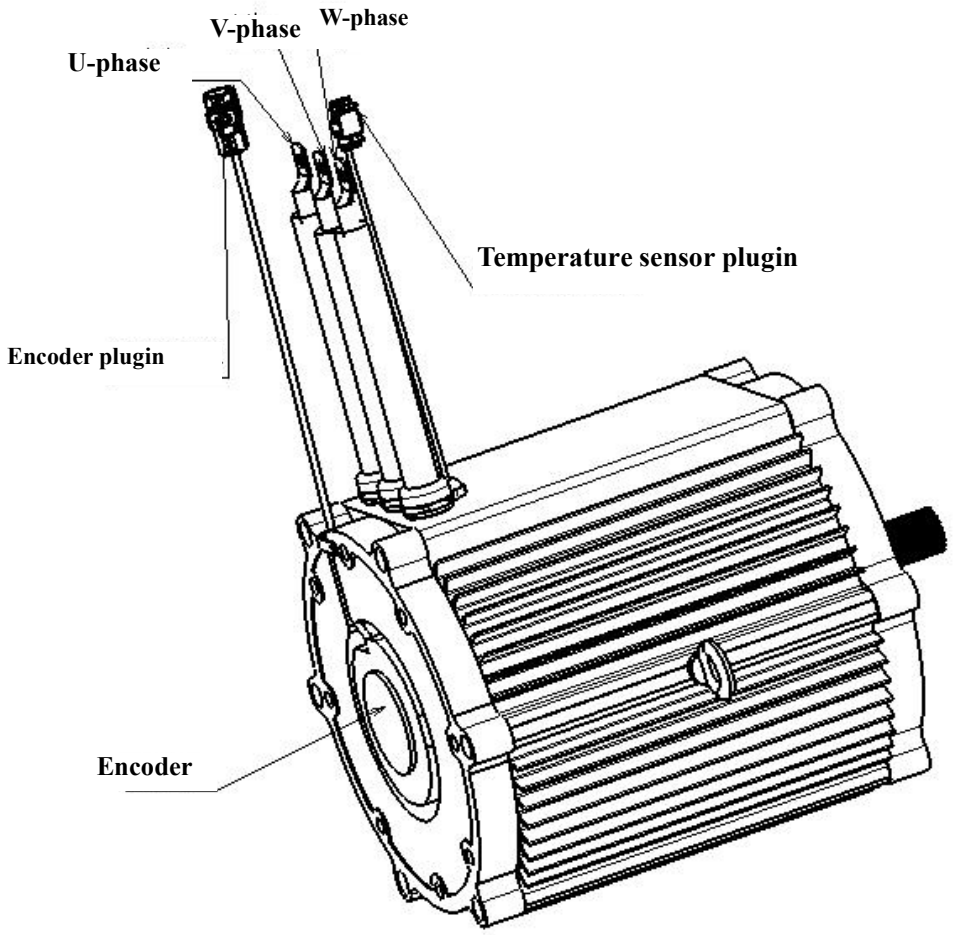
Serial No.	Fault name	Fault codes	The phenomenon of the entire vehicle after the fault code appears	Fault handling methods
1	Single unit overvoltage level 3 alarm	P3301	Unable to charge and disconnect the main positive relay when inserting the	Driving vehicles discharge the battery

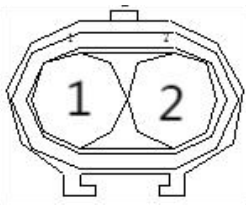
			gun	pack
2	Total voltage overvoltage level 3 alarm	P3304	Unable to charge and disconnect the main positive relay when inserting the gun	Driving vehicles discharge the battery pack
3	Single unit undervoltage level 2 alarm	P3202	Possible speed limit for whole driving.	Connect the entire vehicle to the charging gun for charging.
4	Single unit undervoltage level 3 alarm	P3302	Driving speed limit may trigger disconnection of the main positive relay.	Connect the entire vehicle to the charging gun for charging.
5	Total voltage undervoltage level 2 alarm	P3205	Driving may have speed limits.	Connect the entire vehicle to the charging gun for charging.
6	Total voltage undervoltage level 3 alarm	P3305	Driving speed limit may trigger disconnection of the main positive relay.	Connect the entire vehicle to the charging gun for charging.
7	Cell high temperature level 2 alarm	P3206	Unable to charge when inserting the gun	Let the battery pack stand for 2 hours
8	Cell high temperature level 3 alarm	P3306	Unable to charge and disconnect the main positive relay when inserting the gun Driving speed limit may trigger disconnection of the main positive relay	The battery pack should be left to stand for 2 hours and next time turn on the ON gear or connect the charging gun.
9	Low temperature level 2 alarm for battery cells	P3207	Driving has speed limits.	Driving or charging with a charging gun (heating mode)
10	Cell temperature difference level 2 alarm	P3208	None	Stop the vehicle
11	Discharge current exceeding limit level 2 alarm	P3209	None	Stop the vehicle
12	Discharge current exceeding limit level 3 alarm	P3309	None	Stop the vehicle
13	Charging current exceeding limit level 2 alarm	P320A	None	Stop the vehicle
14	Charging current exceeding limit level 3 alarm	P330A	None	Stop the vehicle
15	Current sensor level 2 fault	P320B	Unable to charge and disconnect the main positive relay when inserting the gun	Check the current sensor

			Driving speed limit may trigger disconnection of the main positive relay	
16	Low battery SOC level 2 alarm	P320F	Driving has speed limits.	Connect the entire vehicle to the charging gun for charging
17	Low driving insulation level 2 alarm	P3210	None	Check the insulation of batteries or other electrical appliances
18	Low driving insulation level 3 alarm	P3310	Unable to charge and disconnect the main positive relay when inserting the gun Driving speed limit may trigger disconnection of the main positive relay	Check the insulation of batteries or other electrical appliances
19	Low charging insulation level 3 alarm	P3317	Unable to charge and disconnect the main positive relay when inserting the gun	Check the insulation of batteries or other electrical appliances
20	Internal communication level 3 alarm	P3318	Unable to charge and disconnect the main positive relay when inserting the gun; Driving triggers disconnection of the main positive relay.	Check the communication line between battery packs

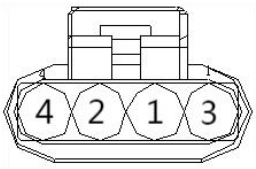
III. Drive motor and its controller system

3.1 Introduction to the Outline Drawing and Wiring Points of the Drive Motor





Motor encoder plugin
AMP 282088-1



Temperature sensor plugin
DJ8021Y-1.8-11

Component	Pin	Pin Definition	Pin	Pin Definition
Motor encoder plugin	1	Power +	2	Signal A
	3	Signal B	4	Power -
Temperature sensor	1	Negative	2	Positive

3.2 Drive motor wiring

The three-phase AC lines of motor U, V, and W are connected to the corresponding U, V, and W of the motor controller with bolts. According to the torque requirement of 15-17 N · M, the motor encoder plugin and temperature sensor plugin need to be connected to the corresponding plugin on the front cabin harness.

3.3 Specification of Drive Motor Fasteners

Fastener name	Specification	Torque(N·m)
Bolt (motor right bracket to motor)	M10×40	50～60
Bolt (motor and reducer assembly)	M8×45	25～35

3.4 Diagnostic information and steps for the drive motor

Symptoms	Suspected components	Troubleshooting
Motor speed is slow, motor does not rotate.	1. If the connector between the motor encoder and the wiring harness is loose; 2. If the three-phase wire connecting the motor and controller is loose; 3. Encoder malfunction 4. Motor malfunction issue	1. Check if the connector between the motor encoder and the wiring harness is loose; 2. Check if the three-phase wire connecting the motor and controller is loose; 3. Replace the motor encoder; 4. Replace the motor
The motor shakes severely.	Motor encoder malfunction	Replace the motor encoder
Motor noise	Whether the motor bearings are damaged, whether the key sleeve is slipping, and whether the motor itself is faulty.	Replace the motor
Vehicle insulation alarm	Low insulation resistance of motor	Use a megger to test the motor for leakage. Check if the three-phase wire of the motor is damaged and replace the motor.

3.5 Dismantling and Installation of Drive Motor

3.5.1 Disassembly Procedure

3.5.1.1 Disassemble the motor assembly, use a lifting machine to support the motor, and then use a wrench to remove the bolts at the connection between the motor and the left bracket of the motor.

3.5.1.3 Use a wrench to remove the three fixing bolts that connecting the left bracket of the motor and the reducer assembly.

3.5.1.4 Finally, separate the motor from the reducer and remove it.

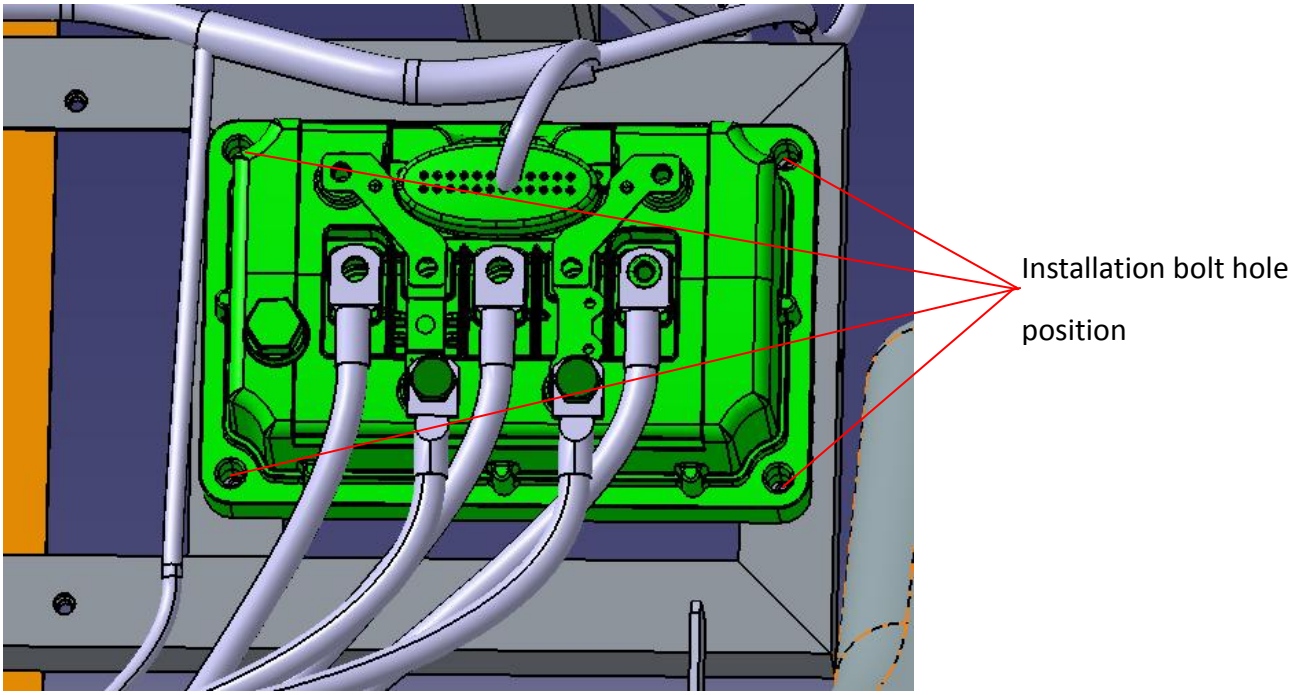
3.5.1.5 Use a lifting machine to lift the drive motor and match the drive motor splines with the gearbox.

3.5.1.6 Secure the front cover of the motor to the left bracket and tighten the bolts with a wrench.

3.5.1.7 Secure the right end cover of the drive motor and the gearbox assembly with the right bracket and tighten the bolts with a wrench.

3.6 Motor controller

3.6.1 Installation position of motor controller



When disassembling, cut off the battery power and wear insulated gloves for operation.

3.6.2 Wiring Definition

3.6.2.1 Technical parameters

Technical parameter		
Product specifications		3625
		72V
Electrical performance	Input voltage range (DC/V)	50-70
	Maximum output current (AC/A)	275
	Rated output current (AC/A)	50
	Controller startup voltage (DC/V)	20
	Rated output power (KW)	3/3.5

Working environment temperature range	-86℉-122℉
Protection level	IP65
Insulation performance	Input/output to casing DC 1000V leakage current 0.05mA, insulation resistance 20M Ω
Storage environment temperature range	-86℉-158℉
Efficiency	98%
Cooling method	Self cooling
Vibration standard	GB/T2423
Motor control methods	Vector control with speed sensor
Communication methods	CAN communication

3.6.2.2 The 24 pin signal connector is shown in the table below.

Pin serial No.	Pin Definition	Pin serial No.	Pin Definition
1	Reserved	13	Brake signal (72V)
2	Reserved	14	Reserved
3	Reserved DC12V+	15	Backward signal (72V)
4	Reserved	16	Forward signal (72V)
5	DC12V-	17	Acceleration signal
6	CANL	18	Accelerator switch signal
7	CANH	19	Accelerator 12V power supply+
8	Encoder power supply+	20	Accelerator 12V power supply-
9	Encoder power supply-	21	Motor temperature detection-
10	Encoder signal B	22	Motor temperature detection+
11	Encoder signal A	23	Reserved
12	Key switch output (72V)	24	Reserved

3.6.3 Terminal insertion and removal

3.6.3.1 The model of the 24 pin connector is C4201HF-2 * 12P. When inserting this plugin, it needs to be forcefully inserted until there is a locking sound. When pulling out, you need to manually pull up the tab of the plugin, and then pull out the plugin. Note: It is recommended to confirm whether the plug-in is properly connected and whether there is any pin retraction phenomenon during maintenance.

3.6.3.2 Drive outputs W, V, and U are connected to the motor's three phases of W, V, and U respectively. Bus+and Bus - are respectively connected to the main and auxiliary contactors in the high-voltage junction box. Note: M8 grounding bolts are used at seven locations, including B -, -, B+,+, U, V, and W, with a required installation torque of 15-17 N · M. Ensure reliable connection of high-voltage wiring harness. Ensure that the DC power of the power battery is supplied to the B+and B - connection points of the MCU through the high-voltage box/ Ensure that the three-phase AC connection wires of the drive motor are reliably connected to the corresponding connection points of the MCU.

3.6.4 Installation and fixing operation instructions

The controller is fixed to the motor controller mounting bracket using 4 M6 bolts with an installation torque of 8-10 N · M. When disassembling and assembling, it is necessary to use the No. 10 socket tool to remove and tighten the 4 fixing bolts at the bottom panel of the motor controller.

3.6.5 Drive system maintenance

3.6.5.1 Maintenance plan

◎Daily maintenance plan: Clean the drive motor and motor controller (need to be powered off), with a focus on cleaning the connection bolts and wire harness plugs. If obvious damage or cracks are found on the motor or controller casing during cleaning, please contact the manufacturer for replacement in a timely manner. Check if the high and low voltage harness connectors are connected reliably (power off is required). The tightening torque requirement for high-pressure bolts is 15-17 N · M to ensure that there is no shaking of the bolts when shaking the wiring harness of the controller. If the bolt rusts, please replace it in a timely manner. The bolt specification is M6 * 30 assembly. Check if the fuse on the controller is intact. If there is a black or melted fuse, please contact the manufacturer in a timely manner to replace the fuse. Check if there is any abnormal noise from the drive motor during vehicle operation: pay attention to distinguishing whether it is mechanical noise or electromagnetic noise. If it is electromagnetic noise, it can be left untreated temporarily.

◎Regular maintenance plan: Clean the drive motor and motor controller (need to be powered off), with a focus on cleaning the connection bolts and wire harness plugs. If obvious damage or cracks are found on the motor or controller casing during cleaning, please contact the manufacturer for replacement in a timely manner. Check if the high and low voltage harness connectors are connected reliably (power off is required). The tightening torque requirement for high-pressure bolts is 8-10 N · M to ensure that there is no shaking of the bolts when shaking the wiring harness of the controller. If the bolt rusts, please replace it in a timely manner. The bolt specification is M6 * 30

assembly. Check if the high and low voltage harness connectors are connected reliably (power off is required). The tightening torque requirement for high-pressure bolts is 10 N · M to ensure that there is no shaking of the bolts when shaking the wiring harness of the controller. If the bolt rusts, please replace it in a timely manner. The bolt specification is M6 * 20 assembly. Check if the fuse on the controller is intact. If there is a black or melted fuse, please contact the manufacturer in a timely manner to replace the fuse. Check if there is any abnormal noise from the drive motor during vehicle operation: pay attention to distinguishing whether it is mechanical noise or electromagnetic noise. If it is electromagnetic noise, it can be left untreated temporarily. Check whether the installation of the drive motor and motor controller is secure, and whether the fastening bolts are loose. Check the status of the drive motor and reducer splines. If there is oil loss on the surface of the splines, it is necessary to replenish them in a timely manner; (This operation can be performed once every 10000 to 20000 kilometers).

3.6.5.2 Precautions during maintenance:As the controller is a high-voltage live component, personnel should first ensure that the controller is powered off and wear safety gloves when performing a series of operations on the controller. The judgment method for powering off of the controller is to turn off the vehicle with key, turn off the instrument panel, and turn off the emergency stop switch of the vehicle. If possible, a multimeter can be used to test the voltage between B+and B - on the controller. If it is zero, it indicates that the controller has been powered off. Non professionals are prohibited from disassembling this controller.

3.7 Hall electronic throttle

3.7.1 Specifications and parameters

3.7.1.1Hall electronic throttle specifications and parameters

Parameter name	Value or range	Parameter name	Value or range
Rated voltage	12V	Working temperature	-68℉~+122℉
Output signal voltage	0V~4.7V±0.1V	Storage temperature	-104℉~+176℉
Switch signal voltage	0V~power supply voltage	Waterproof level	IP55

3.7.1.2 Fastener specification

Item	Specification	Torque(N•m)
Hexagonal flange bolt	M8×25	10±2

3.7.2 Common fault analysis

Fault: The vehicle does not move when the accelerator pedal is pressed.

Troubleshooting method: First, use a voltmeter to test the accelerator power supply voltage, and the voltage range should be within 10V-14V. If the power supply voltage is normal, press the accelerator pedal to the end (note: please shift the gear to neutral to avoid speeding), test the voltage value between the speed signal and the negative pole. The correct voltage range for stepping down is 4.6V-4.75V, and the switch signal and negative pole voltage value should be the same as the power supply voltage. If the switch signal and speed signal are both within the normal voltage range, it indicates that the accelerator is working properly. Please check the vehicle wiring and controller for any abnormalities. If the two signals are not within the voltage range mentioned above, it indicates that there is a problem with the accelerator. Please replace the accelerator.

3.7.3 Installation diagram

Hole positions for installing

Attention: Before removing the pedal, disconnect the pedal connector!

IV.Charging system

4.1 Charger Assembly

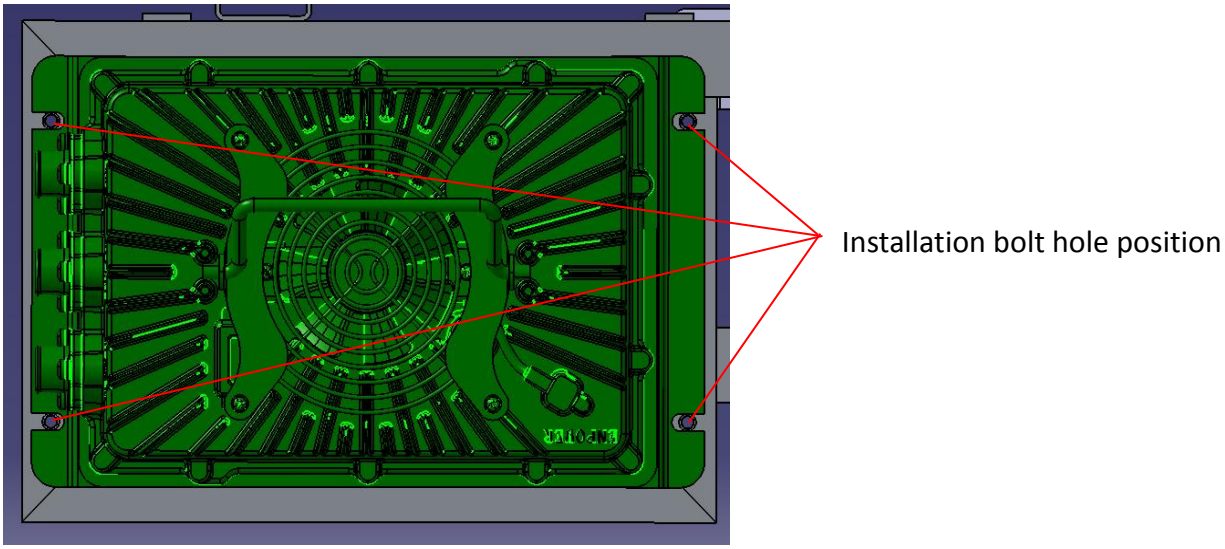
4.1.1 Charger specifications and parameters

Parameter name	Value or range	Parameter name	Value or range
Input voltage	85-265V	Working environment temperature	-77℉~+131℉
Power factor	≥0.99	Storage temperature	-104℉~+185℉
Input current	＜10A	IP level	IP66

4.1.2Fastener specifications

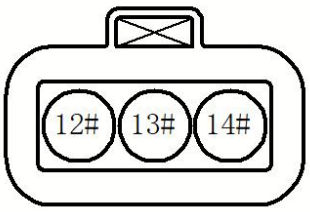
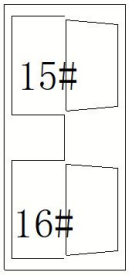
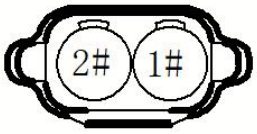
Item	Specification	Torque(N•m)
Hexagonal flange bolt	M6×16	10±2

4.1.3Component location diagram



4.1.4 Definition of connectors

Item	Connector model	Remarks

Input		12 #: Live wire 14 #: Zero line 13 #: Ground wire
Output		15 #: Negative electrode 16 #: Positive electrode
CAN communication		1#:CAN_H 2#:CAN_L
Note: The views of the sheath are all at the inlet end.		

4.1.5 Alarm information indication

	No.		Phenomenon
Alarm information indication	1	No battery connected	Red- green---
	2	Over temperature protection	Red- green- yellow---
	3	Input circuit fault protection	Red- green- yellow--yellow---
	4	Charging timeout	Red- green- yellow--yellow- yellow ---
	5	Battery Overheating	Red- green- yellow-yellow- yellow-yellow ---
	6	Pre charging timeout fault	Red- green- yellow-yellow- yellow-yellow - yellow ---
	7	Internal temperature sensor failure of charger	Red- green- yellow-yellow- yellow-yellow – yellow– yellow ---
	8	Output voltage feedback fault	Red- green- yellow-yellow- yellow-yellow – yellow– yellow-yellow ---

	9	When the internal temperature of the charger is below-86 ℉, the charger reports a low temperature fault. When the internal temperature rises to -77 ℉, the output is restored.	Red- green- yellow-yellow- yellow-yellow – yellow– yellow-yellow-yellow ---
	10	Output short circuit protection	Red- yellow---
	11	Battery temperature sensor malfunction	Green light for 3S, yellow light for 0.3S
Note: The identification method for the above information: "-" indicates that it does not light up for 0.5S, and a color word indicates that this color light is on for 0.2S.			

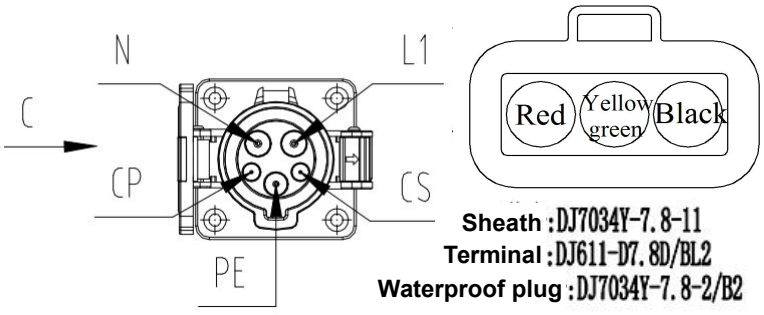
4.2Charging socket assembly

4.2.1 Fastener specifications

Fastener Name	Specification	Torque(N·m)
Hexagonal socket head cap screw	M5×25	10±1

4.2.2 System Component Description

Definition of plug-in wiring: CS is the charging connection confirmation wire, CP is the control confirmation wire, L1 is the AC live wire, N is the zero wire, and PE grounding wire. The wiring harness diagram of the charging socket is shown in the following figure.



Pin Definition	Serial No.	Line color
L1	1	Red
PE	2	Yellow green
N	3	Black

4.2.3 Dismantling and installation of charging sockets

4.2.3.1 Use a screwdriver to remove the four bolts connecting the charging socket to the vehicle

body sheet metal;

4.2.3.2 Separate the charging dock plug from the charging cable plug;

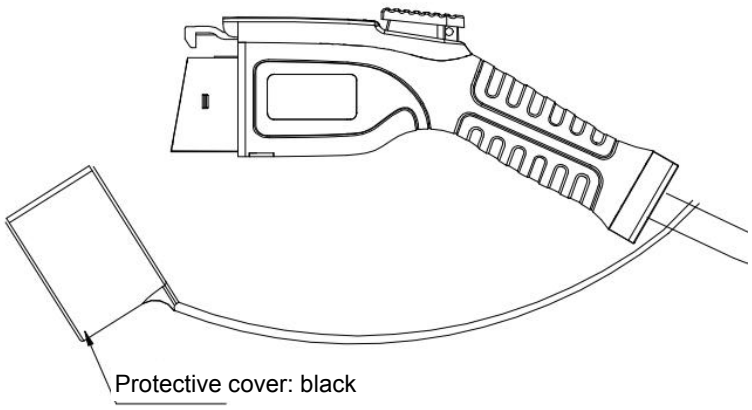
4.2.3.3 Remove the charging socket;

4.2.3.4 Install the charging socket according to the same steps above;

Warning: If the charging dock is confirmed to be damaged, replace the components directly.

4.3 Charging gun assembly

4.3.1 Schematic diagram of charging gun assembly.



Warning: If the charging gun is confirmed to be damaged, replace it with a new one directly.

4.3.2 Operating instructions

Figure 1

Figure 2

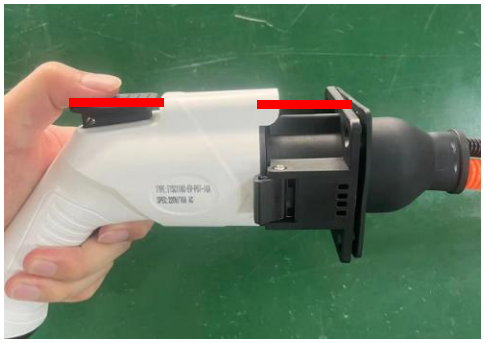


Figure 3

Figure 4

1. Press the button of the charging gun (the sound is "beeping"); 2. After lifting the lever, insert it into the charging dock; 3. Loosen the button (with a "click" sound);

2. Quality control point: After insertion, both the button and the lever are in a parallel and straight line state, without any lifting, as shown in Figure 3. And it can perform a self check by pressing the button again. If there is a "tick" sound and feedback from the button, it indicates that it has been inserted properly;

3. Suggestion: As shown in Figure 4, if the lever is in the raised state, it indicates that it has not been inserted into place. To improve the success rate of inserting the gun, it is recommended to hold the gun body with your hand and gently lift it upwards after inserting it into place;

V. DC-DC assembly (with CAN communication)

5.1 Specifications and parameters

5.1.1 DC-DC specifications and parameters

Parameter name	Value or range	Parameter name	Value or range
Working voltage	45-90V	Efficiency	≥85%
Rated power	500W@77℉	Working environment temperature	-68℉~+140℉
Maximum output current	50A	Storage temperature	-86℉~+158℉
No load output voltage	12.8V	IP level	IP67
Full load output voltage	≥12V	Enabling control	CAN

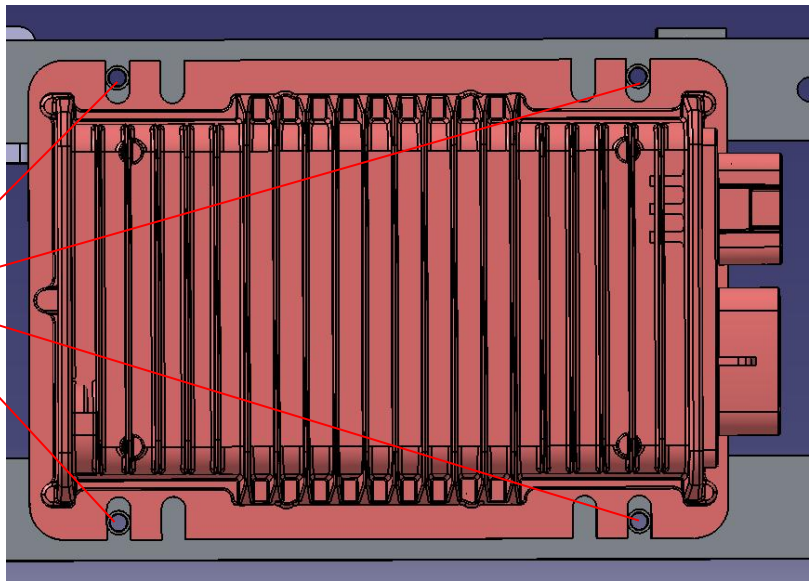
		methods	

5.1.2 Tightening torque table

Item	Specification	Torque(N·m)
DC-DC converter fixing bolts	M6×20	10±2

5.2 Component Location Diagram

Installation bolt hole position



5.3 System Overview

DC-DC converter is a technical device that converts one type of direct current into another, mainly for voltage and current conversion. In this vehicle, the DC-DC converter system is responsible for converting the 90V high-voltage direct current of the power battery into 13.8V ± 0.2V low-voltage direct current to provide electrical energy to the low-voltage electrical appliances of the entire vehicle, and charge the battery when the 12V battery is depleted.

5.4 Precautions for use

5.4.1 Please confirm that the system input voltage range is within the allowable input voltage range of the DC-DC converter.

5.4.2 The DC-DC converter is not equipped with input anti reverse connection function. Please confirm that the polarity of the positive and negative poles on the input side is correct.

5.4.3 The DC-DC converter does not have a built-in pre charging circuit. If necessary, please connect an external pre charging circuit on the DC-DC input side.

5.4.4 When connecting a 12V auxiliary battery to the output side, please confirm that the polarity of the positive and negative poles is correct.

5.4.5 Do not mix or reverse connect input and output lines.

5.4.6 The DC-DC converter does not have a pre charging circuit and does not support hot swapping function. Due to high power, please confirm that the input connector is firmly connected before turning on the front main power switch or contactor, otherwise there may be ignition at the connector.

5.4.7 Do not open the casing to avoid dangerous situations caused by electric shock or short circuits.

5.4.8 Do not disassemble or damage the waterproof joints and other structural components of DC-DC, otherwise it will cause damage to the DC-DC converter.

5.5 Common faults and troubleshooting

5.5.1 Description of common fault phenomena:

5.5.1.1 The DC-DC converter does not start and there is no output voltage under no-load conditions;

5.5.1.2 After the DC-DC converter is started, there is output voltage when unloaded and no output voltage when loaded;

5.5.1.3 Unable to charge the auxiliary battery, resulting in battery depletion.

5.5.2 Troubleshooting steps:

5.5.2.1 Measure whether the voltage of the on-board power battery is normal and whether it’s higher than the starting voltage of the DC-DC converter;

5.5.2.2 Unplug input and output connectors;

5.5.2.3 Check the input and output connectors and their terminals on the opposite side for any signs of detachment, deformation, or oxidation;

5.5.2.4 Check whether the key switch function is normal and whether the key switch control line is connected reliably;

5.5.2.5 Connect the input connector firmly, ensuring that the input positive pole, input negative pole, and key switch control wire all have normal working voltage;

5.5.2.6 Measure whether there is a normal output voltage between the output positive pole and the output negative pole when the output connector is disconnected from the load side;

5.5.2.7 Disconnect the auxiliary battery from the low-voltage bus and measure whether there is a short circuit in the onboard electrical bus;

5.5.2.8 Connect the output connector and connect it in the form of a DC-DC converter directly supplying power to the vehicle's electrical appliances. Turn on the key switch, turn on the headlights, and perform load tests to check if the output voltage is normal and if there is an output current.

Increase the load and check if the DC-DC converter can output at full power;

5.5.2.9 Measure whether the voltage of the auxiliary battery is normal. Under normal circumstances, it should be greater than 12V, and if it is less than 10V, it is considered battery depleted. If the DC-DC converter can output at full power in the test of item (8), it can be maintained or tested after replacing the auxiliary battery.

5.5.3 Cause of malfunction:

5.5.3.1 Poor contact of connectors, detachment of connectors, or oxidation, deformation, or poor contact of some pieces of the connectors;

5.5.3.2 Internal damage caused by reversely connected polarity of input connectors, reversely connected polarity of output connectors, mixed input and output connections;

5.5.3.3 The voltage of the power battery is too low, triggering the undervoltage protection function of the DC-DC converter;

5.5.3.4 Auxiliary battery damage;

5.5.3.5 External short circuit triggered the short-circuit protection function of the DC-DC converter;

5.5.3.6 Long term overload triggered the over temperature protection or over current protection function of the DC-DC converter;

5.5.3.7 Poor contact of the key switch (control wire);

5.5.3.8 Internal protection circuit locking, internal fuse damage, and component damage.

5.5.4 Solution:

5.5.4.1 Check or replace connectors;

5.5.4.2 Eliminate undervoltage faults in power batteries;

5.5.4.3 Eliminate auxiliary battery damage fault, the wiring harness of the auxiliary battery can be removed or replaced for troubleshooting;

5.5.4.4 Unplug the output connector, measure whether the output voltage of the DC-DC converter is normal, and check if there is a short circuit in the measuring appliances;

5.5.4.5 Check if the output power is too high and if the temperature of the DC-DC converter is too high;

5.5.4.6 Check if the voltage of the key switch control wire is normal;

5.5.4.7 Remove the DC-DC converter and reconnect it to clear the lock protection situation;

5.6 Maintenance operation guide

5.6.1 Wear insulated gloves and disconnect the negative battery cable.

5.6.2 Disassemble the input positive and negative terminals of the DC converter in the high-voltage box.

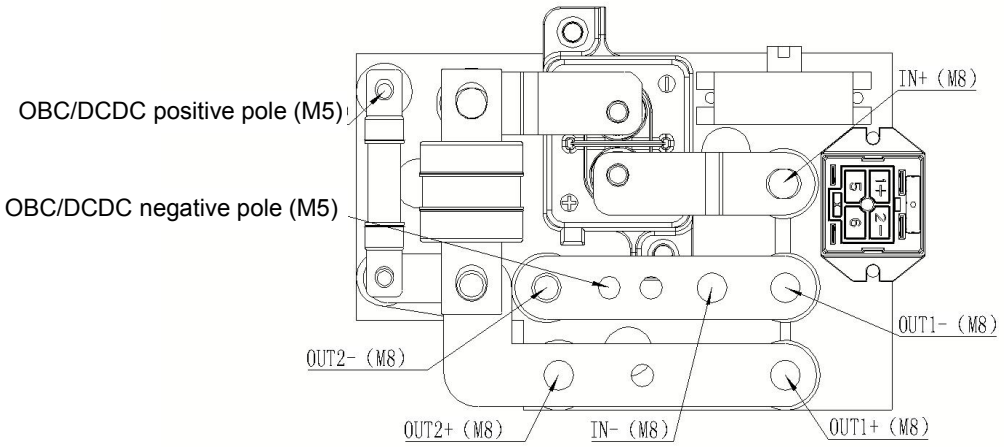
5.6.3 Remove the DC converter output positive terminal from the positive terminal fuse of the battery.

5.6.4 Remove the negative terminal of the DC output terminal from the mounting bracket.

5.6.5 Remove the four mounting bolts that secure the DC to the mounting bracket.

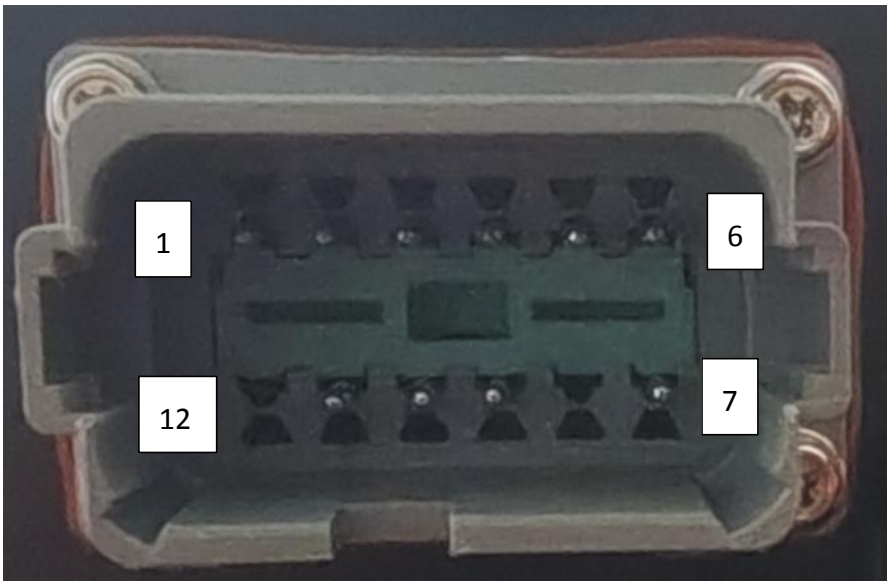
VI.High voltage box

6.1 Internal distribution diagram of high-voltage box



Functional diagram of 10K high-voltage box terminal block

6.2Definition of pin positions for high-voltage box connectors



Communication socket: AT04-12PA-PM02

Definition of pin position

1. Main relay 12V+control
2. Relay 12V negative (grounded)
3. Sensor power supply 5V+
4. Sensor power supply ground
5. Sensor output
6./
7. High voltage detection+
8./
9. Heating relay 12V+control
10. Heating negative output
11. Heating positive output
12./

Note: Observe from the wire harness end.

6.4 Fault diagnosis and handling

Fault	Handling suggestions
Motor controller without high voltage	1. Check whether the positive and negative terminals of the power battery output high voltage are normal. If they are not normal, check the battery. If they are normal, please check the next step (2); 2. Check whether the main contactor control 12V positive and negative power supply of pin 1 and pin 2 of the communication socket is normal, and if it's abnormal, check the wiring harness. If it is normal, please check the next step; 3. Check whether the main contactor is engaged normally (positive pole is turned on and off). If it is not engaged properly, replace it with a new contactor. If it is normal, please check the next step; 4. Check whether the 350A fuse is conductive. If it is not conductive, replace the fuse. If it is conductive, please check the next step;

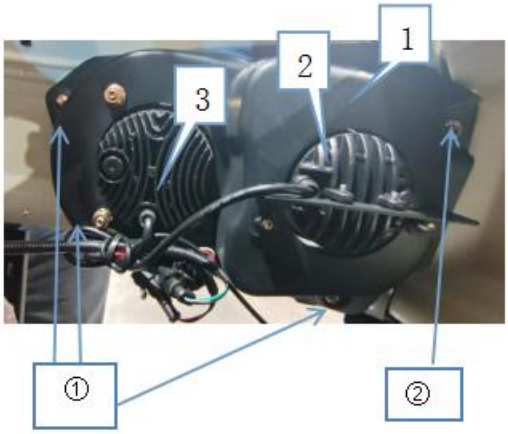
	5. Check whether the 50A fuse is conductive. If it is not conductive, replace the fuse. If it is conductive, check the relevant components of the wiring harness output from the high-voltage box.
Power battery not charging and DC not working	1. Check if the fuse (350A) and fuse (50A) are damaged 2. Check if the main contactor is damaged. If it is damaged, please replace it; 3. Check if the control harness of the main contactor is disconnected (whether the 12V on pin 1 and pin 2 of the communication connector is normal)

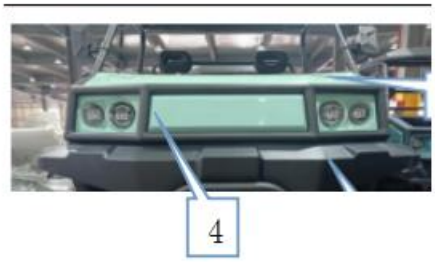
Warning: Insulated gloves should be worn for all operations.

VII. Lighting system

7.1 Installation method of lighting system

7.1.1 High and low beam headlights





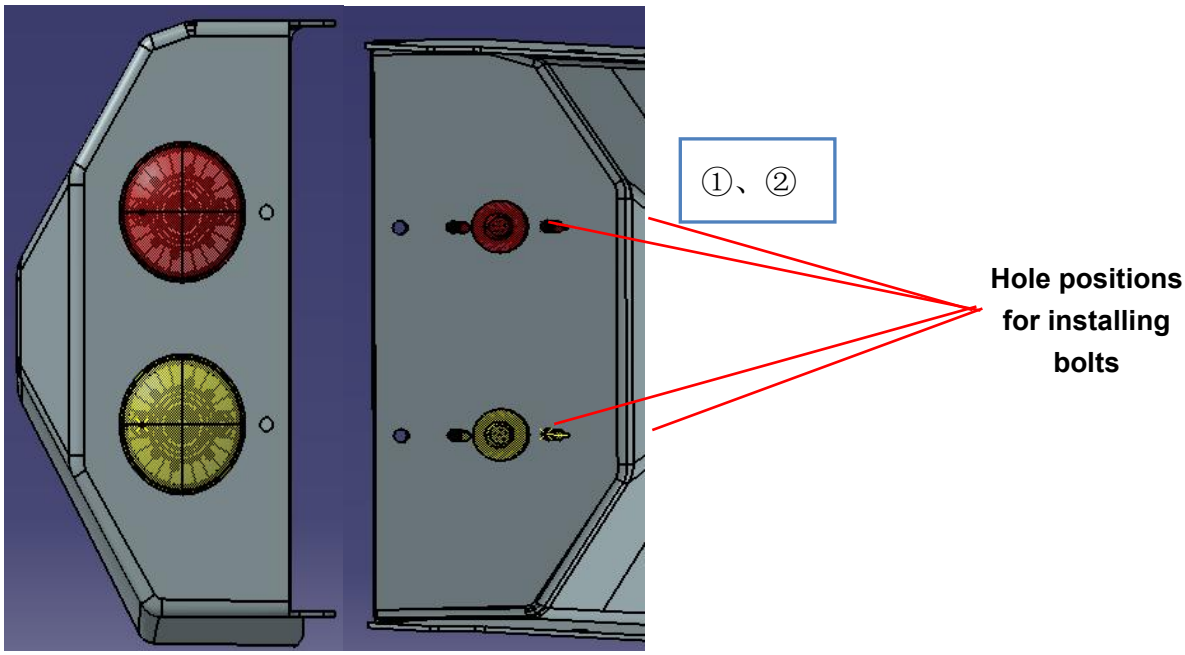
1. Remove the lampshade (1) from the frame (4);

2. Remove the high beam (2) and low beam (3) connectors from the lampshade (1).

7.1.2 Side turn signals

Hole positions for installing bolts

7.1.3Rear taillights and turn signals



Note: The disassembly of the rear tail light and rear turn signal light requires the removal of the left outer panel of the vehicle body first.

7.2 Fault maintenance

1. First, check if the light fuse inside the wire harness fuse box is normal. If the fuse is burned, it needs to be replaced in a timely manner.

2. Secondly, check if there is any damage to the circuit. If there is poor overlap or looseness in the circuit, unplug the circuit plug and then insert firmly

3. Recheck if there is a malfunction in the light relay and switch, and if there is a malfunction, replace it;

4. After eliminating the above three faults, it indicates that the lighting lamps is damaged and needs to be replaced with a new one.

VIII. T-BOX

8.1Fastener specifications

Fastener Name	Specification	Torque(N·m)
Hexagonal flange bolt	Q1840620	10±2

8.2 Warnings and Precautions

8.2.1 It should be placed in a ventilated, dust-free, and no rain working environment as much as possible;

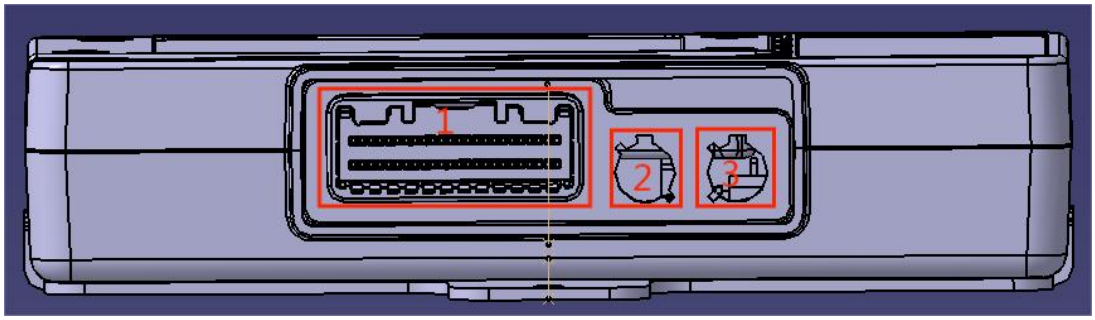
8.2.2 Non electrical personnel are strictly prohibited from opening the casing;

8.2.3 Please pack and store when it won't be used for a long time.

8.3 T-BOX Performance

Model	T-BOX
Working environment temperature range	-86℉～+176℉
Storage temperature	-104℉～+185℉
Relative humidity	20%～90%RH
Working voltage	9~16V
Working current range	≤1
Atmospheric pressure	11.6psi -15.4psi (altitude below 2000m)
Power consumption	<12W

8.4 System Component Description



Serial No.	Name	Description
1	Main connector	Used for equipment power supply, vehicle signal and communication signal connection
2	GPS antenna plug-in	Connect to the central control screen, share network and GPS data communication, etc
3	4G main antenna plug-in	Enhance 4G signal

8.4.1.1 Operation steps

8.4.1.2 Install the T-BOX assembly onto the vehicle bracket;

8.4.1.3 Connect the antenna;

8.1.1.4 Connect the power signal plugin.

8.4.1.2 System principle

The T-BOX function is implemented by connecting the T-BOX with the vehicle body signal through a wire harness to achieve the T-BOX design function.

8.4.1.3 Function

Terminal working status, vehicle connected operation status, 4G antenna status, vehicle failure, remote control, remote tracking, vehicle abnormal alarm, product detection, product upgrade, parameter configuration, product activation, antenna, external power supply voltage, external backup battery, 4G module status

8.5 Fault diagnosis information

8.5.1 Troubleshooting precautions

8.5.1.1 When replacing various components, be careful and cut off the high and low voltage of the entire vehicle, as it may affect the performance of the vehicle wiring harness and controller, and live operation may cause safety issues for maintenance personnel. For replacement parts, standard parts from Kandi Company should be used;

8.5.1.2 When repairing T-BOX, it is very important to keep the components and site clean;

8.5.1.3 If any abnormal situations are found, replace with new components;

8.5.1.4 After disassembling the T-BOX, if it is not used for a long time, please package and store it. If it needs to be returned to the factory for repair, please send it back to the manufacturer;

8.5.1.5 When installing T-BOX, it should be ensured that they do not interfere with other components;

8.5.1.6 It should be placed in a ventilated, dust-free, and no rain working environment as much as possible.

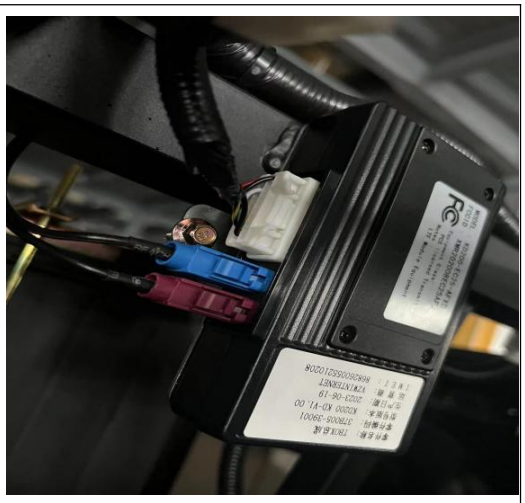
8.5.2 Fault symptom table

Fault phenomenon	Cause analysis	Troubleshooting method
No vehicle body data fault	Poor or no contact of communication port or equipment malfunction	Check if the communication port is connected properly and troubleshoot any equipment malfunctions

Backend communication failure	Unable to monitor vehicle information in the backend	Check if the communication port is connected properly, and check if the device, antenna connection, SIM card service status, etc. are normal.

8.6 Dismantling and installation

8.6.1 Disassembly Procedure

1. Disconnect the key, ensure that the vehicle is in a power-off state, and disconnect the communication line and antenna;	
2. Remove the fixing bolts;	

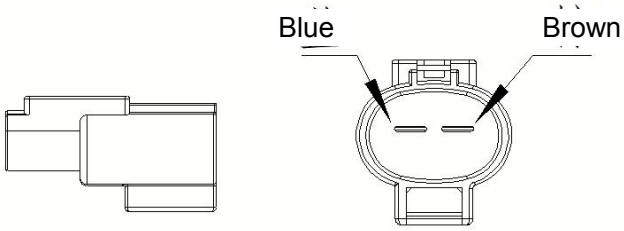
IX. Cargo box lifting and lowering

9.1 Lifting motor parameters

Parameter name	Value or range	Parameter name	Value or range
Rated voltage	DC12V	Stroke	6.3in.
Allowing thrust	MAX.3000N	Adjusting speed	0.1969in./s

The working system under load is intermittent, running for 2 minutes and stopping for 18 minutes. For example, the lifting motor keeps running at rated load for a maximum of 2 minutes and should rest for 18minutes, otherwise it may fail.

9.2 Definition of connector pins for lifting motor



Sheath AMP 176143-2
Terminal AMP 175087-1
Waterproof plug :DW 7157-3850
Buckle ZJZ JZ-XK-05

Outlet terminal

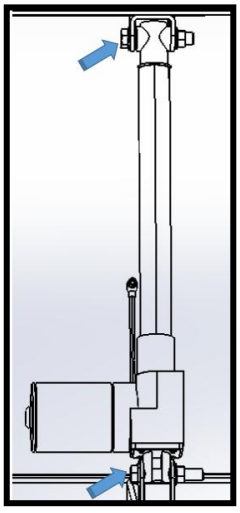
Push rod wiring instructions

Connection	Brown	Blue
Extension process	+	-
Retraction process	-	+

9.3Fault diagnosis and handling

Fault	Handling suggestions
The cargo box cannot be lifted.	1. Firstly, check if the positive and negative terminals of the 12V power supply are working properly; 2. Check if the 2 and 3 pins of the lifting switch can work properly (+12V can conduct normally). If not, replace the switch. If it is normal, please check the next step; 3. Check if relay 2 is normal. If it is not normal, replace the relay. If it is normal, please check the next step; 4. Check if the 30 and 87a pins of relay 1 are conductive to the negative pole when not powered on. If they are not conductive, replace the relay and if they are normal, check the next step.
The cargo box cannot be lowered	1. Firstly, check if the positive and negative terminals of 12V are working properly; 2. Check if the 2 and 1 pins of the lifting switch can work properly (+12V can conduct normally). If not, replace the switch. If it is normal, please check the next step; 3. Check if relay 1 is normal. If it is not normal, replace the relay. If it is normal, please check the next step; 4. Check if the 30 and 87a pins of relay 2 are conductive to the negative pole when not powered on. If they are not conductive, replace the relay and if they are normal, check the next step.

9.4 Dismantling and installation



9.4 Dismantling and installation procedures

9.4.1. Operate the device to its starting position;

9.4.2. Cut off the connection between the switch power supply and the main voltage;

9.4.3 Dismantle or install the fixing bolts (Q1841060) for the push rod motor;

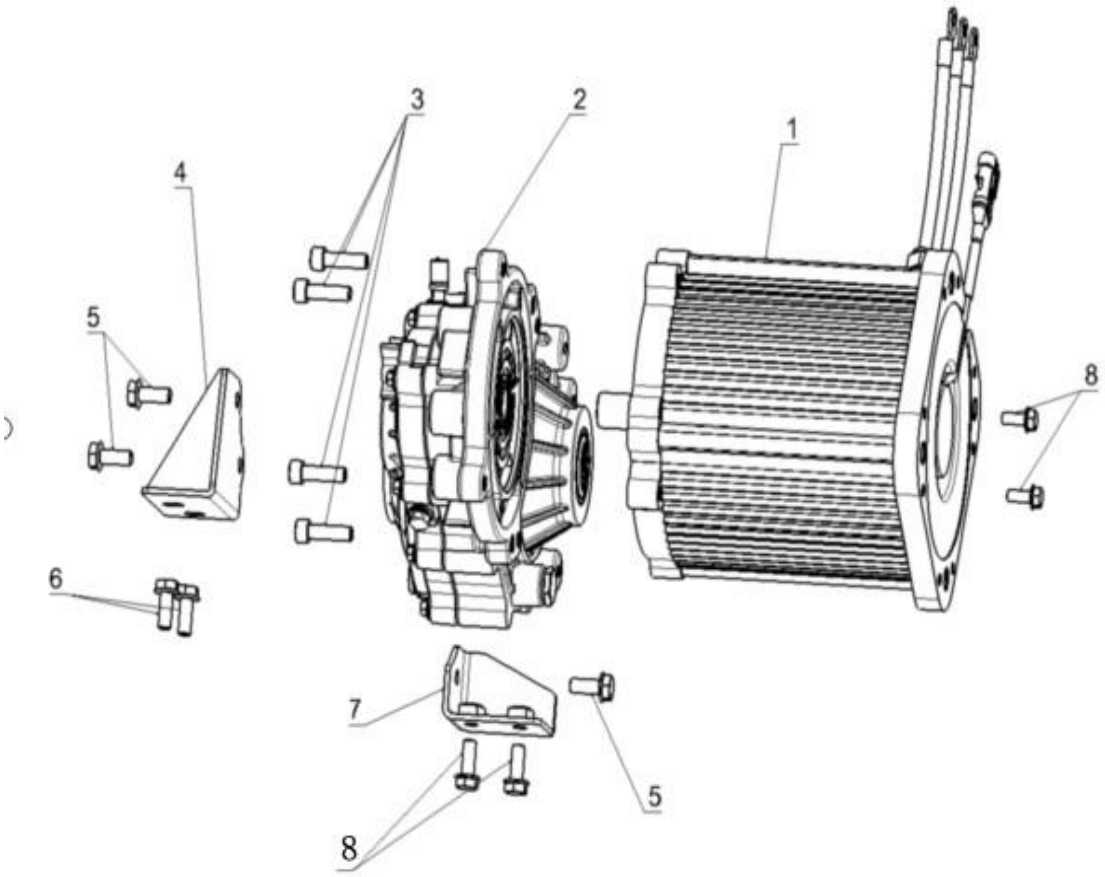
9.4.4. Dismantling or installing the push rod motor.

Attention!

During disassembly and installation, the push rod and control system must be disconnected from the power supply.

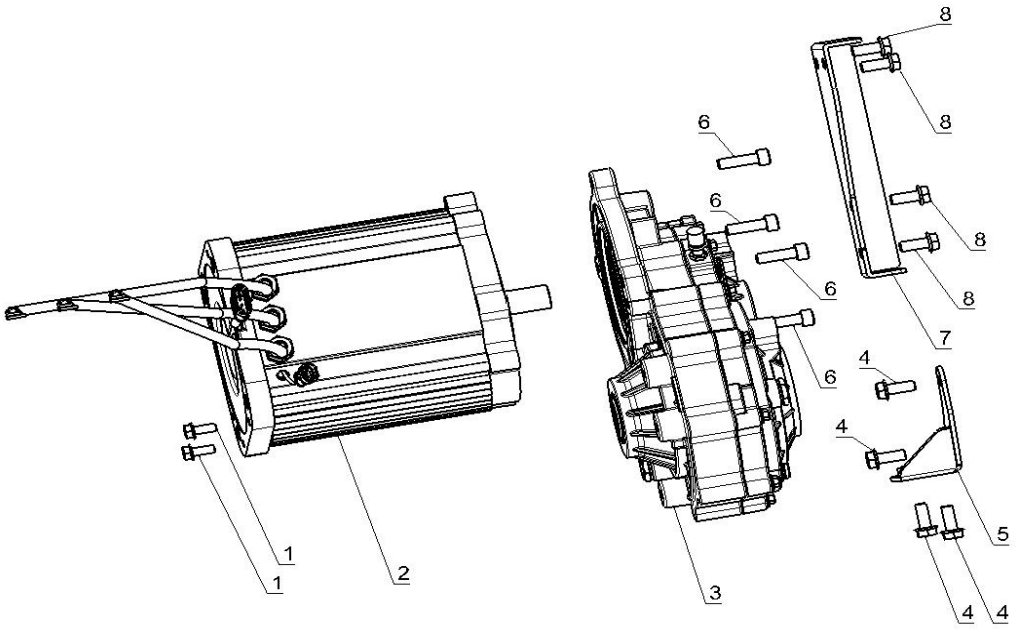
X. Powertrain

10.1Front powertrain



REF. NO.	PART NO.	PART NAME	Q'TY
1	DC2103110	Drive motor	1
2	DC2302100	Reducer Assembly	1
3	GB/T 70.6-2020 M10*1.25*35	Hexagon socket head cap screw with fine thread M10×1.25×35	4
4	DC2103112	Front Powertrain left bracket	6
5	Q1851025	Hexagon flange bolt with fine thread M10×1.25×25	3
6	Q1841025	Hexagon flange bolt M10 ×25	2
7	DC2103111	Front Powertrain support	1
8	Q1840820	Hexagon flange bolt M8 ×20	4

10.2 Rear powertrain



REF. NO.	PART NO.	PART NAME	Q'TY
1	Q1840120	Hexagonal flange bolt M8×20	2
2	DC2103120	Drive motor	1
3	DC2102100	Reducer Assembly	1
4	Q1851025	Hexagon flange bolt with fine thread M10×1.25×25	4
5	DC2103114	Lower bracket of rear power assembly	1
6	GB/T 70.6-2020 M10*1.25*35	Hexagon socket head cap screw fine thread M10×1.25×35	4
7	DC2103115	Upper bracket of rear power assembly	1
8	Q1841025	Hexagonal flange bolt M10×25	4

10.3 Maintenance and upkeep of reducer assembly

10.3.1 Lubricating oil for reducer

Using 75W-90 GL-4 gear oil, inject approximately 0.6L of oil into the front reducer and approximately 0.5L of oil into the rear reducer.

10.3.2 Initial maintenance

After running in the reducer, replace the lubricating oil of the reducer when the travel reaches 3000-5000Km. Afterwards, regular maintenance shall be carried out at the designated vehicle repair point.

10.3.3 Regular maintenance and upkeep

1. The maintenance cycle should be judged based on the odometer reading or the number of months, whichever comes first. The following table shows regular maintenance within 8 ×10^4 kilometers, and maintenance over 8 × 10^4 kilometers should be carried out at the same cycle;

2. Suitable for various driving conditions (repeated short distance driving; driving on uneven or muddy roads; driving on dusty roads; driving on extremely cold or saline alkali roads; repeated short distance driving in extremely cold seasons);

3.According to the driving performance requirements of the entire vehicle, inspections are required during maintenance and upkeep;

4. B: Replace the lubricating oil of the reducer when necessary during maintenance and inspection; H: Replace the lubricating oil of the reducer.

5. If other maintenance operations are carried out without changing the lubricating oil of the reducer, when lifting the vehicle, the reducer should also be checked for oil leakage and the lubricating oil level of the reducer.

Regular maintenance cycle table								
10000 kilometers	1	2	3	4	5	6	7	8
Number of months	6	12	18	24	30	36	42	48
Method	B	H	B	H	B	H	B	H

10.4 Replace gear oil

When the vehicle leaves the factory, it has an appropriate amount of qualified gear oil. Please determine the oil replacement interval according to the maintenance plan.

Checking the gear oil level can only be done by draining and replacing the correct type and amount of oil.

1. Find and remove the oil drain bolts ① and ② of the gearbox located at the front and rear of the vehicle;

2. Drain the gearbox gear oil in an appropriate container and reinstall the oil drain bolts.

Attention:

It is necessary to dispose waste oil in a dedicated waste oil recycling station to avoid polluting the environment.

3. The amount of gearbox gear oil to be added is 600ml in the front and 500ml in the rear.

4. Gear oil specification: 75W-90 GL-4

10.5Common fault table

Fault	Suspected locations	Measures/Reference
Abnormal or excessive noise	Insufficient gear oil and insufficient lubrication	Add lubricating oil according to the specified amount of oil
	Using substandard and inferior gear oil	Add lubricating oil according to the specified model
	Damaged or worn bearings	Replacing bearings
	Damaged or worn gear	Repair or replace worn gears
Gearbox assembly leaking oil	Input shaft oil seal worn or damaged	Replace the input shaft oil seal
	Differential oil seal worn or damaged	Replace differential oil seal
	Oil leakage at the plug	Replace the plug gasket and tighten it to the specified torque
	Housing rupture	Repair or replace the housing
	Excessive gear oil, high oil level	Add lubricating oil according to the specified amount of oil

XI. Wheels and tires

11.1Specifications

11.1.1 Fastener specifications

Fastener Name	Model	Installation torque (N.m)
Wheel nuts	M12×1.25	100±10

11.1.2 Tire specifications

	Specification	Cold pressure
Front wheel	AT26×9_14	14psi
Rear wheel	AT26×11_14	14psi

Attention:

1. The tire pressure should be adjusted to the recommended pressure.

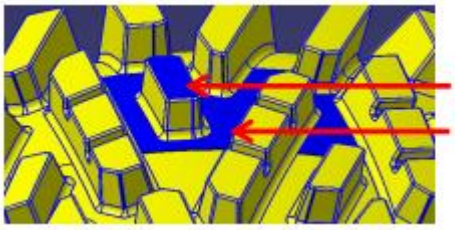
2. The pressure of the left and right tires must be consistent.

3. If the tire pressure is lower than the specified value, it will cause the tire to fall out of the rim.

4. When assembling tires, there will be a high pressure, and high pressure can cause the tire to burst. Please slowly and carefully inflate the tire.

11.2 Tire wear limit

When wear causes the tread depth to be lower than 5/32in., the tire must be replaced.

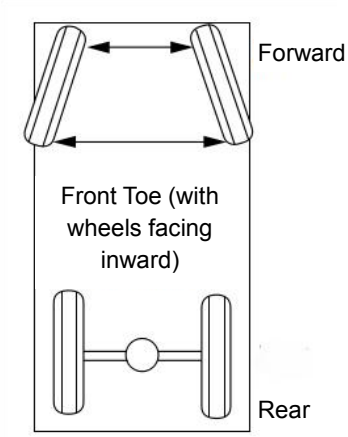


Tread Depth 1/8" (5/32in)

11.3 Wheel disassembly

1. Use tools such as jacks to lift the vehicle.
2. Use tools to remove the four wheel nuts ①.
3. Remove wheel ② from the entire vehicle.

11.4 Adjusting the wheel toe in

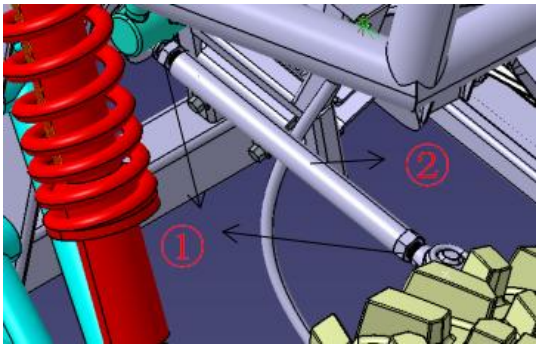


11.4.1 Requirements for wheel toe in:

0.1969in ±0.1181in(left-right difference ≤ 0.1181in)　Toe in refers to the distance difference between the front and rear end faces of the front wheel in the lateral direction of the car, which is an important parameter affecting the straight-line and turning driving of the vehicle.

11.4.2 Method for adjusting wheel toe in:

1. Loosen the locking nut ① of the steering gear tie rod;
2. Rotate the left and right tie rods ② to adjust the length of the left and right tie rods.
3. If the toe in value is too large, it is necessary to retract the tie rod. On the contrary, it is necessary to extend the tie rod until it meets the requirements.
4. If the vehicle deviates to the right, it is necessary to slightly retract the left front wheel tie rod. After adjustment, tighten the locking nut again.



11.5 Tire deviation correction

11.5.1 Fault Definition

During the process of driving in a straight line at a certain speed, without applying any external force to the steering wheel, the vehicle deviates from the original travel direction to the left or right.

11.5.2 The criteria for determining vehicle deviation

A. When a vehicle is traveling in a straight line at a certain speed, in order to maintain its original direction of travel, a force must be applied to the steering wheel to prevent it from

rotating clockwise or counterclockwise.

B. When a vehicle is traveling in a straight line at a certain speed, the situation where the vehicle deviates from the original travel direction to the left or right after releasing the steering wheel (usually referring to a situation where the deviation from the travel direction exceeds 1M after driving 100M).

Attention:

Before conducting a deviation correction, the vehicle should undergo the following basic checks.

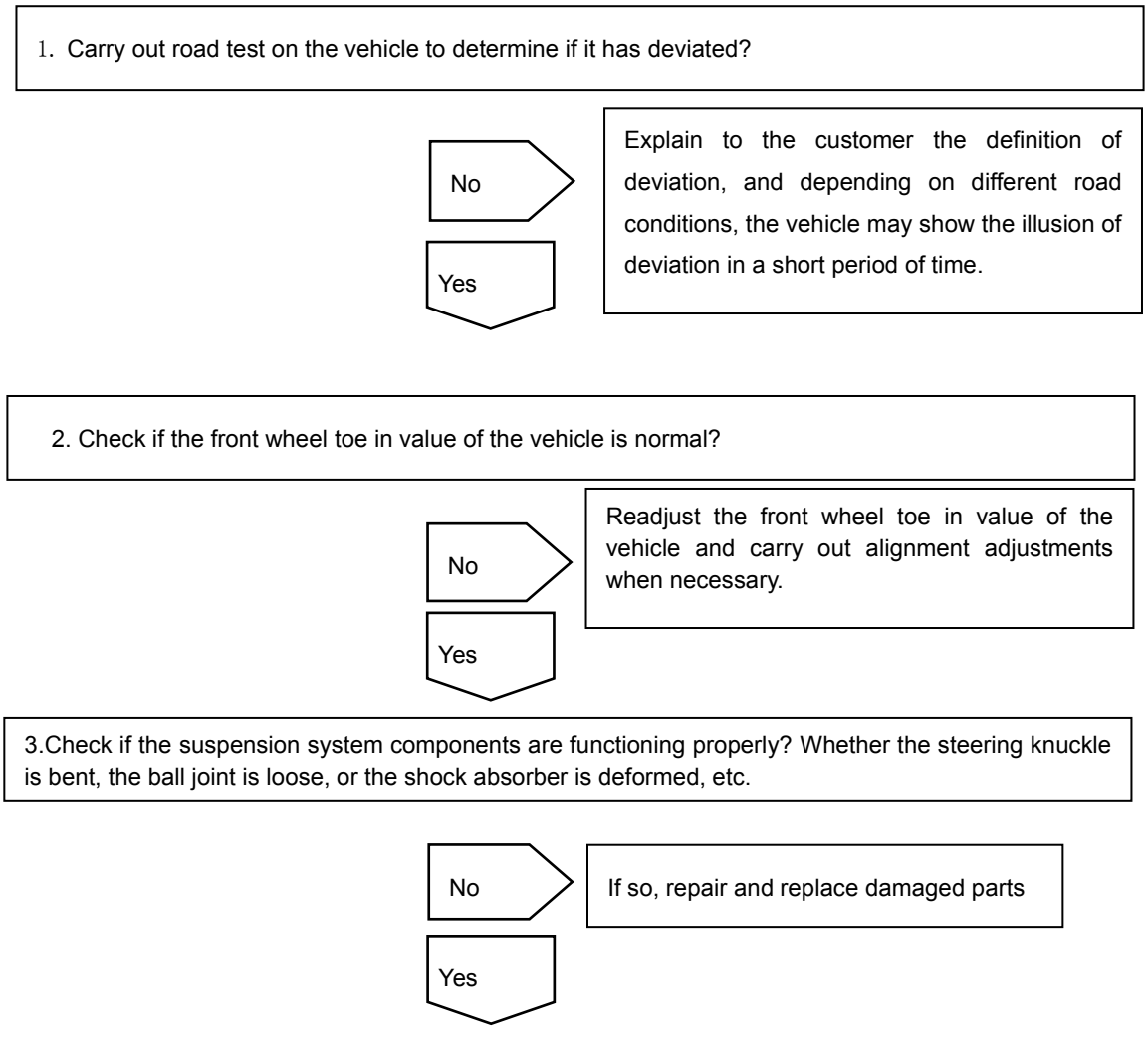
Check if there is any dragging or other issues with the front and rear wheel brakes;

Check if the degree of tire wear on the same suspension differs significantly;

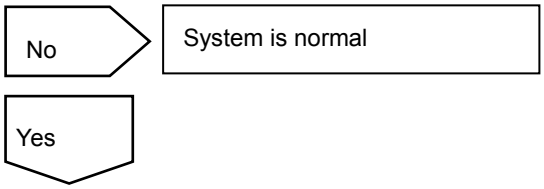
Check if there is a significant difference in tire pressure on the same suspension system;

If any of the above abnormalities occur, please adjust to normal state before road testing the vehicle to ensure troubleshooting.

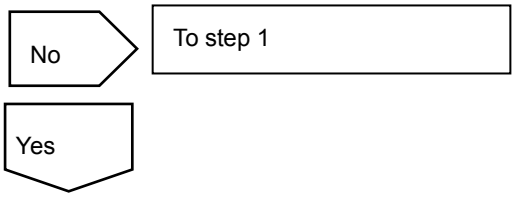
11.5.3Calibration procedure



4. A. Swap the left front wheel assembly with the right front wheel assembly.
B. Carry out road test on vehicle.
Is the vehicle still deviating?



5. Return to the first step of the diagnostic



6. Check if there is any bending or other damage to the frame and suspension system components?

7.Correct the frame, replace damaged parts if necessary, and confirm whether the problem has been resolved.

Attention:

1. Please carry out road test of the vehicle under safe conditions and comply with all traffic regulations.
2. Do not attempt any operations that may endanger vehicle control.

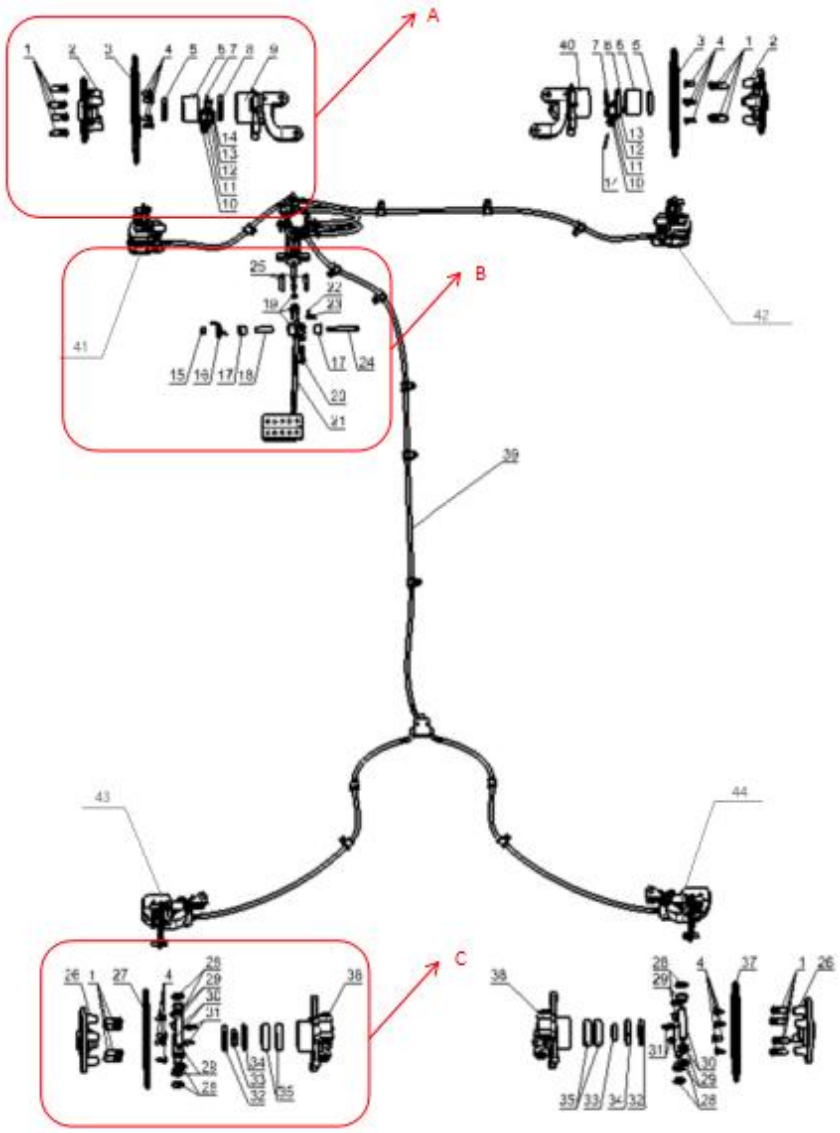
Violating the above safety instructions can lead to serious injury accidents and damage to the vehicle.

XII.Hydraulic brake system

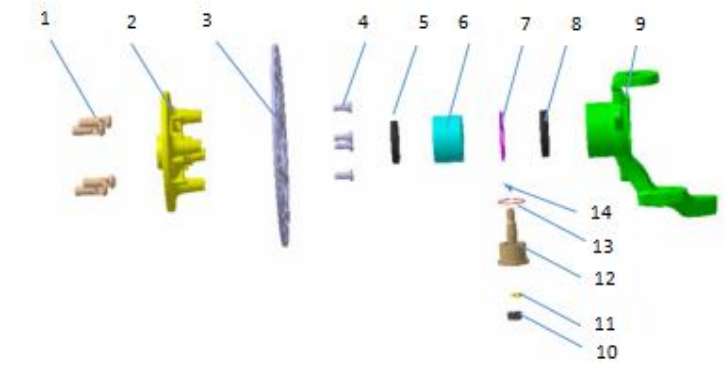
12.1 Working principle of hydraulic braking:

The hydraulic braking device consists of brake pedal, brake master cylinder, brake wheel cylinder, wheel brake, brake roller, pipeline, etc. When the brake pedal is pressed, the piston pushes the master cylinder forward to generate pressure on the brake fluid in the cylinder, and the fluid is pressed into each brake wheel cylinder through the oil pipes.

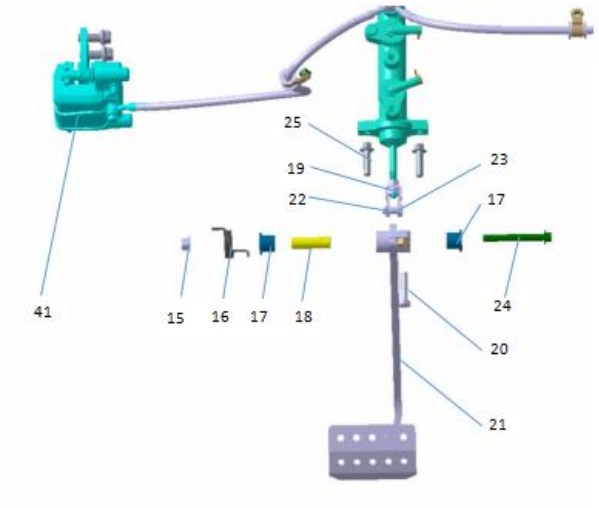
12.2 Component diagrams



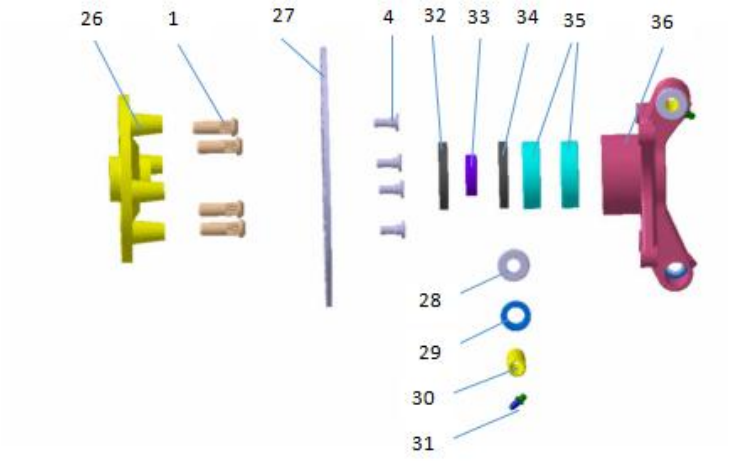
12.2.1 A Area



12.2.2 B Area



12.2.2 C Area



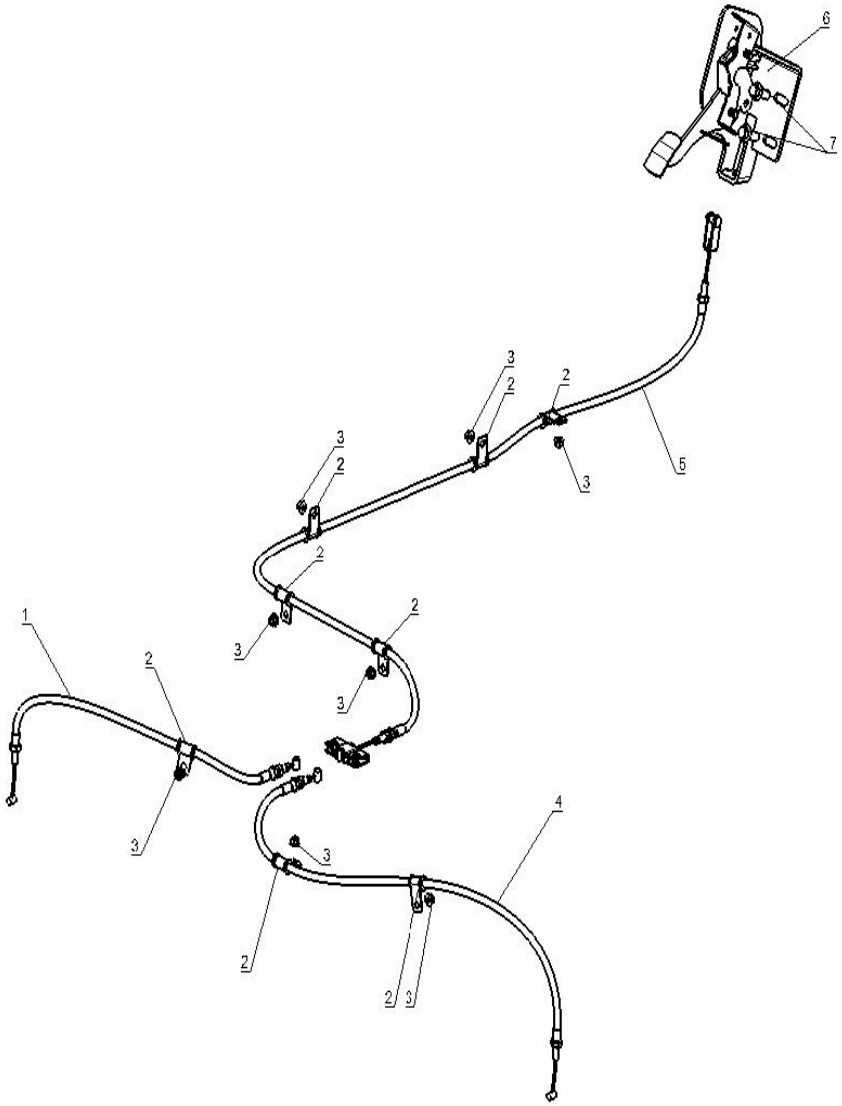
REF. NO.	PART NO.	PART NAME	Q'TY
1	DA3501112	Hub bolt	16
2	DA3501111	Front wheel hub mounting seat	2
3	DA3501120	Front brake disc	2
4	DA3501121	Brake disc bolts	16
5	DA3501134	Front wheel hub oil seal 2	2
6	DA3501132	Front wheel hub bearing	2
7	Q43060	Elastic retaining ring for holes	2
8	DA3501133	Front wheel hub oil seal 1	2
9	DA3501131	Left front sheep horn	1
10	DA2901140	Suspension ball joint	2
11	Q387C10	Hexagon slotted thin nutM10*1.25	2
12	Q40310	Spring washer d=10	2
13	Q43132	External Circlips d0=32	2
14	Q5002528	Split pin	2
15	Q33008	All metal hexagonal flange locking nut	1
16	DC3504015	Torsion spring	1
17	DA3504008	Brake pedal nylon lining	2
18	DC3504014	Pedal pin shaft	1
19	Q340B08	1-type hex nut M8	3
20	Q150B0835	Hexagonal head bolt M8 * 35	1
21	DC3504010	Brake pedal bottom welding assembly	1
22	Q5002518	Split pin	1
23	Q5100820	Pin shaft	1
24	Q1840870	Hexagon flange bolt M8 * 70	1
25	Q1840830	Hexagon flange bolt M8 * 30	2
26	DA3502111	Rear wheel hub mounting seat	2
27	DA3502120	Left rear brake disc	1
28	DA3502137	Pin end cover	8
29	DA3502136	Rear joint pin sleeve	8
30	DA3502135	Rear joint pin shaft	4
31	Q700B08	Straight through grease nozzle	4
32	DA3502134	Rear hub oil seal 2	2
33	DA3502139	Rear wheel hub bearing spacer sleeve	2
34	DA3502133	Rear wheel hub oil seal 1	2
35	DA3502132	Rear wheel hub bearing	4
36	DA3502131	Left posterior joint	1
37	DA3502220	Rear right brake disc	1
38	DA3502231	Right posterior joint	1
39	DC3503000	Brake assembly	1
40	DA3501231	Right front sheep horn	1
41	DA3503010	Left front cylinder assembly	1
42	DA3503020	Front right cylinder assembly	1
43	DA3503030	Left rear cylinder assembly	1
44	DA3503040	Rear right cylinder assembly	1

XIII.Parking brake system

13.1 System working principle

Mechanical foot brake: By linking the brake calipers of the rear wheels with steel wires, the driver presses the parking pedal and the calipers press against the brake pads, thereby achieving the parking function.

13.2 Component diagrams



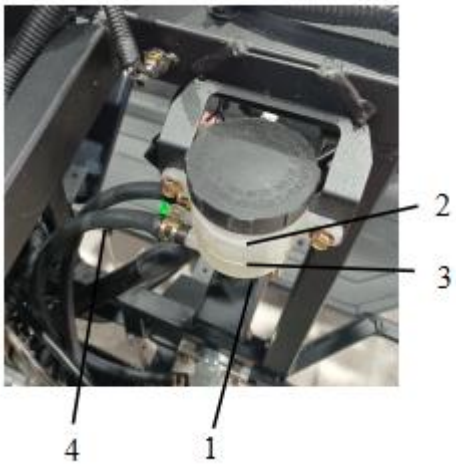
REF. NO.	PART NO.	PART NAME	Q'TY
1	DC3507030	Left rear parking brake cable assembly	1
2	Q68614	Single tube clamp	8
3	Q33006	All metal hexagonal flange locking nut	8
4	DC3507030	Rear right parking brake cable assembly	1
5	DC3507020	Front parking brake cable with balancer assembly	1
6	DC3507010	Parking brake pedal assembly	1
7	Q1841025	Hexagon flange bolt	2

13.3 Check brake fluid

The lack of brake fluid may cause air to flow into the braking system, reducing braking performance.

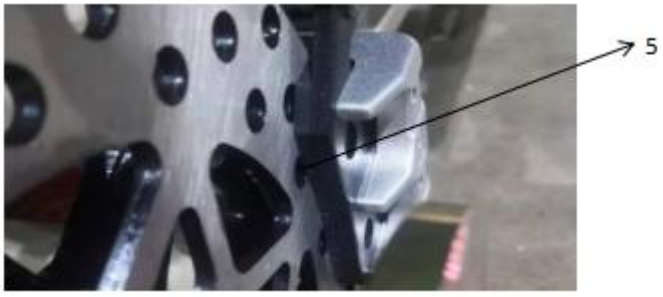
As shown in the figure, check the brake fluid level (1 of the brake oil tank. The normal level should be between the upper marking line (2) and the lower marking line (3) of the oil tank. If the level is lower than the lower marking line (3), check if there is any leakage or crack in the brake hose (4).

If there is no leakage, please add qualified brake fluid to the appropriate level in a timely manner.

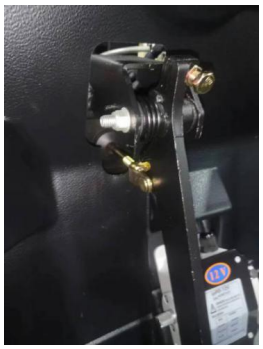


13.4 Check the front and rear brake shoes

The brake shoes are equipped with a wear degree display groove (5), and the wear degree of the brake pad can be clearly seen by observing the length of the display groove. If the groove has almost disappeared, please replace the brake shoes with new ones as soon as possible.



13.5 Check the brake pedal

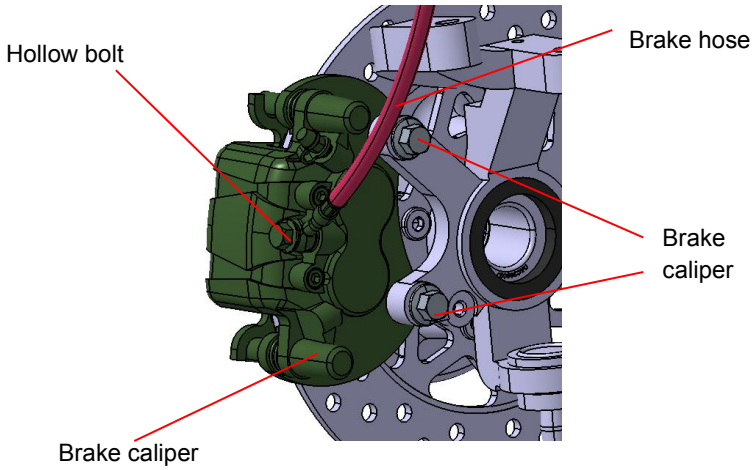


If there is free clearance between the brake pedals, it will cause uneven braking operation and dragging. If the braking feels soft or sponge like, it indicates that there is air in the braking system and the brake fluid needs to be rechecked.

13.6 Replacement of front brake calipers

13.6.1 Disassembly

1. Discharge brake fluid;
2. Dismantle the front wheel;
3. Remove the hollow bolt of the front brake hose;
4. Remove the brake caliper;
5. Remove the brake caliper mounting bolts;
6. Remove the brake caliper;



13.6.2 Dismantling

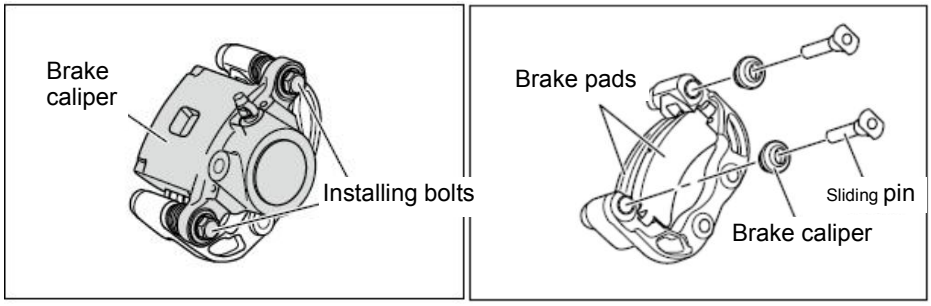
1. Remove the brake caliper mounting bolts and remove the brake caliper from the bracket.

Reminder: When disassembling, use a wrench to fix the sliding pin of the brake caliper so as to remove the brake caliper mounting bolt; 2. Remove the brake pads from the brake caliper bracket.

Reminder: If the brake pads need to continue to be used, assembly marks should be made during disassembly for subsequent installation. Otherwise, the braking effect will be

uneven. Measure the thickness of the brake pads, and replace them if they exceed the friction limit value;

3. Remove the sliding pin and dust cover from the brake caliper bracket.



13.6.3 Assembling

1. Install the sliding pin dust cover and sliding pin onto the brake caliper bracket.

Reminder: Before installation, apply lubricating grease to the sliding pin dust cover;

2. Install the brake pads marked during disassembly onto the mounting positions on both sides of the brake caliper bracket.

Reminder: If the brake piston is pushed out during the repair process, the brake caliper piston reset tool can be used to install it in place;

3. Install the brake caliper onto the bracket, install the mounting bolts and tighten them, with a torque of 40-50 N · m.

13.6.4 Installation

Install in the reverse order of disassembly, with a torque of 30-40 N · m for installing the hollow bolt of the brake hose.

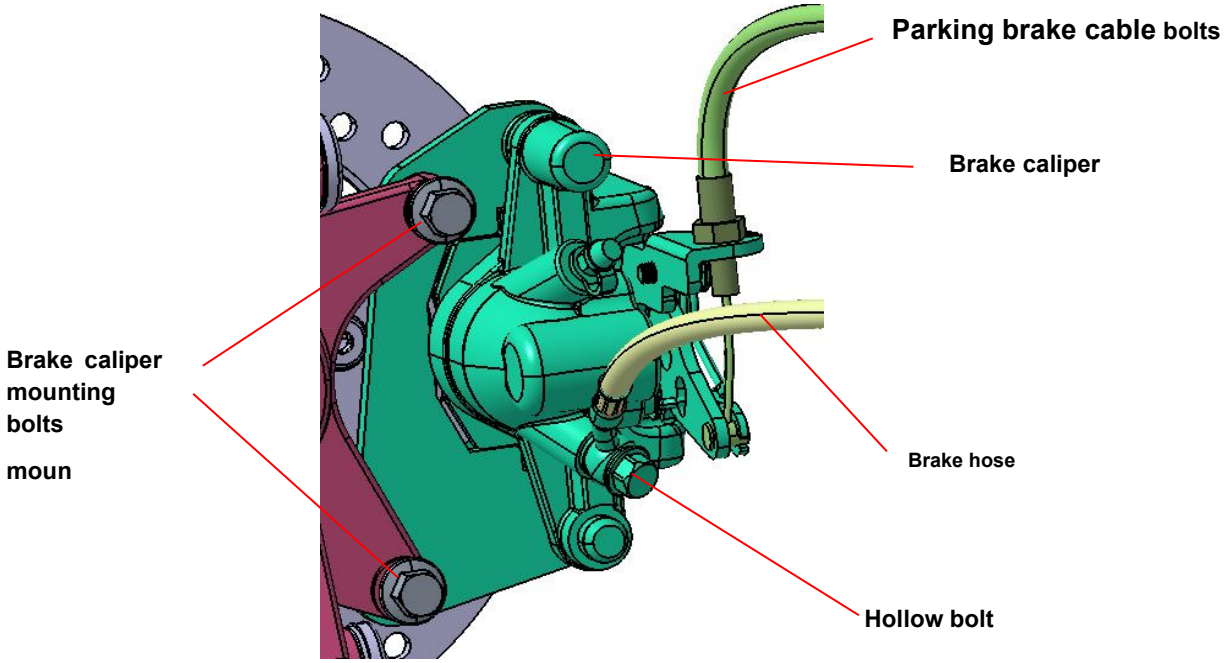
13.6.5 Post installation inspection

Perform a road test to check if the braking system performance is good.

13.7 Replacement of rear brake calipers

13.7.1Disassembly

1. Remove the parking brake cable;
2. Discharge brake fluid;
3. Dismantle the rear wheel;
4. Remove the hollow bolt of the brake hose and the brake caliper;
5. Remove the brake caliper mounting bolts and remove the brake caliper;



13.7.2 Dismantling

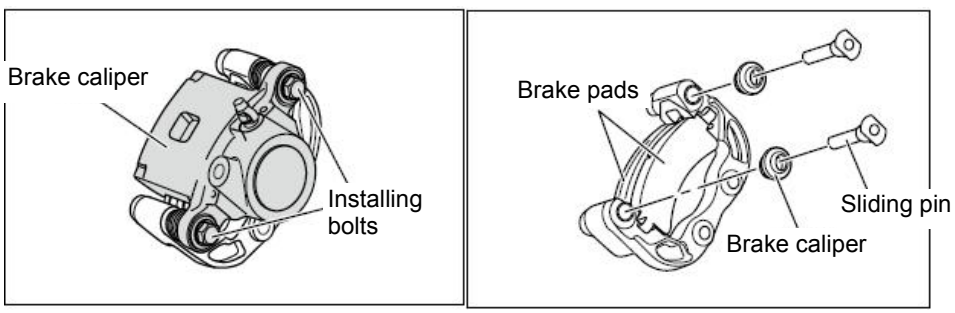
1. Remove the brake caliper mounting bolts and remove the brake caliper from the bracket.

Reminder: When disassembling, use a wrench to fix the sliding pin of the brake caliper so as to remove the brake caliper mounting bolt;

2. Remove the brake pads from the brake caliper bracket.

Reminder: If the brake pads need to continue to be used, assembly marks should be made during disassembly for subsequent installation. Otherwise, the braking effect will be uneven. Measure the thickness of the brake pads, and replace them if they exceed the friction limit value;

3. Remove the sliding pin and dust cover from the brake caliper bracket.



13.7.3 Assembling

1. Install the sliding pin dust cover and sliding pin onto the brake caliper bracket.

Reminder: Before installation, apply lubricating grease to the sliding pin dust cover;

2. Install the brake pads marked during disassembly onto the mounting positions on both sides of the brake caliper bracket.

Reminder: If the brake piston is pushed out during the repair process, the brake caliper piston reset tool can be used to install it in place;

3. Install the brake caliper onto the bracket, install the mounting bolts and tighten them, with a torque of 40-50 N · m.

13.7.4 Installation

Install in the reverse order of disassembly, with a torque of 30-40 N · m for installing the hollow bolt of the brake hose.

13.7.5 Post installation inspection

Perform a road test to check if the braking system performance is good.

13.8 Replacement of brake fluid

13.8.1Discharge brake fluid

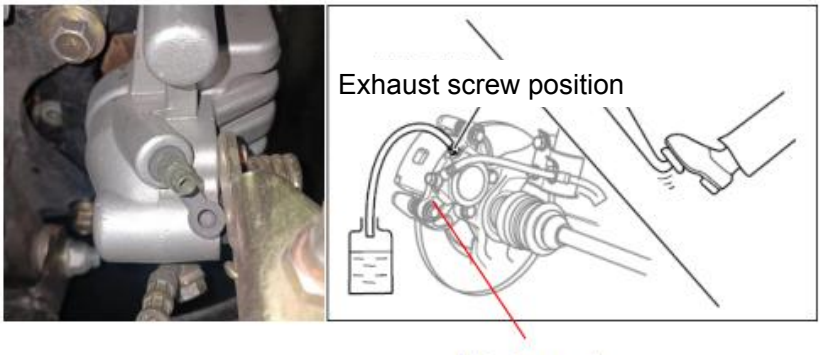
1. Park the vehicle on a stable road surface, place the gear lever in "N" position, and activate the parking brake;

2. Remove the exhaust screw cover;

3. Install a transparent plastic hose on the brake exhaust screw, place the other end of the hose into the brake fluid collector, loosen the exhaust bolt, continuously press the brake pedal, and discharge the brake fluid until no brake fluid flows out.

Attention:

This operation should be performed on each brake to ensure that the brake fluid is completely drained. Do not reuse the drained brake fluid. Install the exhaust screw cover.



Exhaust screw

13.8.2 Add brake fluid

1. Open the front cover of the vehicle and find the fluid reservoir;

2. Remove the brake fluid reservoir cover;

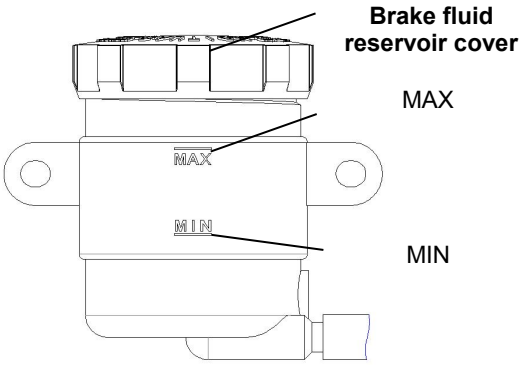
3. Fill the brake fluid reservoir with brake fluid, observe the height of the brake fluid level, and ensure that the brake fluid level is between the "MAX" and "MIN" markings.

Attention:

1. It is prohibited to mix different types of brake fluid. After adding brake fluid, the brake system must be exhausted;

2. Brake fluid has strong corrosiveness. If brake fluid splashes onto the skin or vehicle body paint, please clean with clean water immediately.

3. After filling, tighten the brake fluid cap.



13.8.3 Brake system exhaust

After brake fluid vaporization, disassembly of brake pipelines, or pipeline leakage, gas will exist in brake pipelines of the brake system. When there is air in the braking system, stepping the brake pedal will feel soft, and the brake pedal stroke will increase during braking, weakening the braking effect. In severe cases, it may lead to brake failure. Therefore, when there is air in the braking system, it must be completely exhausted.

When replacing brake system components and draining brake fluid, follow the method of exhausting the brake system to completely drain the oil in the brake pipes. If replacing the brake fluid with new fluid, it is also necessary to exhaust the brake system. The exhaust of the braking system is carried out in the following steps, with the cooperation of two people.

1. Open the front cover of the vehicle, remove the tires, and remove the brake caliper.

2. When the vehicle is not started, press the brake pedal 3-5 times or until the brake pedal force increases significantly.

3. Check the brake fluid level in the brake fluid reservoir assembly, which should be between the "MAX" and "MIN" lines.

4. Lift the vehicle.

5. Clean the area near the exhaust screw and open the exhaust screw cover. Install a transparent plastic hose on the brake exhaust screw and place the other end of the hose into the brake fluid collector.

6. Exhaust the brake system. After continuously stepping on the brake pedal several times, keep it in the pressed state. Use a tubing wrench to loosen the exhaust screw until there is liquid flowing out. When there are no more bubbles in the brake fluid flowing out, tighten the exhaust screw. Repeat the above operations until no more bubbles emerge from the hose.

Attention:

During the exhaust process of the braking system, it is necessary to continuously observe the liquid level in the brake fluid reservoir to ensure that the liquid level remains within the specified range. The brake fluid discharged from the system must not be reused.

7. Tighten the exhaust screw to the specified torque (7-9N · m).

8. Operate steps 4 to 6 in order for the front, rear, left, and right brakes.

9. Carry out road test of the vehicle and check if the pedals always maintain the correct height and firmness.

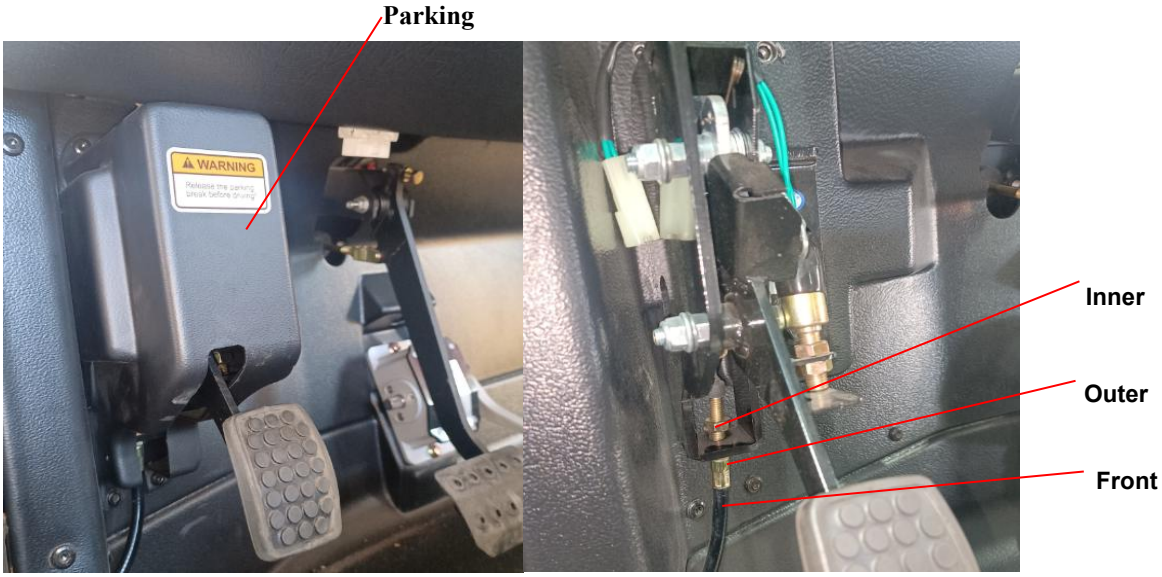
XIV. Parking cable adjustment

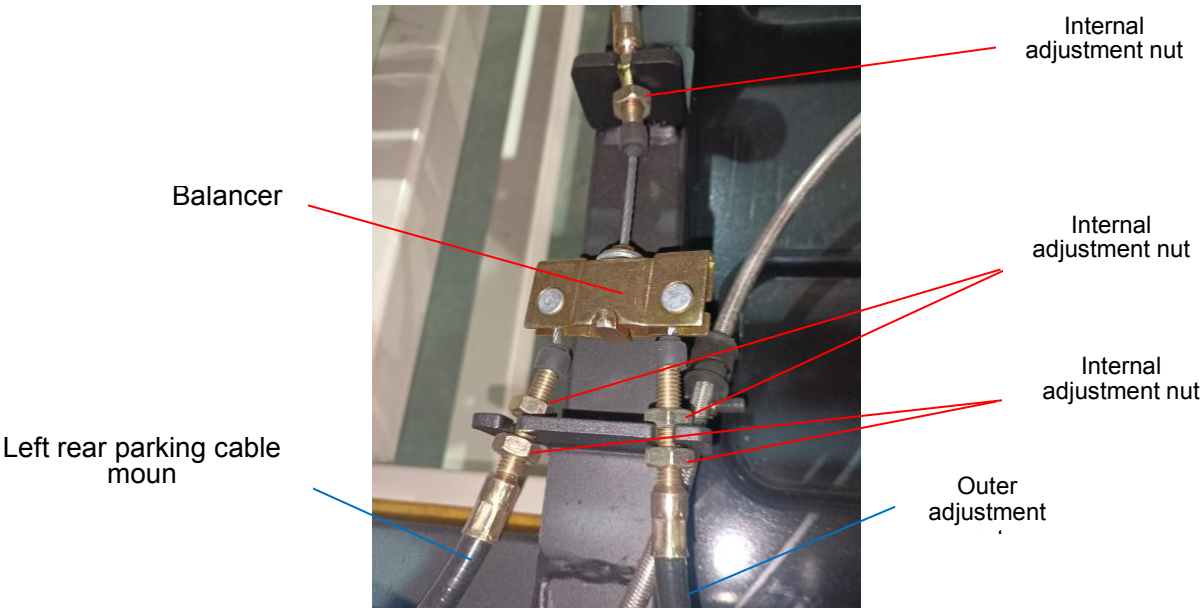
14.1 Preparation work

1. Release the parking pedal, remove the parking pedal cover, and expose the inner and outer adjustment nuts (M8) on the pedal end of the front parking cable.

2. Lift the vehicle to a certain height using a lifting platform, making it easy for personnel to observe the inner and outer adjustment nuts on the balancer end of the front/rear parking

cable.



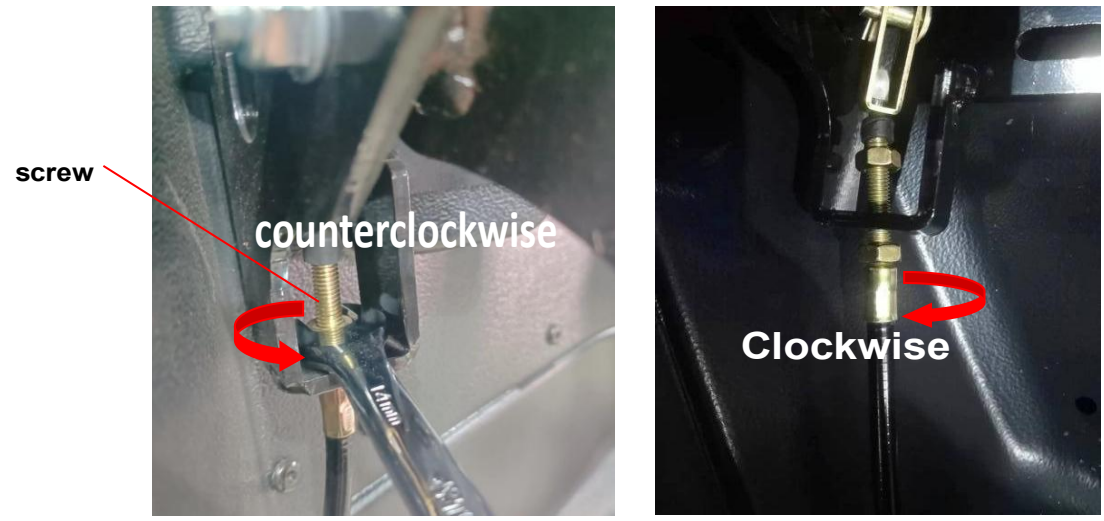


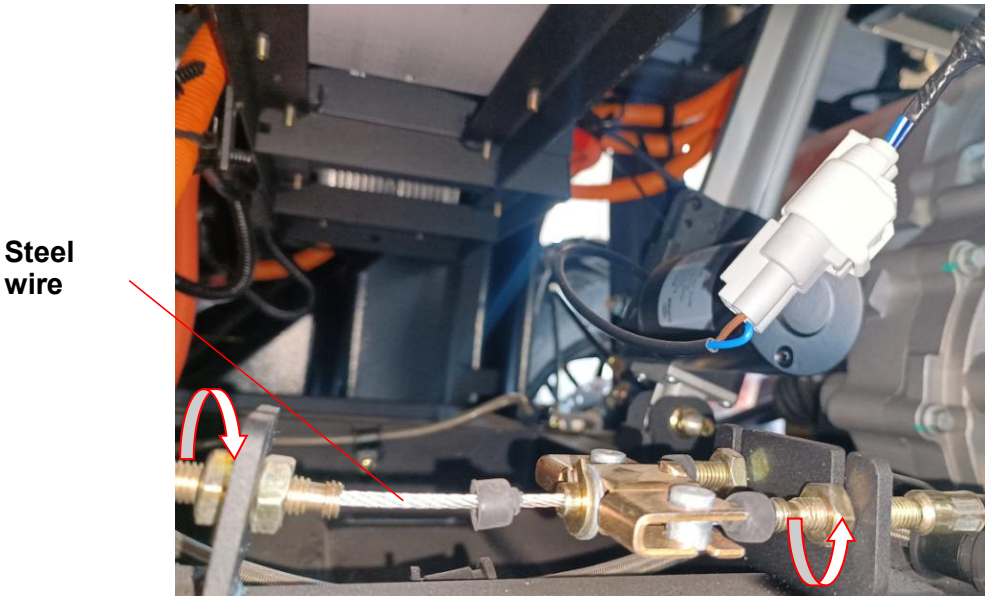
14.2 Adjustment steps (adjust the cable from loose to tight)

14.2.1 Front parking cable

1. Use an open-ended wrench to loosen the inner adjustment nut of the front parking cable pedal end in a counterclockwise direction. Use your fingers to retract it to the upper end of the screw, and then tighten the outer adjustment nut in a clockwise direction.

2. Use an open-ended wrench to loosen the inner adjustment nut of the parking cable balancer in a counterclockwise direction. Use your fingers to retract it to the end of the screw, and then tighten the outer adjustment nut in a clockwise direction.





14.2.2 Left/right rear parking cable

Remove the seat cushion and surrounding thermoforming parts, follow the relevant disassembly steps, and then remove the power supply under the seat. Use an open-ended wrench to loosen the inner adjustment nut of the left/right rear parking cable balancer end in a counterclockwise direction. Use your fingers to retract it to the upper end of the screw, and then tighten the outer adjustment nuts in a clockwise direction.

scre

Attention:

When adjusting the left and right rear parking cables, be sure to ensure that the length of the screw connecting them to the balancer is basically consistent.

14.3Parking performance verification

14.3.1

Rotate the left or right rear wheel by hand. If the wheel is found to be stuck and dragging, it indicates that the parking cable on that side is adjusted too tightly. It is necessary to retract the outer adjustment nut of the cable balancer end counterclockwise by an appropriate number of turns, lock the inner adjustment nut, and then rotate the wheel again to verify until the rear wheel can rotate freely.

14.3.2

Load the vehicle to a fully loaded state (GVWR, Gross Vehicle Weight Rating), and when the parking pedal is pressed on a 20% slope (or inclined platform), the vehicle can remain stationary for 5 minutes, or if there is sliding but the distance of sliding backwards does not exceed 1in. within 5 minutes, it is considered qualified.

14.3.3 Common fault table

Fault	Suspected locations	Measures/Reference
There is noise in the braking	1.Brake shoes (broken, twisted, dirty)	Replacing brake shoes
	2.Brake caliper fixing bolt (loose)	Tighten the brake caliper fixing bolts
	3. Brake disc (with scratches and	Replacing brake discs

system	deformation)	
Brake deviation	1.Brake caliper piston (fixed, stuck)	Replacing brake calipers
	2. Brake disc (with scratches)	Replacing brake discs
	3. Brake shoes (broken, twisted, or oil stains)	Replacing brake shoes
	4．Brake hose (twisted, deformed)	Check the brake hose and replace the brake assembly if necessary.
Brake pedal too soft and insufficient braking	1.Brake system brake fluid leakage	Check for brake fluid leakage in the brake system and replace the brake assembly if necessary.
	2. There is air in the braking system	Test the working status of the caliper and replace the brake assembly if necessary.
	3. Brake disc (with scratches)	Replacing brake discs
	4. Brake shoes (broken, twisted, excessively worn or oil stained)	Replacing brake shoes
	5．Brake master cylinder (internal leakage)	Check the brake master cylinder and replace the brake assembly if necessary.
Brake drag	1. 1. Free stroke of brake pedal (insufficient)	Reinstall the brake pedal
	2. Parking brake lever stroke (cannot be adjusted)	Adjust the parking cable
	3. Front parking brake cable (stuck)	Adjust the parking cable
	4.Left and right parking brake cables (stuck)	Adjust the parking cable
	5.Brake lining (stuck)	Replacing brake shoes
	6. Brake caliper piston (fixed, stuck)	Replacing brake calipers
	7. Brake master cylinder (malfunction)	Check the brake master cylinder and replace the brake assembly if necessary.

XV. Electric Power Steering System EPS

15.1 System working principle

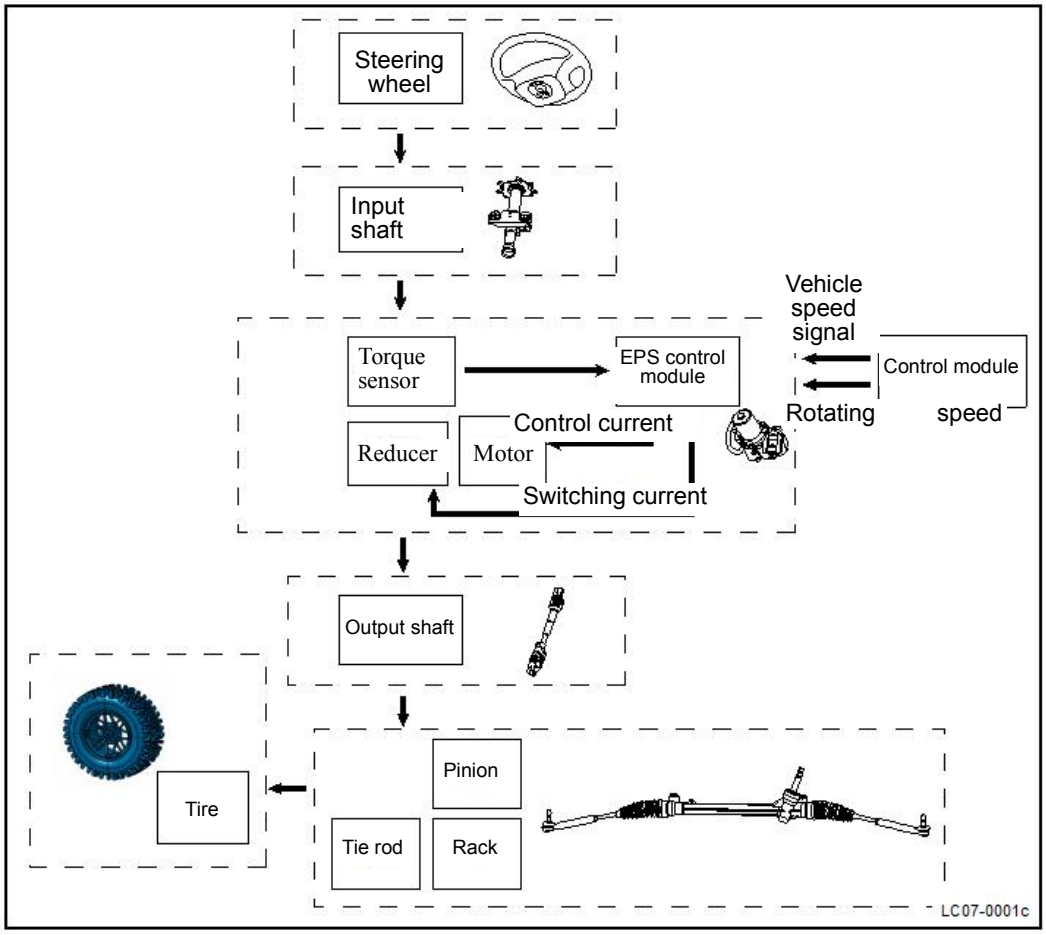
1. The driver controls the steering wheel to rotate.

2. The torque sensor detects the torque signal and sends it to the ECU control unit.

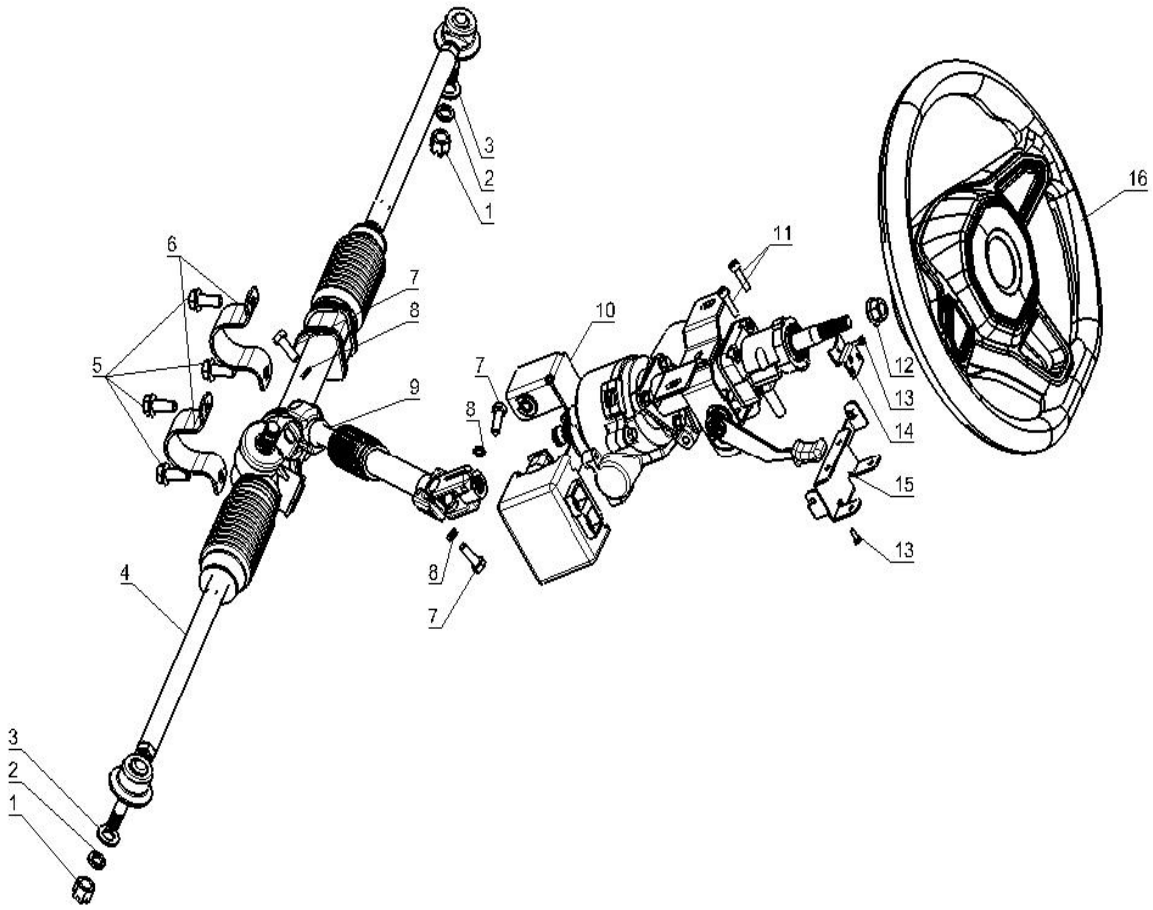
3. The control unit, based on the torque signal and vehicle speed signal obtained, compares them with the pre calibrated assist curve and controls the motor to provide corresponding steering assistance and by.

4. The torque provided by the motor is amplified by the reduction gear and then transmitted to the small gear (Pinion)

5. The torque provided by the driver and the torque provided by the motor are jointly transmitted to the rack through the pinion, and the rack moves laterally under the influence of the combined torque to achieve steering.



15.2 Component diagram



REF. NO.	PART NO.	PART NAME	Q'TY
1	Q381B12	1-type hexagonal slotted nut	2
2	Q40312	Spring washer	2
3	Q401B12	Flat washer	2
4	DC3401100	Steering gear with tie rod assembly	1
5	Q1841025	Hexagon flange bolt	4
6	DC3401101	Steering gear clamp	2
7	Q150B0825	Hexagonal head bolt	3
8	Q40308	Spring washer	3
9	DC3404100	Connecting shaft assembly	1
10	DC3418100	Electric power steering column assembly	1
11	Q218B0625	Hexagon socket head cap screw	4
12	Q32112	Sawtooth anti slip hexagonal flange locking nut	1
13	Q2140412	Cross recessed pan head screws	2
14	DC3721032	Horn contact mounting bracket	1
15	DC3418101	Steering column cover bracket	1
16	DC3402110	Steering wheel assembly	1
17	Q32006	Hexagon flange nuts	4
18	DA3721031	Horn contacts	1

19	Q150B0625	Hexagon headed bolt	2

15.3Diagnostic information and procedures

15.3.1 Diagnostic instructions

Familiarizing oneself with the working principle and various components of the system before starting system diagnosis can help determine the correct fault diagnosis steps, and more importantly, it can also help determine whether the condition described by the customer belongs to normal operation.

15.3.2Common fault table

Fault	Suspected locations	**Measures/Reference**
Difficulty in steering, lack of assistance in steering, poor reset of steering wheel	1.Steering power column controller (poor wiring, water ingress failure or damage)	Confirm wiring status, update program or replace controller
	2. Tires (underinflated or damaged tread)	Inflate or replace tires
	3.Front wheel alignment (incorrect)	Adjust the front wheel alignment
	4. Steering gear tie rod ball joint (worn)	Replace the tie rod ball joint
	5. Swinging arm ball head (worn, stuck)	Replace the swing arm ball joint
	6.Inner shaft of steering column (stuck)	Repair or replace the steering column
	7. Universal joint of upper and lower intermediate shaft assembly (worn and corroded)	Lubricate or replace the intermediate shaft assembly
	8. Steering gear (stuck or damaged rack)	Replace the steering gear
	9.Steering wheel alignment	
Insensitive steering and excessive steering system stroke	1. 1. Steering gear tie rod (loose)	Repair or replace the steering gear
	2. Swinging arm ball head (worn or loose)	Replacing the swing arm ball joint
	3. Steering gear assembly (loose fixing bolts)	Tighten the fixing bolts

Abnormal noise and noise	1. Swinging arm ball head (worn, stuck)	Replace the swing arm ball joint
	2.2.Plastic parts of steering cover (loose fixing bolts)	Tighten the fixing bolts
	3.Steering wheel (loose or no lubrication at the contact point with the horn)	Tighten the fixing nuts; Apply lubricating grease
	4.Steering column (loose fixing bolts)	Tighten the fixing bolts
	5. Steering column (loose inner shaft and bearings)	Repair or replace the steering column
	6.Universal joint of upper and lower intermediate shaft assembly (loose)	Tighten or replace the upper and lower intermediate shaft assemblies
	7.Steering gear assembly (loose fixing bolts)	Tighten the fixing nuts
	8.Steering gear tie rod ball joint (worn)	Replace the tie rod ball joint
	9. Steering gear tie rod (loose)	Repair or replace the steering gear
Tail sway or unstable steering; Abnormal steering during braking	1.Front wheel alignment (incorrect)	Adjust the front wheel alignment
	2.Front suspension (inaccurate positioning)	Adjust and tighten the front suspension components
	3.Wheels and tires (out of balance)	Replace tires and rims
	4.Swinging arm (loose)	Tighten or replace the lower swing arm bushing
	5. Vibration damping spring (broken/or weak)	Replace the shock absorber
	6. Hydraulic brake system (loose or malfunctioning)	Repair brake system
	7.Brake disc (deformed)	Replace brake discs
	8. Rear suspension (inaccurate or loose positioning)	Adjust and tighten the rear suspension components

XVI. Seat belt system

16.1Specifications

16.1.1 Fastener specifications

Fastener Name	Model	Torque（N.m）
Left/right seatbelt retraction fastening assembly	English 7/16×27,British nuts, spring washers	70±5
Left/right seat belt buckle fastening assembly	English 7/16×35,British nuts, spring washers, and spacer rings (H8)	70±5
Left/right seat belt fastening assembly	English 7/16 30. British nuts, spring washers, and spacer rings (H3)	70±5

16.2Description and operation

16.2.1Description and Operation

Safety belt

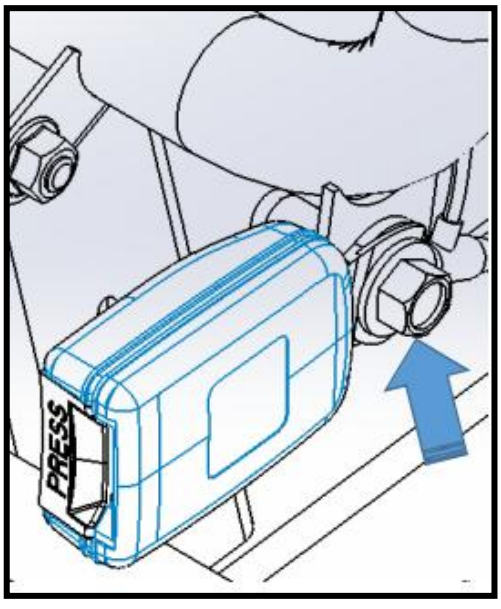
- Precautions

All vehicles are equipped with retracters. The seat belt has an automatic locking function. The locking function is activated when the seatbelt is quickly pulled out of the retracter completely. The locking function can prevent the seatbelt from being pulled out beyond the allowed folding position. When the seat belt is fully retracted into the retracter, this function can be cancelled. After canceling the locking function, the seat belt will be unlocked. After canceling the locking function, the seat belt can be pulled out of the retracter.

- Function

Vehicle seats have seat belts, which are the main way to protect passengers. In the following situations, seat belts can keep passengers inside the passenger compartment and gradually reduce the impact force:

- ◆ Frontal impact type collision
- ◆ Rear impact type collision
- ◆ Side impact type collision
- ◆ Flip over collision



16.3 Dismantling and installation

16.3.1 Replacement of left seat belt buckle

Disassembly procedure:

1. Remove the fastener of the left seat belt lock buckle;

2. Remove the left seat belt buckle.

1. Installation procedure:

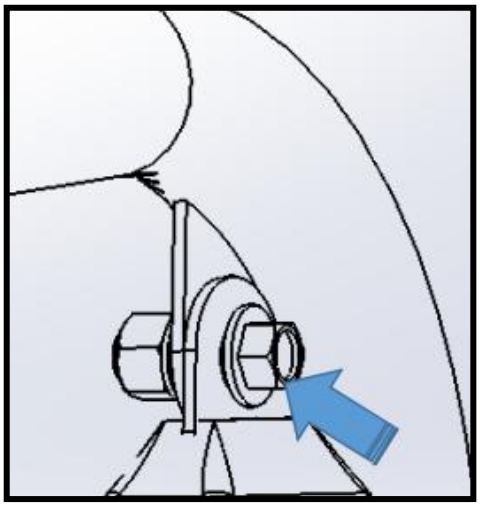
1. Install and tighten the left seat belt lock fastener;

Attention: The disassembly method for the left/right seat belt buckle is the same.

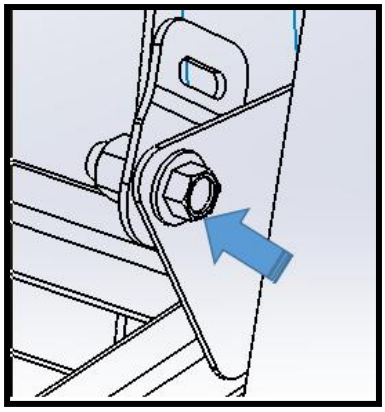
16.3.2 Replacement of left seat belt assembly

Disassembly procedure:

1. Remove the fastener of the upper fixing panel of the left seat belt assembly;

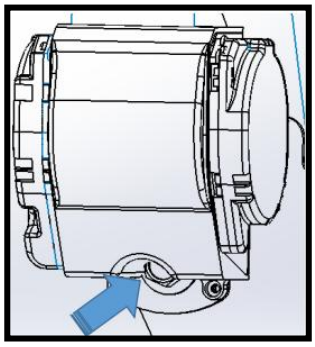


2. Remove the fastener of the lower fixing panel of the left seat belt;



3. Remove the fastener of the left seat belt retracter assembly;

4. Remove the left seat belt assembly.



Installation procedure:

1. Install the fastener of the left seat belt retracter assembly and tighten it.

Torque: 70 ± 5 N. m

2. Install the fastener of the lower fixing panel of the left seat belt and tighten it.

Torque: 70 ± 5 N.m

3. Install the fastener of the left seat belt upper fixing panel and tighten it.

Torque: 70 ± 5 N.m

Attention: The disassembly method for the left/right seat belt assembly is the same.

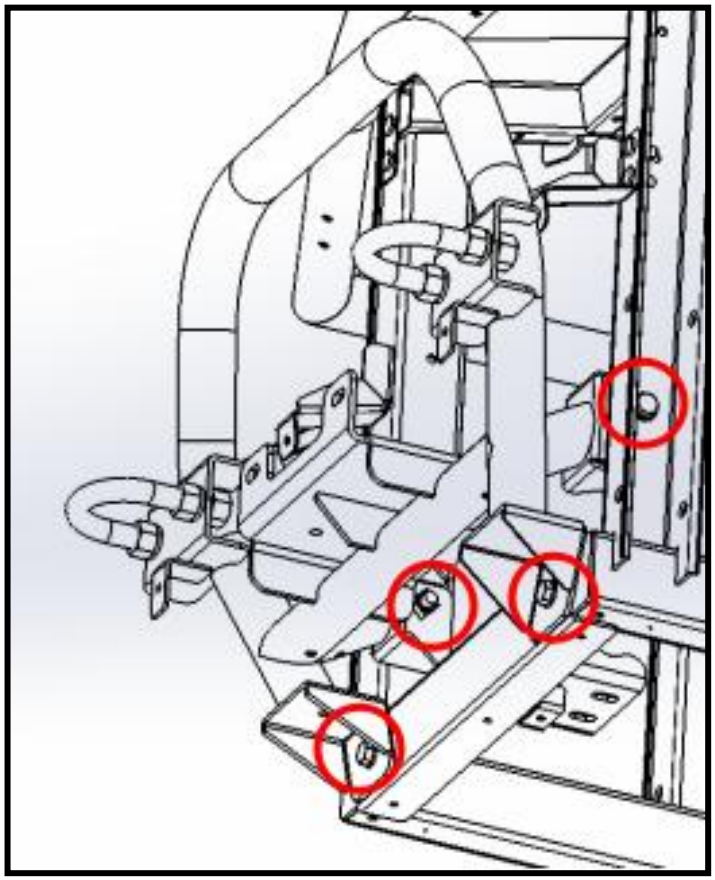
XVII. Front bumper replacement

17.1 Dismantling and installation

Dismantling procedure

1. Dismantle the fixing bolts (Q1841025) of the welding parts of the front bumper assembly;

3. Disassemble the welding parts of the front bumper assembly.



Installation procedure

Install the fixing bolts (Q1841025) of the welding parts of the front bumper assembly (Q1841025); Torque: 25 ± 3N. m

1. Install the front bumper body.

XVIII. Replacement of rear cargo box

18.1Specifications

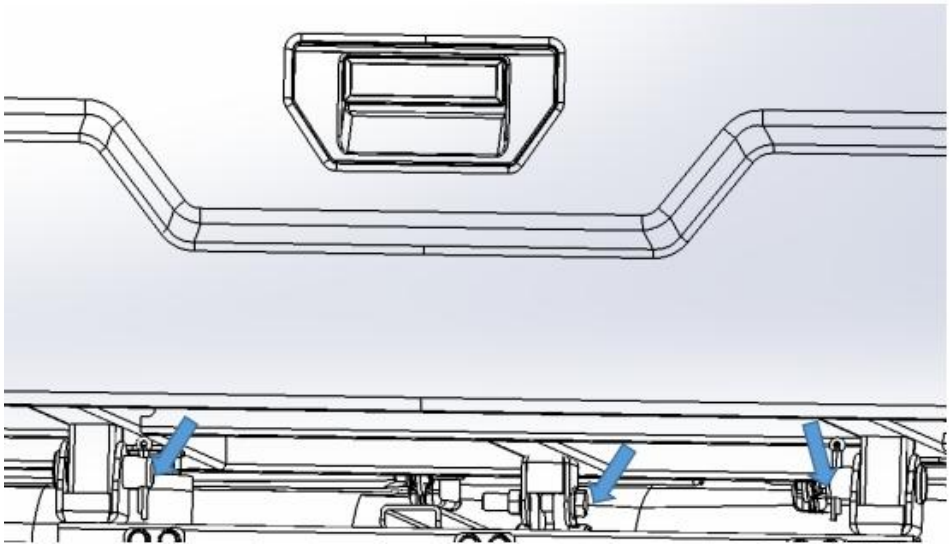
18.1.1 Fastener specifications

Fastener Name	Model	Torque（N.m）
Pin shaft	Q5102055	/
Split pin	Q5005040	/
Hexagonal flange bolt	Q1841060	25±3
All metal hexagonal flange locking nut	Q33010	/

18.2 Dismantling and installation

Dismantling procedure

1. Turn on the switch and lift the cargo box;
2. Dismantle the hexagonal flange bolts and all metal hexagonal flange locking nuts
3. Dismantle the pin shaft and split pin;
4. Disassemble the cargo box.



Installation Procedure

1. Install the cargo box pivot pin and split pin;

2. Install hexagonal flange bolts and all metal hexagonal flange locking nuts on the cargo box;

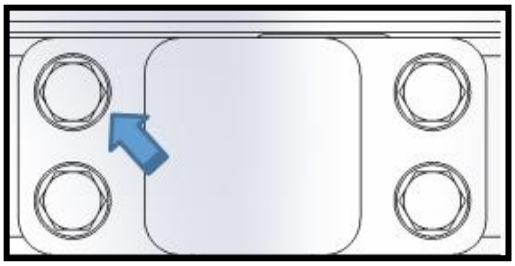
Torque: 25 ± 3 N.m (metric)

Attention: When disassembling and assembling the cargo box, it is recommended to be carried out by two people simultaneously.

XIX. Replacement of rear towing hook

19.1 Dismantling and installation

Dismantling procedure



1. Remove the fixing bolt (Q1841025) for the towing hook;

2. Remove the towing hook.

Installation procedure

1. Install the rear towing hook fixing bolt (Q1841025);

Torque: 25 ± 3 N.m (metric)

XX. Windshield

20.3 Dismantling and installation

Dismantling procedure

1. Remove the half round head hexagonal bolt on the windshield;

2. Remove the windshield;

3. Remove the fixture.

Installation Procedure

1. Install 6 fixtures and secure them with cylindrical head hexagonal bolts. Don’t lock them tightly for later easy position adjustment;

2. Install the lower windshield, secure it with a hemispherical screw washer, an inner lock washer M6, and a half round head hex bolt M6 * 20, adjust the position of the glass, and lock the fixture;

3.Install the windshield opening device;

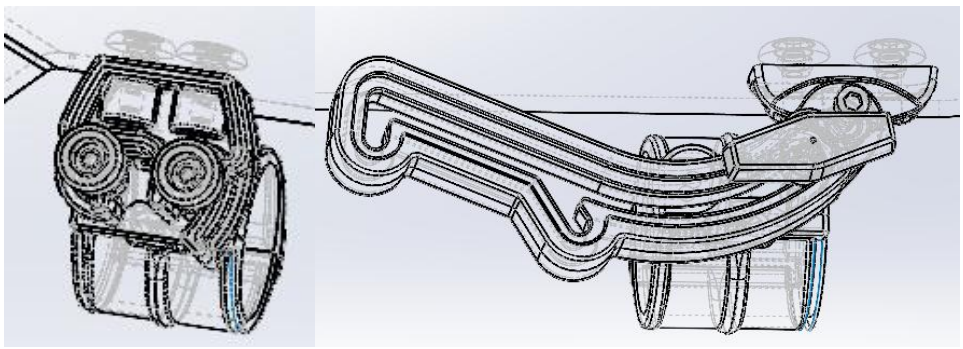
Install the windshield opening device 2 and secure the lock with hemispherical screw washers, internal locking washers M6, and half round head hex bolts M6 * 20;

Install the windshield opening device 1 and fix it with T-bolts and M6 * 20 cylindrical head hexagon bolts.

Install the windshield opening device 3 and secure the lock with hemispherical screw washers, internal locking washers M6, and half round head hex bolts M6 * 20

Install the windshield opening device 4 and fix it with a half round head hexagonal bolts M6 * 45;

3. Adjust the position of the upper windshield fixtures and lock the bolts.



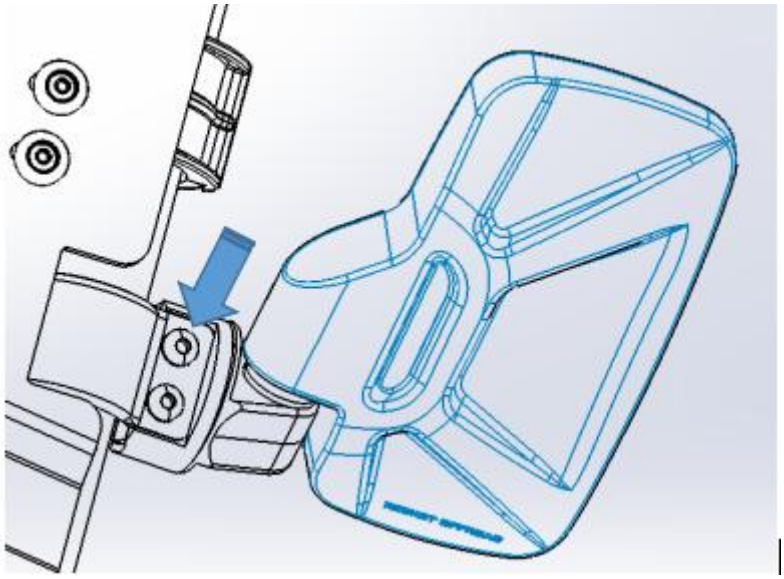
XXI.Rearview mirror system

21.3 Dismantling and installation

Dismantling procedure

1. Remove the fixing bolts on the rearview mirror;

2. Remove the rearview mirror.



Installation Procedure

1. Install the fixing bolts on the rearview mirror and tighten them.

Attention: The disassembly method for the left/right rearview mirror is the same.

XXII. Backrest seat system

22.1Specifications

22.1.1Fastener specifications

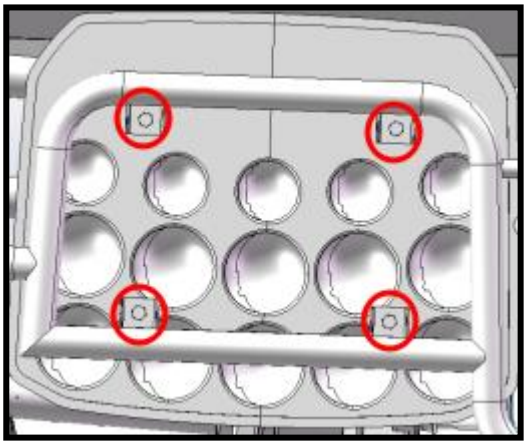
Fastener Name	Model	Torque（N.m）
Fixed backrest assembly	Hexagonal flange bolt(Q1840820)	25±3N·m
Fixed headrest assembly	Flat round head hexagon socket screw M6x12	5-8N·m
Fixed central armrest assembly	Central armrest pivot screw(Q218B08120) All metal hexagonal flange locking nut(Q33008)	
Fixed central armrest strap	Hexagonal flange bolt(Q1841020)	

assembly	All metal hexagonal flange locking nut(Q33010)	

22.3Dismantling and installation

Dismantling procedure

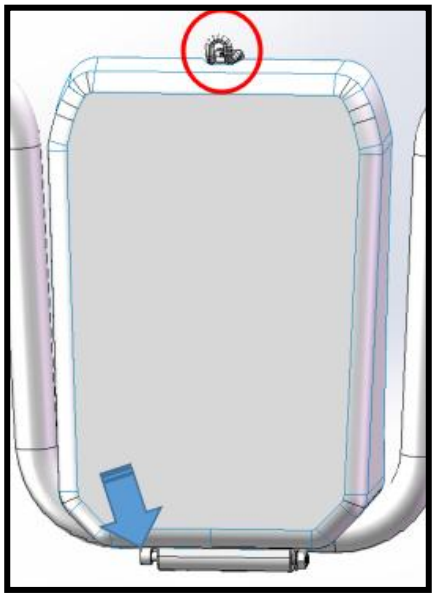
1. Remove the seat by pulling it out from the front end



2. Removing left/right backrest

◆Remove the left/right backrest fixing bolts

◆Remove the left/right backrest



3. Remove the center armrest

◆Remove the central armrest fixing screw

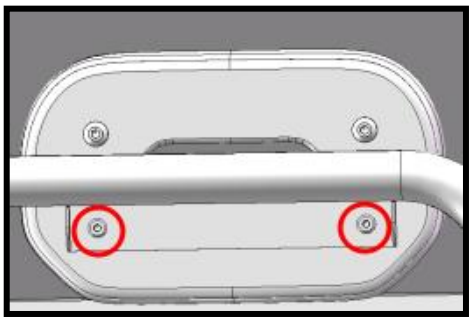
◆Remove the central armrest

4. Remove the left/right headrest

◆Remove the fixing screws of the left/right headrest

◆Remove the left/right headrest

Installation procedure



1. Install the seat and install it in place according to the insertion label;
2. Install the left/right backrest fixing bolts, torque 25 ± 3N · m;
3. Install the central armrest fixing screw and fasten the central armrest strap;
4. Install the left/right headrest fixing screws, torque 5-8N · m

XXIII.Interior and exterior decoration system

23.1 Fastener Table

Name	Model	Torque（N.m）
Cross recessed countersunk head screw	6*16	3~5
Flat round head hexagon socket screw	M5*20	3~5
Flat round head hexagon socket screw	M6*20	3~5
Flat round head hexagon socket screw	M6*12	3~5
Open end round head pop rivets	4*16	

Plastic parts replacement procedure:

Warning!

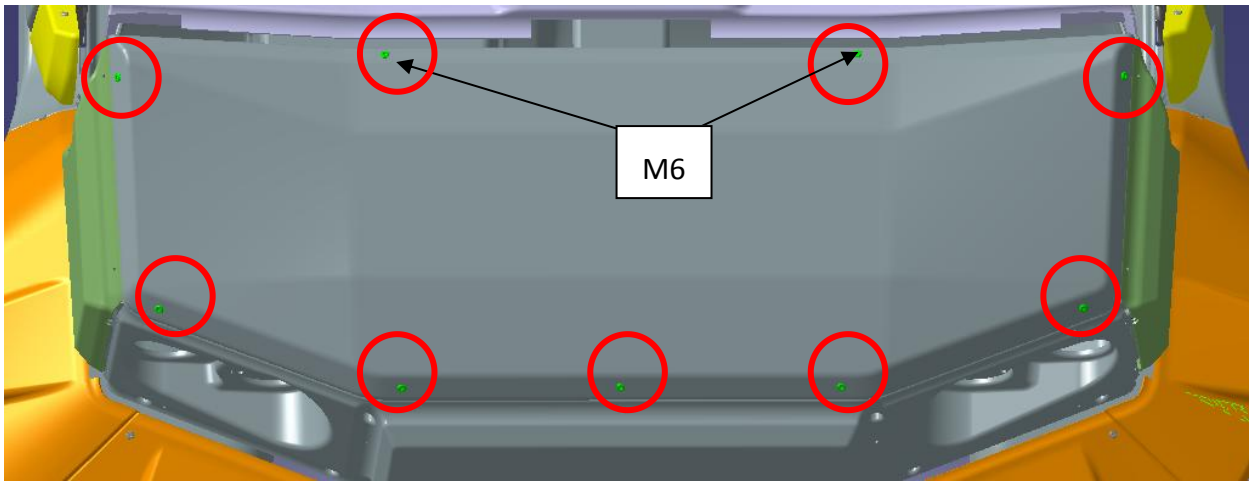
Refer to "Warning and Precautions" for "Warnings on disconnecting the battery".

Attention:

Please use professional repair tools when replacing the trim panel, otherwise it is easy to scratch the interior decoration.

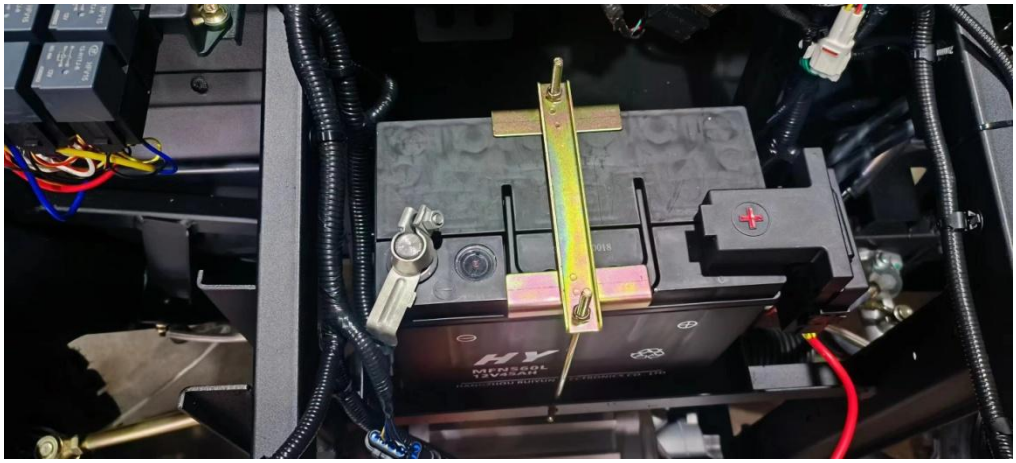
23.2 Replace the hood body

Using a 5/32in.hex wrench, remove 2 M6 * 20 flat head hex screws and 7 M5 * 20 flat head hex screws, and then remove the hood body. Replace the original hood with a new one, and secure it with 2 M6 * 20 flat head hex screws and 7 M5 * 20 flat head hex screws.

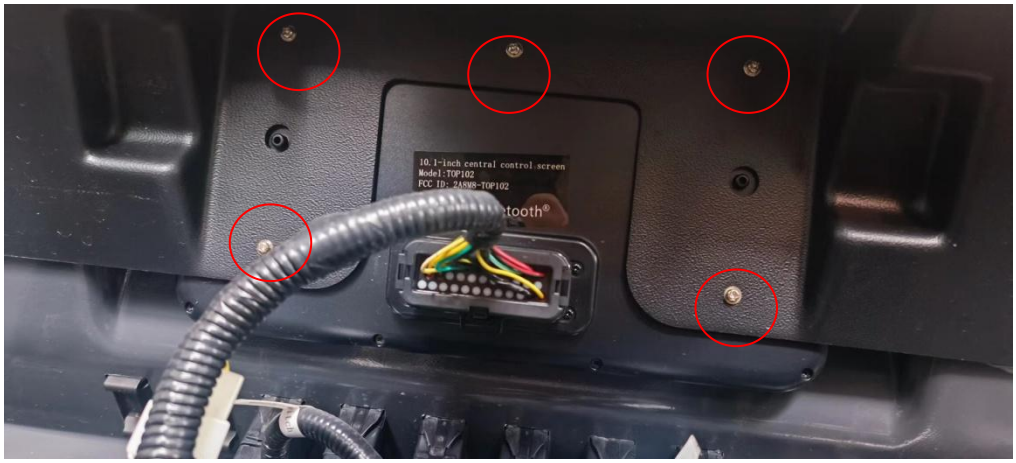


23.3 Replace the instrument panel assembly

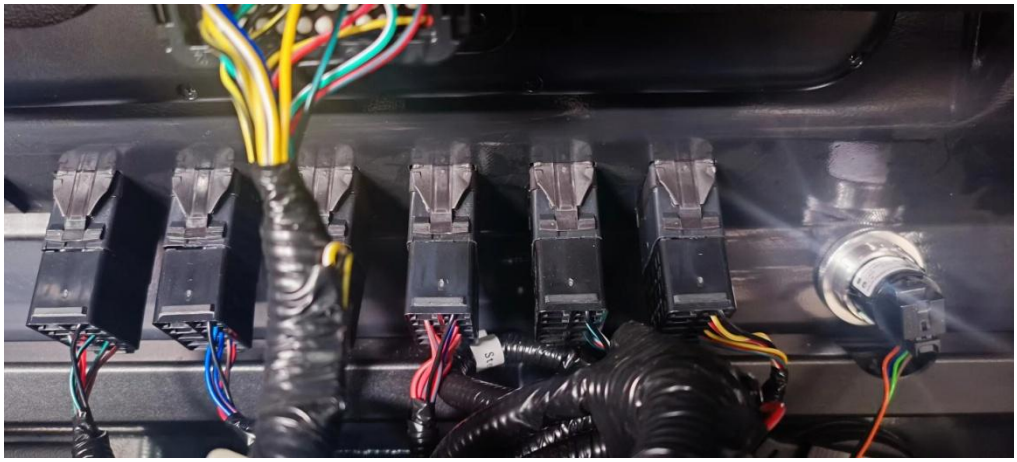
23.3.1. Disconnect the negative cable of the battery.



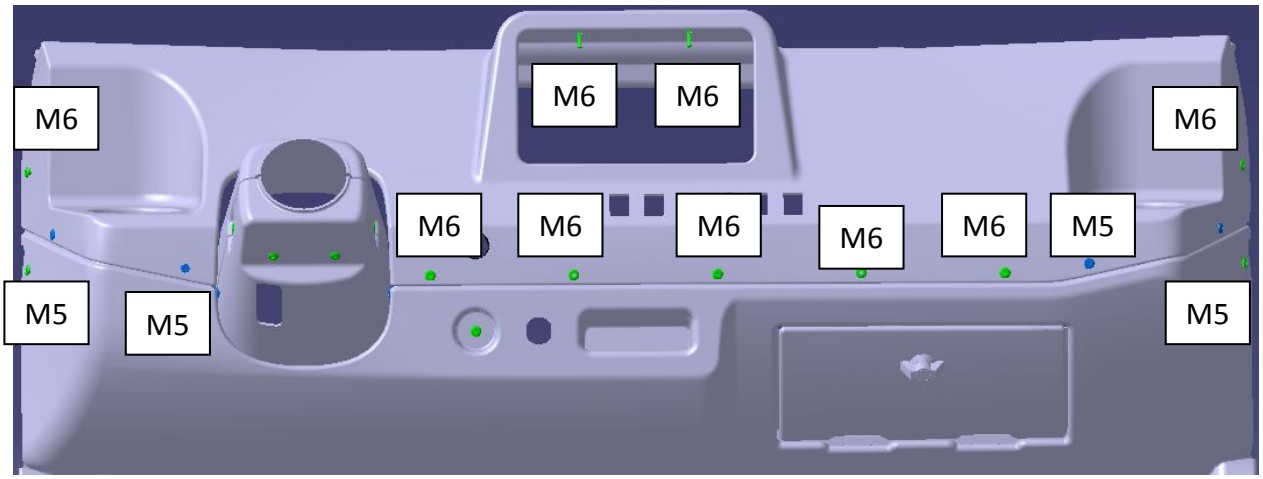
23.3.2. Remove the PAD display screen: Use a Phillips screwdriver to remove the 5 cross slot self tapping screws, and then remove the PAD display screen.



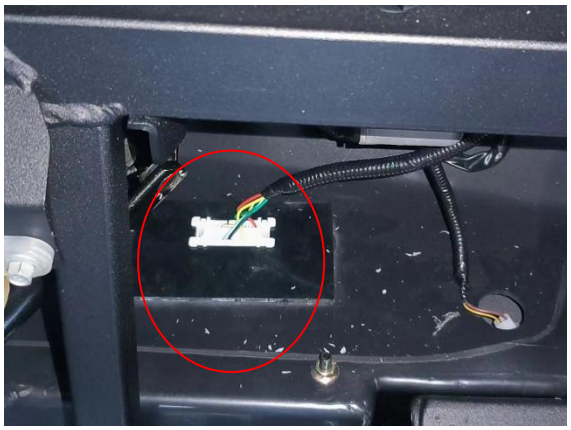
23.3.3. Disassembling switches: Remove 7 switches.



23.3.4. Replace the upper dashboard: Use a 5/32in. hex wrench to remove 9 M6 * 20 flat head hex screws and 4 M5 * 20 flat head hex screws, and then remove the upper dashboard. Replace the original dashboard with the new one and secure it with 9 M6 * 20 flat head hex screws and 4 M5 * 20 flat head hex screws.

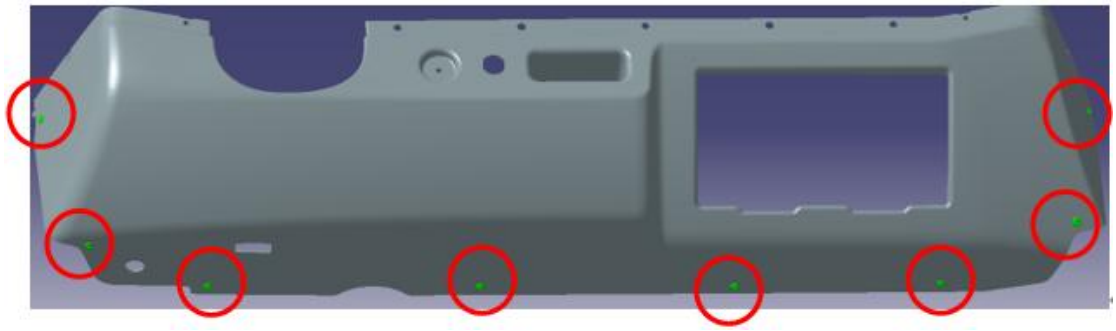


23.3.5. Remove the OBD interface.

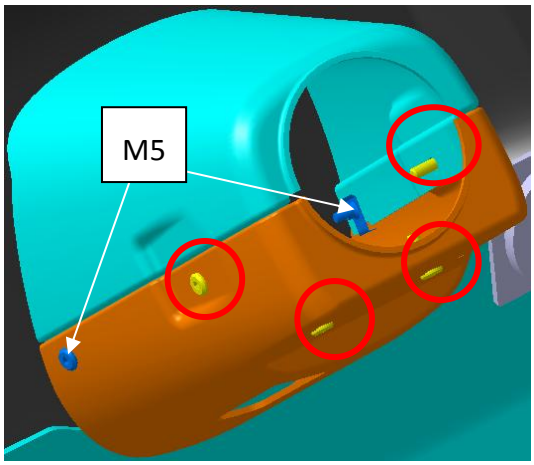


23.3.6 Remove the induction coil: Use a 5/32in. hex wrench to remove 1 M6 * 20 flat head hex screw and remove the induction coil

23.3.7.Replace the lower dashboard: Use a 5/32in. hex wrench to remove 8 M6 * 20 flat head hex screws, and then remove the lower dashboard. Replace the original lower dashboard with the new one and secure it with 8 M6 * 20 flat head hex screws.



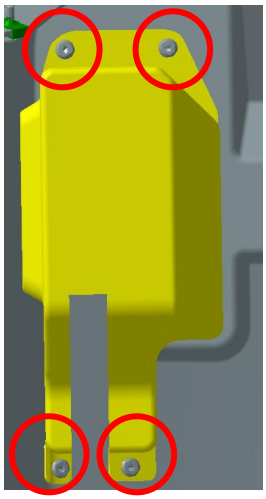
23.3.8 Replace the steering column cover: Use a 5/32in. hex wrench to remove 4 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws, and then remove the steering column cover. Replace the original steering column cover with a new one and secure it with 4 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws.



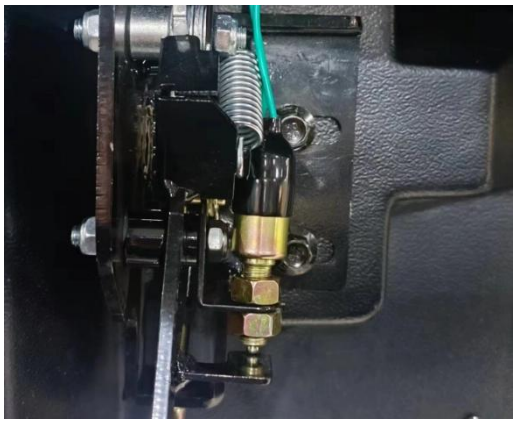
23.4 Replace the vehicle floor assembly

23.4.1. Replace parking pedal cover: Use a 5/32in. hex wrench to remove 4 M6 * 20 flat head hex screws, and then remove the parking pedal cover. Replace the original parking

pedal cover with a new one and secure it with 4 M6 * 20 flat head hex screws.



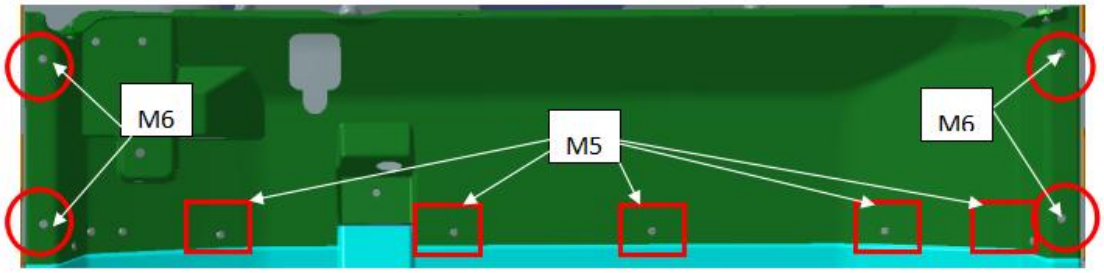
23.4.1 Remove the parking pedal: Use a No. 13 wrench or socket to remove the two hexagonal flange bolts, and then remove the parking pedal.



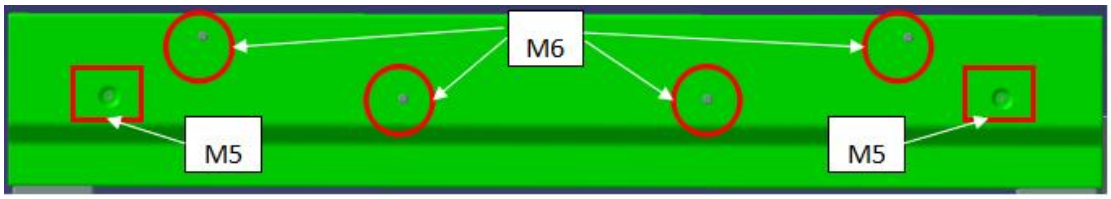
23.4.2 Dismantle the accelerator pedal: Use a No. 10 wrench or socket to remove the two hexagonal flange bolts, and then remove the accelerator pedal.

23.4.3 Replace the front panel lower guard: Use a 5/32in. hex wrench to remove 4 M6 * 20 flat head hex screws and 6 M5 * 20 flat head hex screws, and then remove the front panel

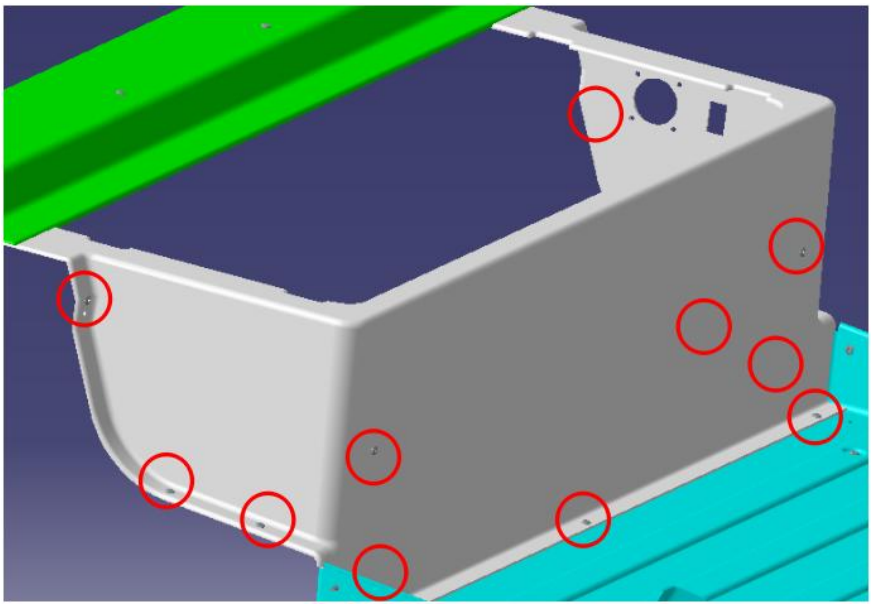
lower guard. Replace the originalfront panel lower guard with a new one and secure it with 4 M6 * 20 flat head hex screws and 6 M5 * 20 flat head hex screws.



23.4.4Replacing the battery repair cover: Use a 5/32in. hex wrench to remove 4 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws, and then remove the battery repair cover. Replace the original battery repair cover with a new one and secure it with 4 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws.



23.4.5.Replace the seat guard body: Use a 5/32in. hex wrench to remove 13 M6 * 20 flat head hex screws, and then remove the seat guard body. Replace the original seat guard body with a new one and secure it with 13 M6 * 20 flat head hex screws.

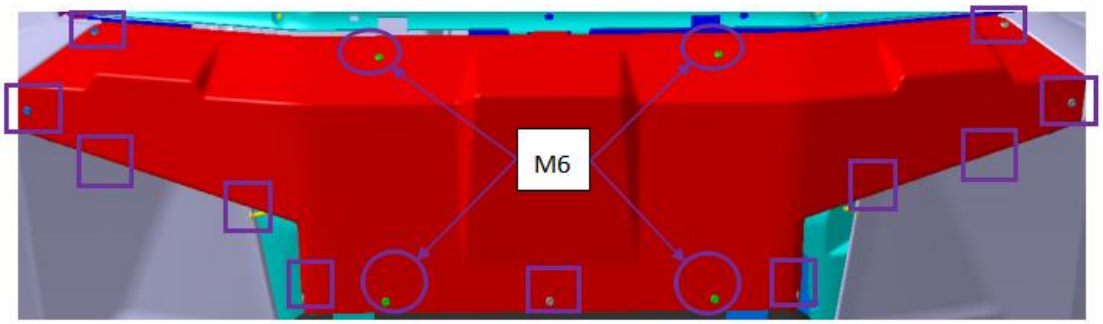


23.4.6 Replacing the driver's area floor: Use a 5/32in. hex wrench to remove 10 M6 * 20 flat head hex screws, and then remove driver's area floor. Replace the original driving

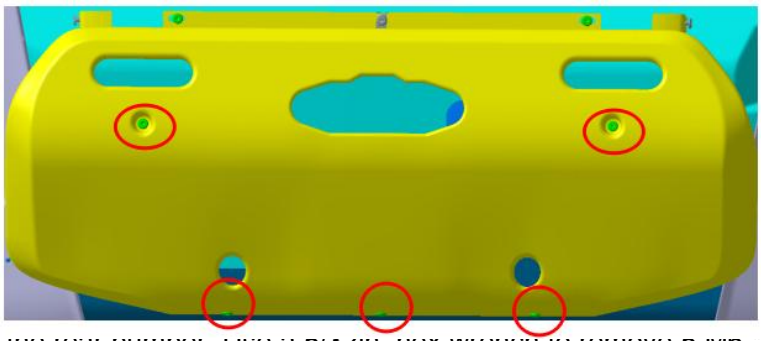
area floor with a new one and secure it with 10 M6 * 20 flat head hex screws.

23.5 Replace the bumper assembly

23.5.1. Replace front bumper decorative parts: Use a 5/32in. hex wrench to remove 4 M6 * 20 flat head hex screws and 11M5 * 20 flat head hex screws, and then remove the front bumper decorative parts. Replace the original driving area floor with a new one and secure it with 4 M6 * 20 flat head hex screws and 11 M5 * 20 flat head hex screws.

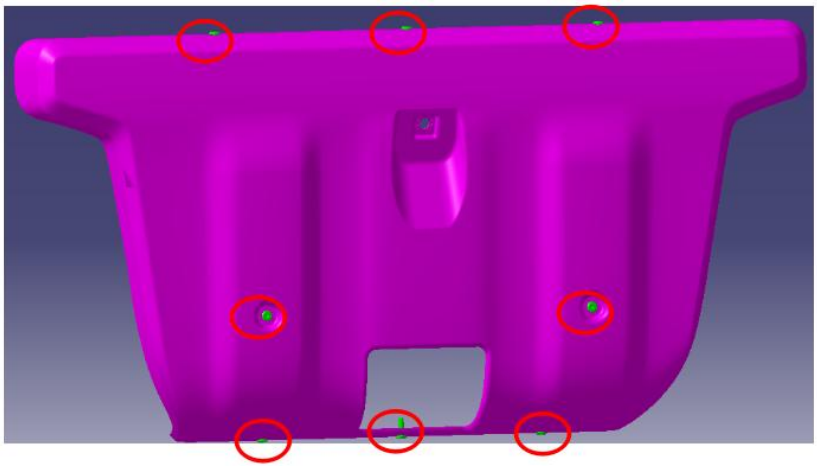


23.5.2.Replace the front bumper: Use a 5/32in. hex wrench to remove 5 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws, and then remove the front bumper. Replace the original front bumper with a new one and secure it with 8 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws.



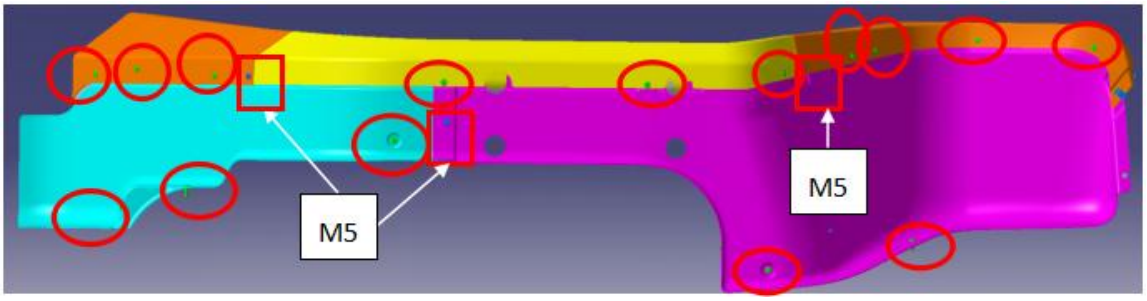
23.5.3.Replace the rear bumper: Use a 5/32in. hex wrench to remove 5 M6 20 flat head hex screws, and then remove the rear bumper. Replace the original rear bumper with a

new one and secure it with 5 M6 * 20 flat head hex screws.

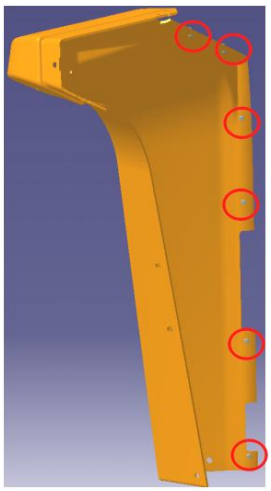


23.6 Replace the side panel assembly

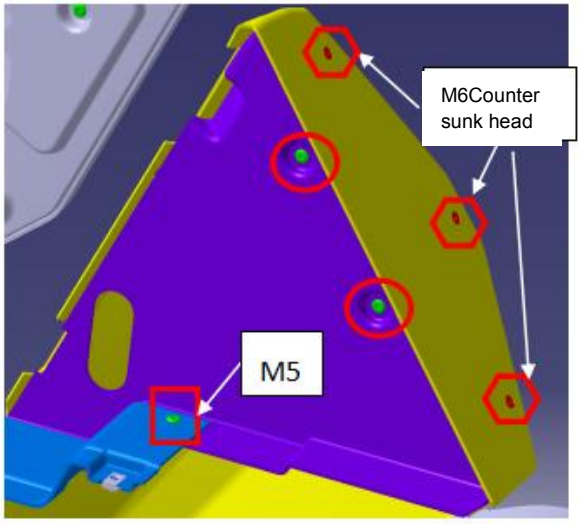
23.6.1. Replacing the mudguard: Use a 5/32in. hex wrench to remove 15 M6 * 20 flat head hex screws and 3 M5 * 20 flat head hex screws, and then remove the mudguard. Replace the original mudguard with a new one and secure it with 15 M6 * 20 flat head hex screws and 3 M5 * 20 flat head hex screws.



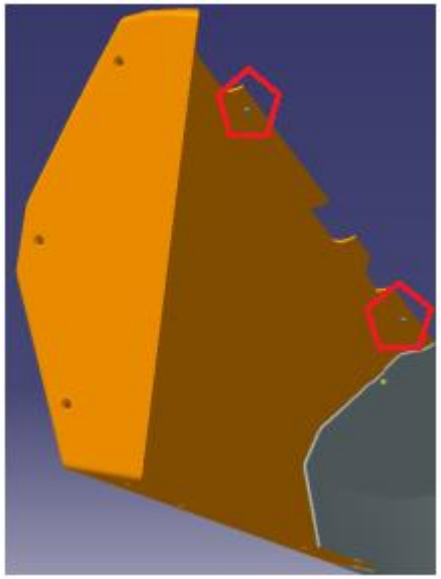
23.6.2 Replace the left (right) front wheel arch: First, use a hand drill to dismantle the 6 rivets, and then remove the left (right) front wheel arch. Replace the original left (right) front wheel arch with a new one and fix it with 6 rivets.



23.6.3 Replace the left (right) rear wheel arch inner panel: Use a 5/32in. hex wrench to remove 2 M6 * 20 flat head hex screws, 1 M5 * 20 flat head hex screw, and 3 cross groove countersunk head screws, and then remove the left (right) rear wheel arch inner panel. Replace the original left (right) rear wheel arch inner panel with a new left (right) rear wheel arch inner panel, and fix it with 2 M6 * 20 flat head hex screws, 1 M5 * 20 flat head hex screw, and 3 cross recessed countersunk head screws.



23.6.4 Replace the left (right) rear wheel arch: First, use a hand drill to dismantle the two rivets, and then remove the left (right) rear wheel arch. Replace the original left (right) rear wheel arch with a new one and fix it with 2 rivets.

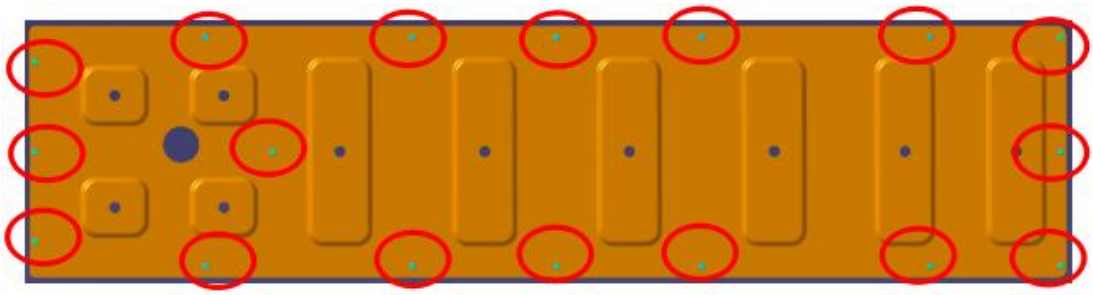


23.6.5.Replacing the left (right) door sill outer panel: Use a 5/32in. hex wrench to remove 2 M6 * 20 flat head hex screws, Use a hand drill to remove the 3 rivets, and then remove the outer panel of the door sill.Replace the original left (right) door sill outer panel with a new one, and fix it with 2 M6 * 20 flat head hex screws and 3 rivets.

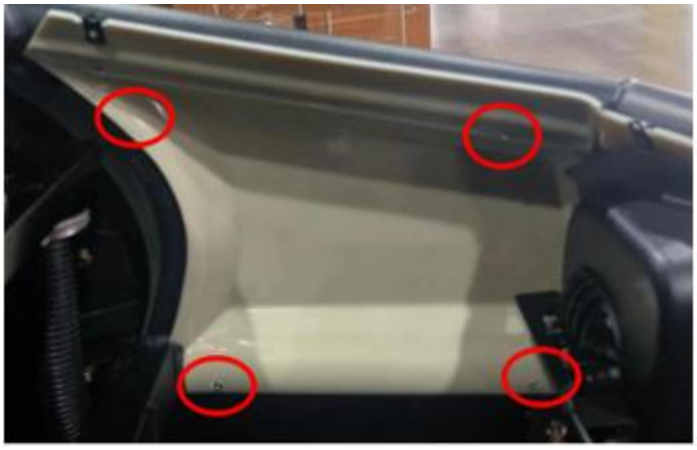
23.6.6 Replace the left (right) side door front triangle trim panel: Use a 5/32in. hex wrench to remove 4 M6 * 20 flat head hex screws, and then remove the left (right) side door front triangle trim panel. Replace the new left (right) side door front triangle trim panel with the original left (right) side door front triangle trim panel and fix it with 4 M6 * 20 flat head hex screws.

23.7 Replace the body decoration assembly

23.7.1. Replace the bottom panel guard: Use a 5/32in**.** hex wrench to remove 17 M6 * 20 flat head hex screws, and then remove the bottom panel guard. Replace the original bottom plate guard with a new one and secure it with 17 M6 * 20 flat head hex screws.

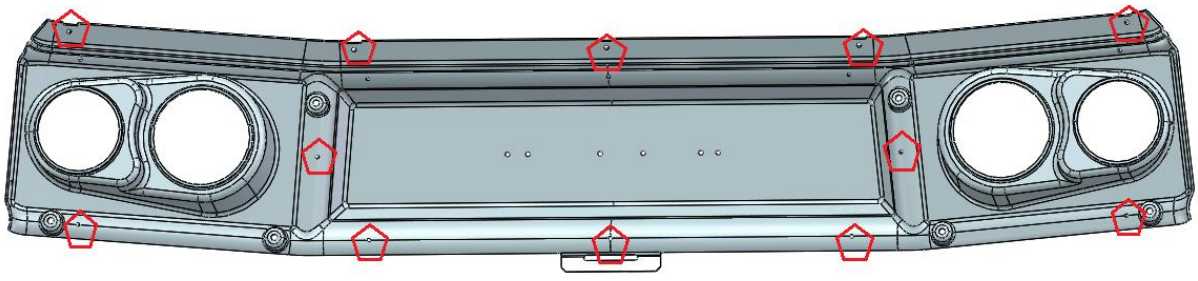


23.7.2 Replace the left (right) decorative part in front of the car: First, use a hand drill to dismantle the four rivets, and then remove the left (right) decorative part in front of the car. Replace the original front left (right) decorative part with a new one and fix it with 4 rivets.



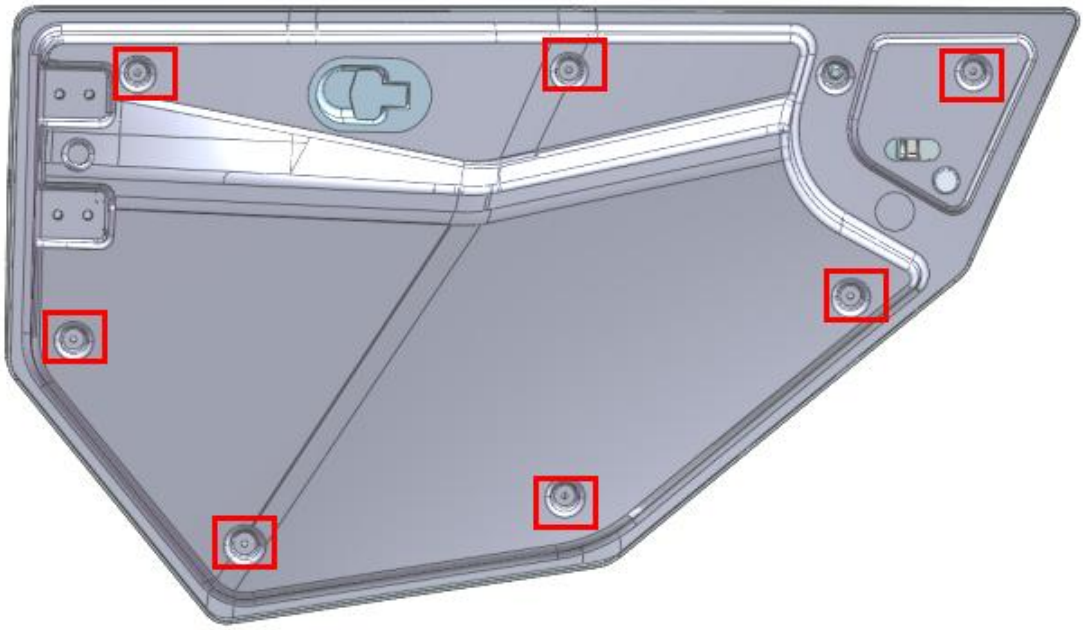
23.7.3 Replace the front decorative panel: Use a No. 8 wrench or socket to remove the 4 hexagonal flange bolts and remove the front lights.

After removing the car lights, use a hand drill to dismantle the 12 rivets, and then remove the front decorative panel of the car. Replace the original front decorative panel with anew one and secure it with 12 rivets.



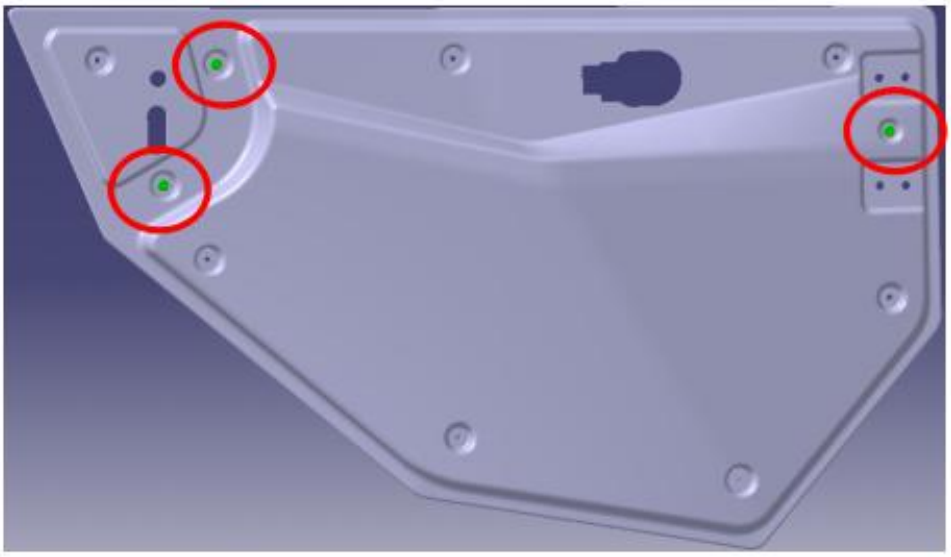
23.8 Replace the door assembly

23.8.1 Replace the left (right) door outer panel:Use a 5/32in. hex wrench to remove 7 M5 * 20 flat head hex screws, and then remove the door outer panel. Replace the original left (right) door outer panel with a new one and secure it with 7 M5 * 20 flat head hex screws.



23.8.2 Remove the door latch: Use a Phillips screwdriver to remove the two cross groove self tapping screws, and then remove the door latch.

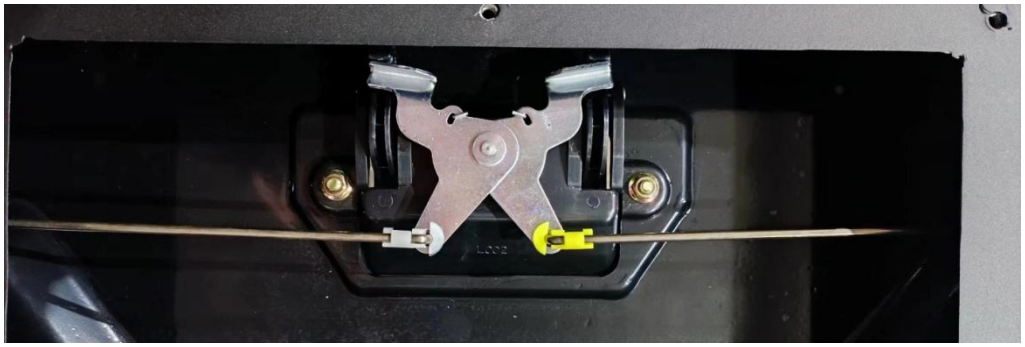
23.8.3Replace the left (right) vehicle door inner panel: Use a No. 13 wrench to remove the 4 hex screws, remove the door, and then use a 5/32in. hex wrench to remove the 3 M6 * 20 flat head hex screws, and then remove the door inner panel. Replace the original left (right) door inner panel with a new one and secure it with 3 M6 * 20 flat head hex screws.



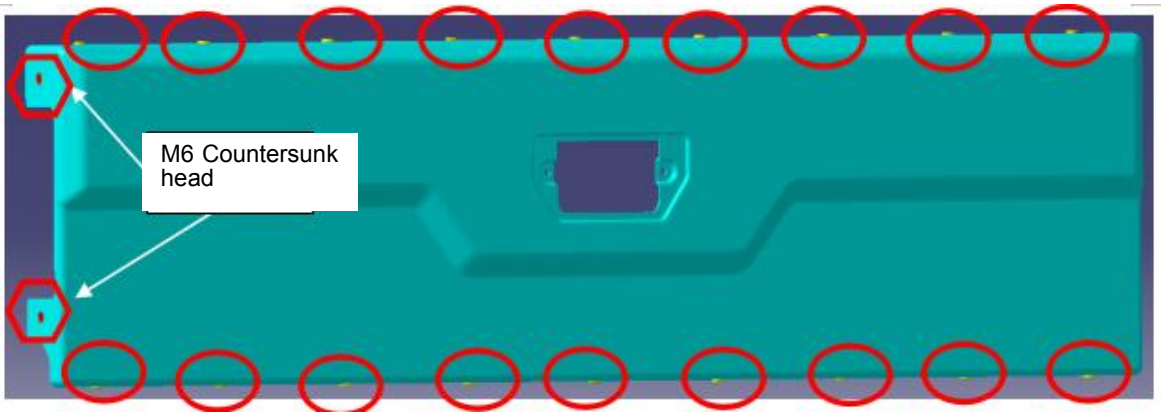
23.9 Replace the cargo box guard assembly

23.9.1. Replace the rear door inspection cover of the cargo box: Use a 5/32in. hex wrench to remove 6 M6 * 20 flat head hex screws, and then remove the rear door inspection cover of the cargo box. Replace the original rear door maintenance cover with a new one and secure it with 6 M6 * 20 flat head hex screws.

23.9.2. Replace the outer panel of the rear door of the cargo box: Remove the cargo box lock cable.

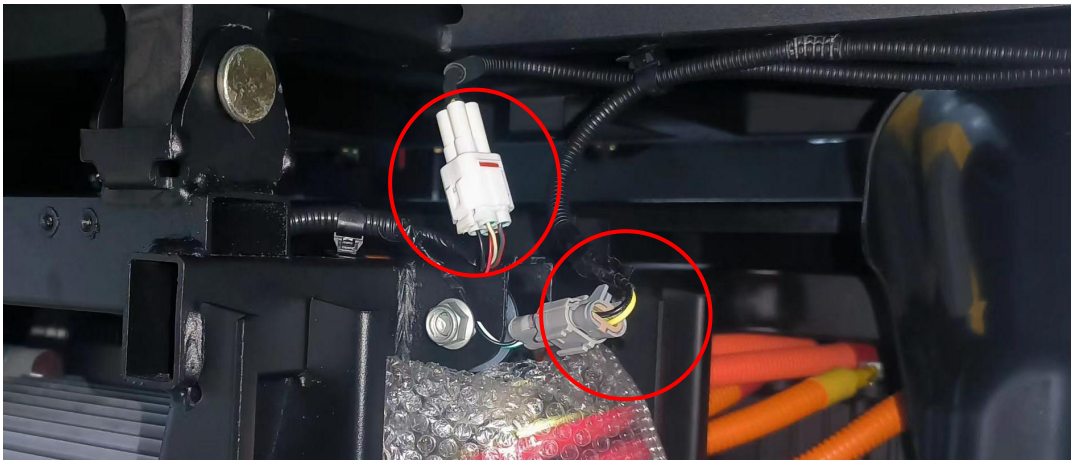


Use a Phillips screwdriver to remove the 4 cross recessed countersunk head screws, use a 5/32in. hex wrench to remove the 18 M6 * 20 flat head hex screws, and then remove the inspection cover panel of the rear door of the cargo box. Replace the original outer panel of the trunk rear door with a new one, and fix it with 18 M6 * 20 flat head hex screws, and 4 cross recessed countersunk head screws.

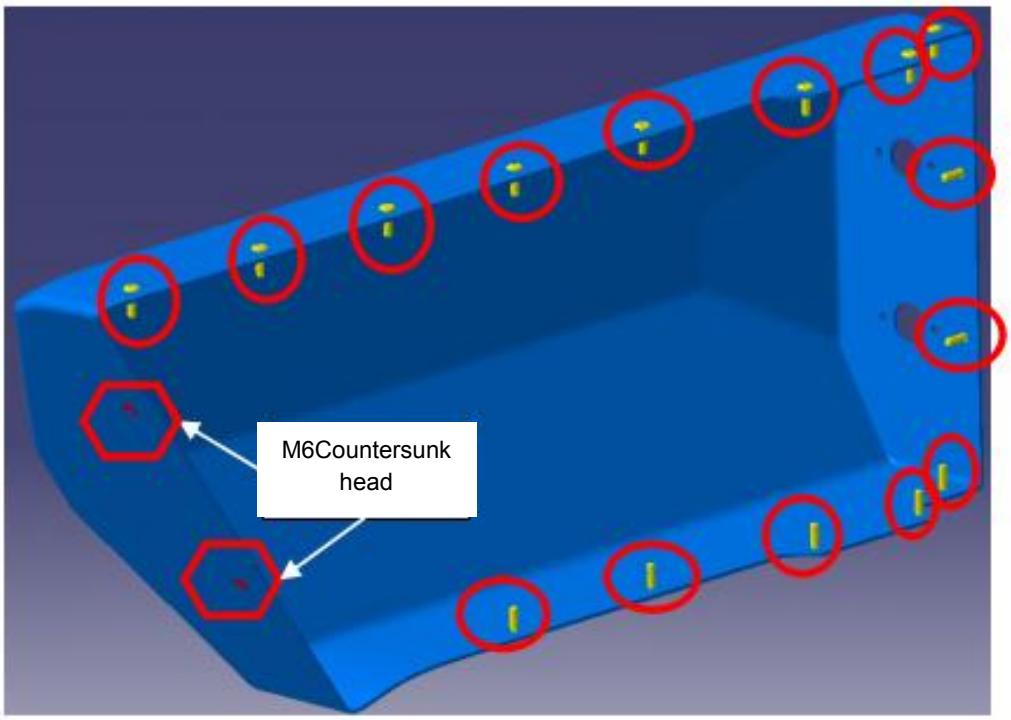


23.9.3.Replacing the left (right) side outer panel of the trunk: Disconnect the tail light

circuit,

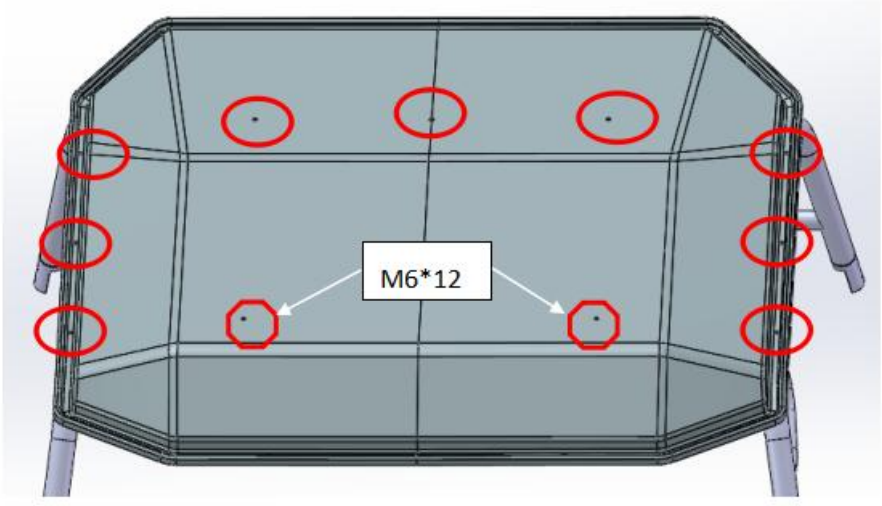


Use a Phillips screwdriver to remove the 4 cross recessed countersunk head screws, use a 5/32in. hex wrench to remove 18 M6 * 20 flat head hex screws and 2 M5 * 20 flat head hex screws, and then remove the inspection cover panel of the rear door of the cargo box. Replace the original outer panel of the trunk rear door with a new one, and fix it with 18 M6 * 20 flat head hex screws, 2 M5 * 20 flat head hex screws, and 4 cross recessed countersunk head screws.



23.10 Replacing roof components

Using a 5/32in. hex wrench, remove 2 M6 * 20 flat head hex screws and 2 M6 * 12 flat head hex screws, and then remove the original outer cover.Replace the original outer cover with a new one and secure it with 11 M6 * 20 flat head hex screws and 2 M6 * 12 flat head hex screws.



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