

JiangSu Ator New Power Co.,Ltd

AT-CT125 service manual

Preface

This maintenance manual will introduce you to the vehicle specifications, maintenance procedures, adjustments and diagnosis of the AT-CT125.

Employees of authorized service providers of JiangSu Ator New Power Co., Ltd. understand this manual and publish maintenance technical newsletters in the future, which can provide better service for users with AT-CT125.

For the branded products or special tools provided in this manual, it is recommended to obtain these products, parts or tools through JiangSu Ator New Power Co., Ltd.

The information closing date is July 10th, 2025.

Without the written permission of JiangSu Ator New Power Co., Ltd., no part of this manual may be disseminated in any form.

Warning

Warning: To reduce the possibility of personal and/or property damage, the following instructions must be followed:

The maintenance manual provided by JiangSu Ator New Power Co., Ltd. is compiled for qualified professional technicians. If, any attempt to repair or maintain the vehicle without proper training and appropriate tools and equipment may lead to vehicle damage or abnormal operation of the vehicle.

The maintenance procedures recommended and introduced in the manual are effective methods for maintenance and repair. Of which, some procedures need to use tools specially designed for them.

Hence, if any1 wants to use replacement, maintenance or tools which are not recommended or recognized by JiangSu Ator New Power Co., Ltd., he/she must make sure that they are not harmful for the personal safety and safe operation of the vehicle.

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Chapter 1.The vehicle information

Model		
I. Vehicle parameters		
External dimensions (Length×width×height)	mm	1970×760×1260
Wheelbase	mm	1400
Mini Ground Distance	mm	140
Curb Weight	kg	177
Max Loading	kg	150
Max Speed	km/h	120
Max Torque		290N.m
Gear Ratio		4.5:1
Wheel Rim Type (front/rear)		Aluminum
Front Tire Size		100/80-14
Rear Tire Size		130/70-13
Front Shock Absorber Type		Hydraulic Damping Type
Rear Shock Absorber Type		Air resistance Type
Front Brake Type		Disc,CBS
Front Brake Operate Mode		Hand Brake
Rear Brake Type		Disc,CBS
Rear Brake Operate Mode		Hand Brake
II. Motor Parameters		
Motor Model		158YC-J7212448NA
Rated Power		6KW
Max Power		14KW
Start Method		Electric
III. Battery System		
Size		661*208*270
Voltage		72V
Capacity		100Ah
Type		Lithium ion
Charger Input Voltage		100~240V
Charger Output Voltage		84V
Standard Charge Current		20A
Standard Charge Time		5h
Range(ASM)		135
Range(Isokinetic method)		145
Weight		52kg
Battery Charging and Discharging Cycles Time		1500 cycles
Battery Discharging Working Temperature		-20~60°
Battery Charging Working		0~50°C

Temperature	
Battery Storage Environment Temperature	1 month: -20~60°C 3months: -20~45°C 1year: -20~20°C
Battery Protection System	Over discharge protection, short-circuit protection,temperature protection,overcharge protection,over current protection,balance protection of battery
IV. Display	
Screen	TFT
Size	7 inch
V. Electrical System	
Headlamp Type and Specs	LED 12V
Front Turn Light Type and Specs	LED 12V
Rear Turn Light Type and Specs	LED 12V
Rear Light and Specs	LED 12V
Rear License Plate Light Type and Specs	LED 12V
Speedometer Type	Electronic

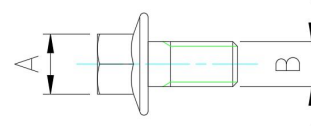
Chapter 2 Standard component specification and general torque

This chapter is used to inform the customers the specification of the standard components the vehicle uses and their corresponding repair tools.

Specify the locking torque force for standard fixtures according to ISO standard screw thread depth. The manual has already explained the locking torque force of the special components or assembly in relevant chapters. In order to prevent curling, please lock the multi-fixture assembly to designated torque force in cross mode and progressive manner. Unless otherwise prescribed, the locking torque should be based on clear and dry screw thread; the components should maintain the room temperature standards.

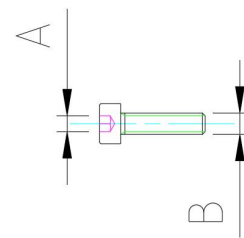
1. The car uses hexagon flange bolt, whose national standard number is GB/T 5789-2000. For the standard component specification, repair tools specification and general torque please refer to the following table:

A	B (specs)	Open spanner/sleeve	General torque N.m
8mm	M6	8#	10-15
10mm	M8	10#	25-35
12mm	M8	12#	25-35
14mm	M10	14#	35-45
14mm	M12	14#	40-50
19mm	M12	19#	40-50



2. The whole vehicle uses hexagonal cylindrical head bolts with the national standard number GB/T70.1-2000. The standard part specifications, maintenance tool specifications, and general torque are shown in the table below:

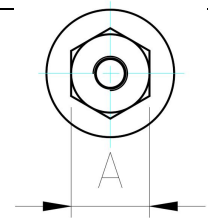
A	B (specs)	Allen key	General torque N.m
4mm	M5	4#	5-10
5mm	M6	5#	10-15
6mm	M8	6#	25-35
8mm	M10	8#	35-45
12mm	M14	12#	50-60



3. The whole vehicle shall use hexagonal flange nuts with the national standard number GB/T 6177.1-2000; GB/T6187.1 hexagonal flange self-locking nuts, standard part specifications, maintenance tool specifications, and general torque are shown in the table below:

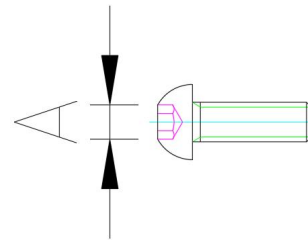
A	specs	Open spanner/sleeve	General torque N.m
8mm	M5	8#	5-10
10mm	M6	10#	10-15

12mm	M8	12#	25-35
14mm	M10	14#	35-45
17mm	M12	17#	40-50



4. The whole vehicle uses hexagonal flat round head bolts with the national standard number GB/T70.2-2000. The standard part specifications, maintenance tool specifications, and general torque are shown in the table below:

A	B (specs)	Allen key	General torque N.m
3mm	M5	4#	5-10
4mm	M6	5#	10-15

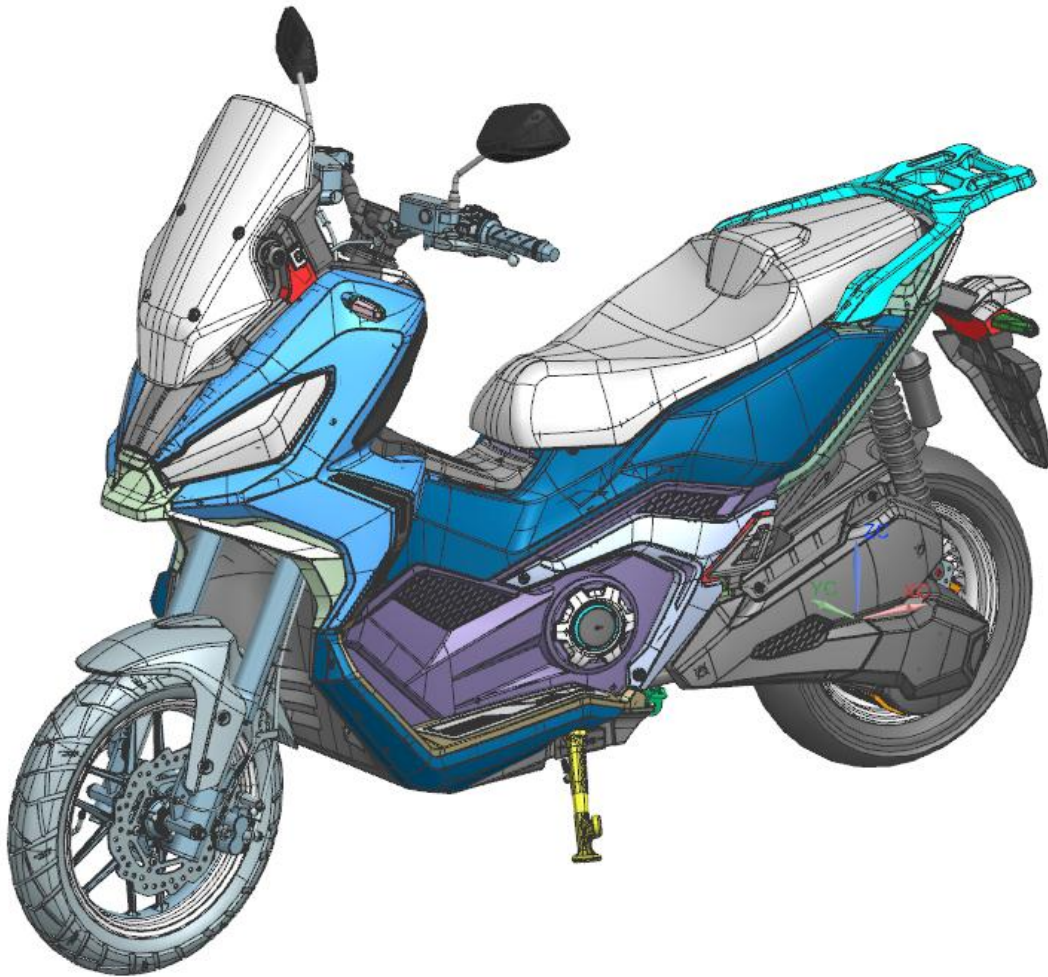


5. The whole vehicle uses cross recessed pan head self tapping screws with the national standard number GB/T 845-1985, cross recessed round head screws with the GB/T818-2000 standard, and the maintenance tool is uniformly a cross screwdriver. There is no requirement for torque, just tighten it.

Chapter 3 Dismantle and replacement of parts of the vehicle

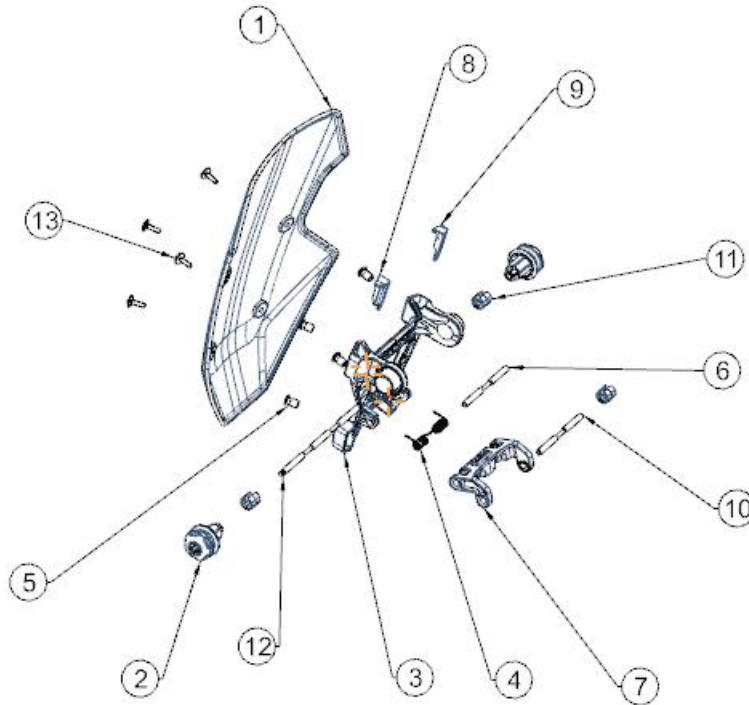
Preparation for dismantling and replacement

- ① Before the dismantling or removal, clean the dust, dirt and foreign matter on the car.
- ② While dismantling, the paired parts must be put together. The paired parts must be used repeatedly or switched in pairs
- ③ While dismantling, clean all the parts, and put them on the tray in the order of dismantling sequence. Doing so will save the time of assembling and ensure the correct installation of the parts.
- ④ Put all parts in places away from fire and water.



3.1 Disassemble and switch the covering parts

3.1.1 (1) Schematic diagram of windshield panel components



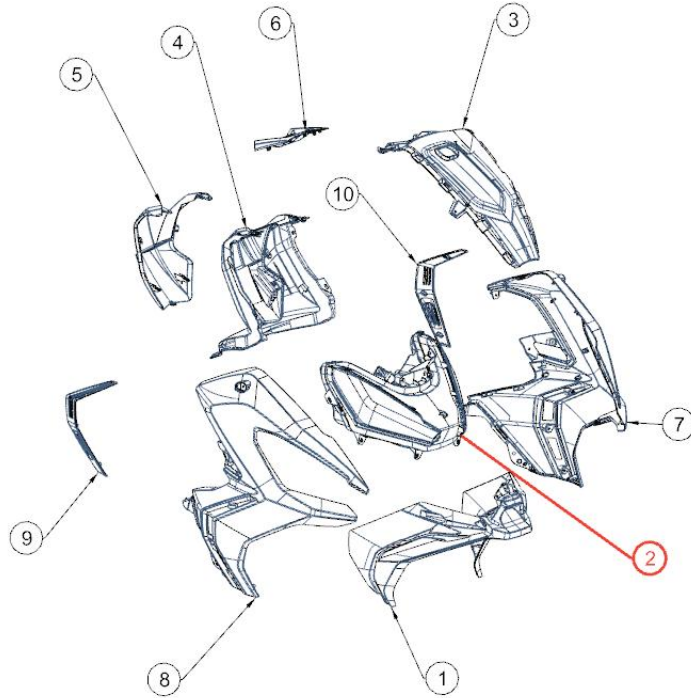
(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
1min

Removal tool	
Plum blossom ratchet wrench	S2 TT30

No.	Part Name	Description	Picture
1	windshield	(1) Use the S2 TT30 plum blossom ratchet wrench to unscrew all 4 screws.	

3.1.2 (1) Schematic diagram of the front upper cover of the frame


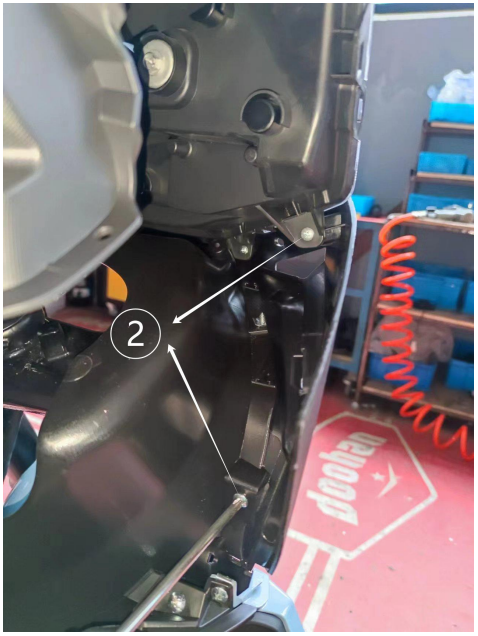




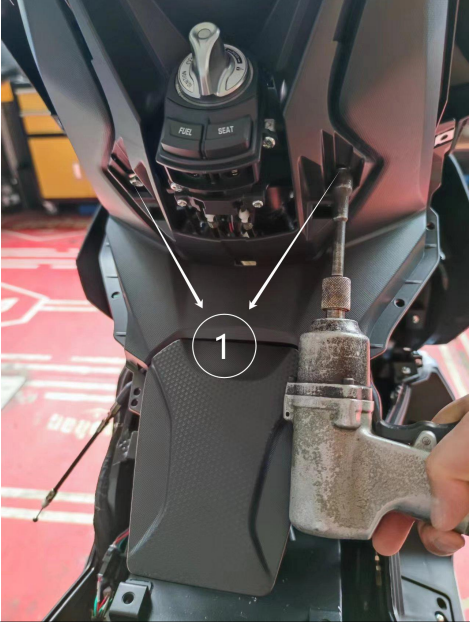

(2) Procedure of dismantling and switching the covering pieces and the tools required




Estimated time
20min

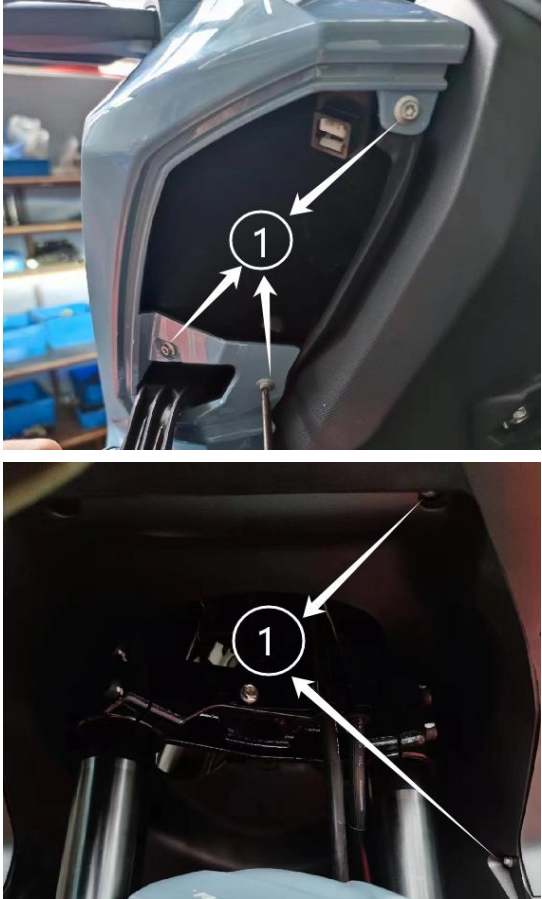
Removal tool	
Plum blossom ratchet wrench	S2 TT20
Cross screwdriver	Shaftφ6mm
Socket ratchet wrench	10mm

No.	Part Name	Description	Picture
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1	Front panel plate	(1)Use S2 TT20 plum blossom ratchet wrench to unscrew all 2pcs screws.	
1	Front panel plate	(2) use $\phi 6\text{mm}$ cross screwdriver to unscrew 2pcs screws on the left and right sides of the back.	
2	Headlight	(1) Use 10mm Socket ratchet wrench unscrew 2pcs M6 hexagon screw.	
	Headlight	(2) Use $\phi 6\text{mm}$ cross screwdriver unscrew 1pc self-tapping screws.	

3	Front panel	(1) Use $\phi 6\text{mm}$ cross screwdriver unscrew 4pcs M4.8 self-tapping screws.	
4	Fixed parts for ignition switch	(1) Use 10mm Socket ratchet wrench unscrew 2pcs M6 hexagon screw.	
4	Fixed parts for ignition switch	(2) Use $\phi 6\text{mm}$ cross screwdriver unscrew 2pcs M4.8 self-tapping screws.	

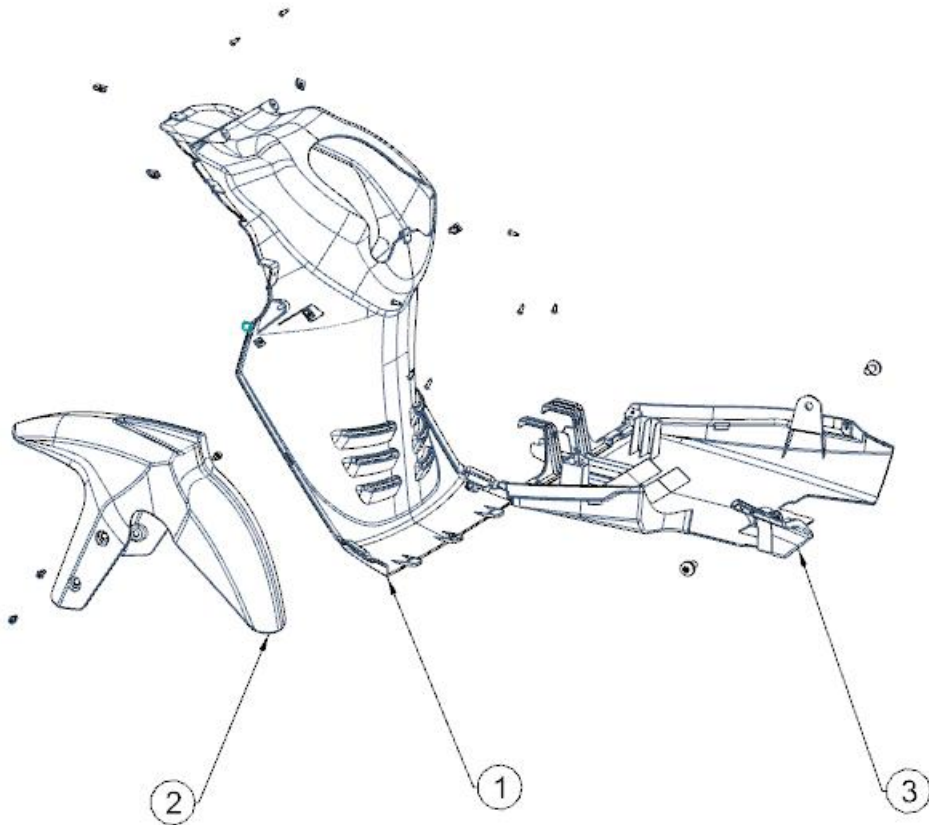
5	Decorative parts for ignition switch	(1) Use $\phi 6\text{mm}$ cross screwdriver unscrew 2pcs M4.8 self-tapping screws.	
6	Lower cover of steering handle	(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 2pcs screws.	
8-9	Front right panel and decorative parts for front right panel assemble	(1) Use $\phi 6\text{mm}$ cross screwdriver unscrew 3pcs M4 self-tapping screws, same way on both sides.	

8	Front left panel	<p>(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 5pcs screws on top and back.</p> <p>Same disassemble way on front right panel.</p>	
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Instructions for Installation Details

No.	Description
1	Assemble ① front panel plate and ② head light assay first, then install it onto the frame.
2	Assemble ③ front right panel and ④ decorative parts for front right panel first, then install it onto the frame.

3.1.3 (1) Schematic diagram of the front lower cover of the frame






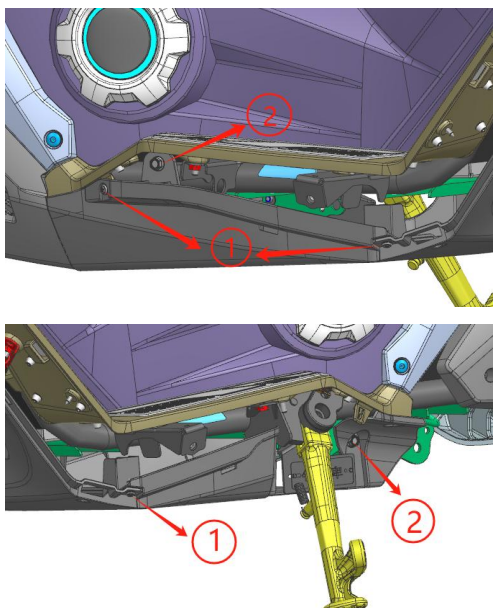
(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
10min

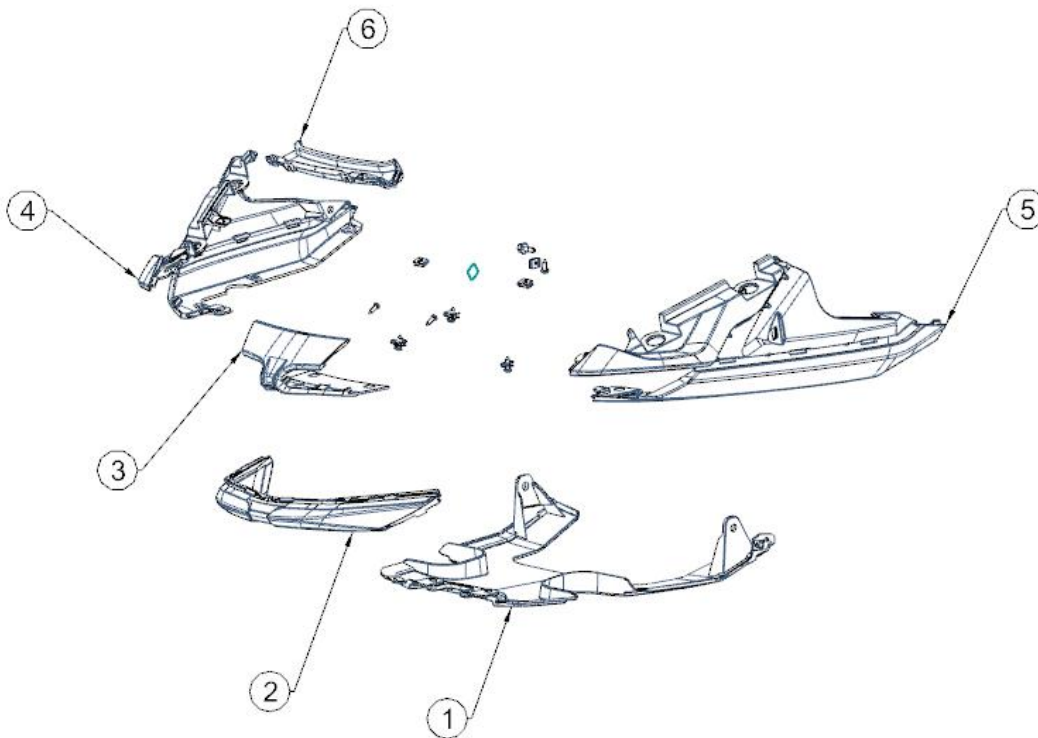
Removal tool	
Plum blossom ratchet wrench	S2 TT20
Plum blossom ratchet wrench	S2 TT30
Cross screwdriver	Sharftφ6mm
Socket ratchet wrench	10mm

No.	Part Name	Description	Picture
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1	Front panel plate lower mud board	(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 3pcs screws.	
1	Front panel plate lower mud board	(2) Use $\phi 6\text{mm}$ cross screwdriver unscrew 2pcs M4 self-tapping screw.	
2	Front fender	(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 4pcs screws, 2pcs M6 hexagonal screws on each side.	

3	(1) Chassis backplane	<p>(1) Use $\phi 6\text{mm}$ cross screwdriver unscrew 2pcs screws on the right side, M4.8 self-tapping screw and 1pc of M4.8 self-tapping screw on the left side. (2) Use 10mm socket ratchet wrench unscrew 1pc M6 hexagon screw on each side.</p>	
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3.1.4 (1) Schematic diagram of the rear cover of the frame







(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
8min

Removal tool

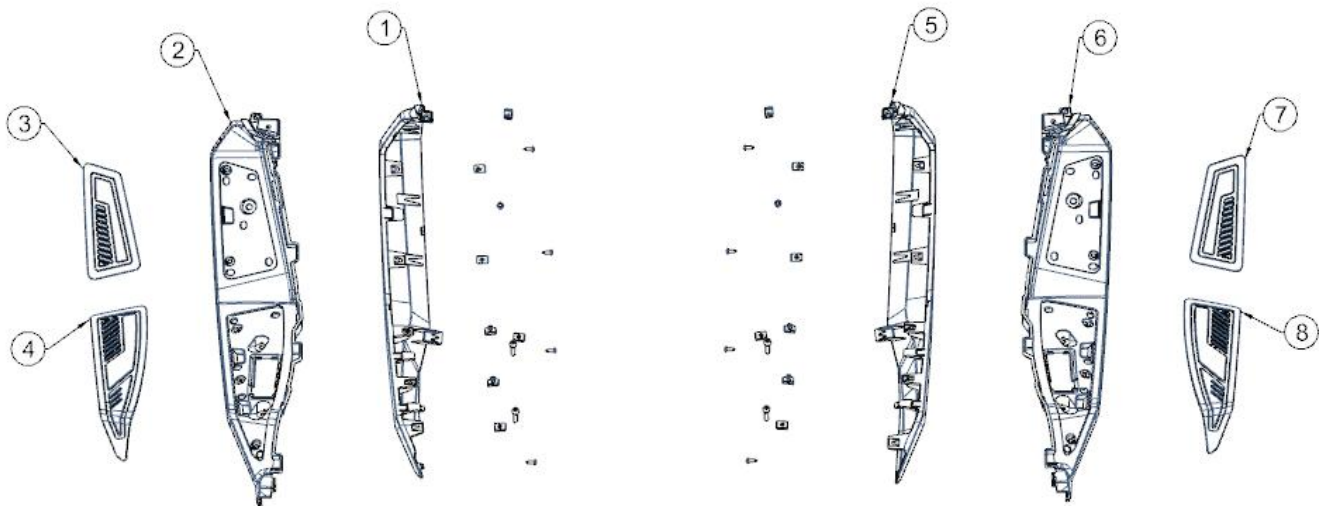
Plum blossom ratchet wrench	S2 TT20
Socket ratchet wrench	10mm
Cross screwdriver	Shaft ϕ 6mm
Socket ratchet wrench	12mm

No.	Part name	Description	Picture
1	Rear wheel inner mud plate	<p>(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 4pcs screws on both sides.</p> <p>(2) Use 12mm socket ratchet wrench unscrew all 2pcs M8 hex nut on both sides.</p>	

2	Taillight	(1) Use $\phi 6\text{mm}$ cross screwdriver unscrew all 2pcs M4.8 self-tapping screws.	
3	Fixed parts for taillight	(1) Use 10mm socket ratchet wrench, unscrew all 2pcs M6 hex nuts on both sides.	
4	Right fixed parts for taillight	<p>(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 2pcs screws on both sides.</p> <p>(2) Use 12mm socket ratchet wrench, unscrew all 1pc M8 hex nut on both sides.</p> <p>The screws used on the left and right side are the same, and the same screw is used when overlapping with the inner mud plate of the rear wheel.</p>	

			
6	Rear cover plate of seat bucket	<p>(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 2 pcs screws on both sides.</p> <p>(2) Use $\phi 6\text{mm}$ cross screwdriver unscrew all 2 pcs M4 self-tapping screw.</p>	

3.1.5 (1) Schematic diagram of left and right foot pedal components



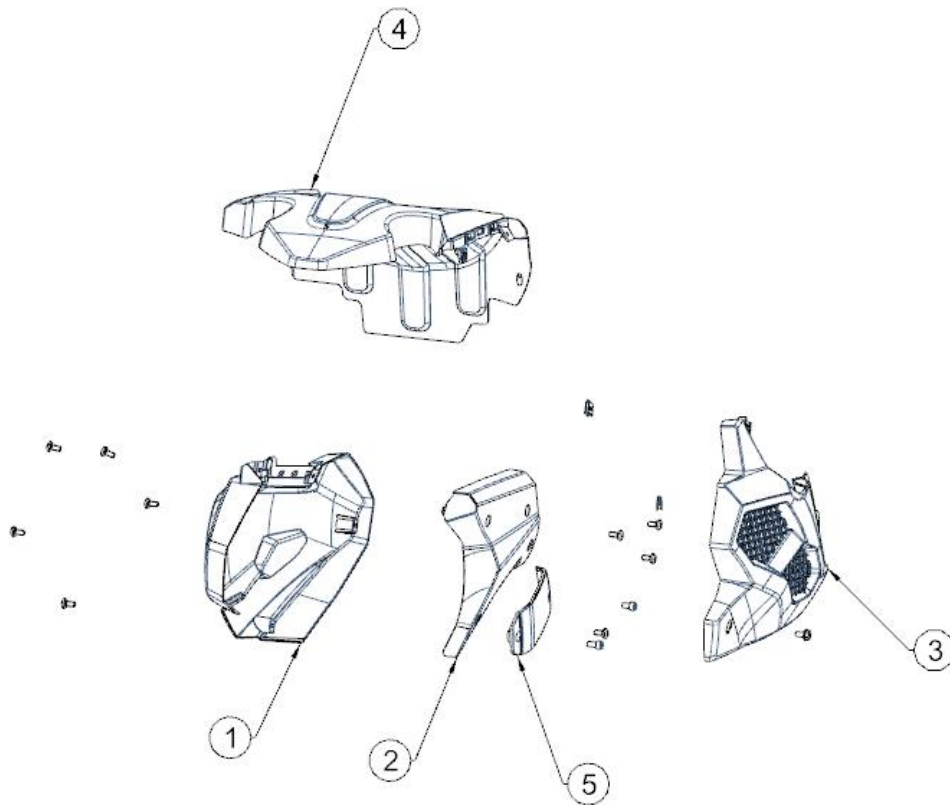
(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
5min

Removal tool	
Cross screwdriver	Shaft $\phi 6\text{mm}$
Socket ratchet wrench	12mm

No.	Part name	Description	Picture
1	Left footboard	<p>(1) Use 12mm socket ratchet wrench unscrew all 3pcs M8 hex nuts.</p> <p>(2) Use $\phi 6\text{mm}$ cross screwdriver unscrew 5pcs M4.8 self-tapping screws.</p> <p>The screws used on right footboard and left footboard are the same.</p>	

3.1.6 (1) Schematic diagram of rear wheel cover parts

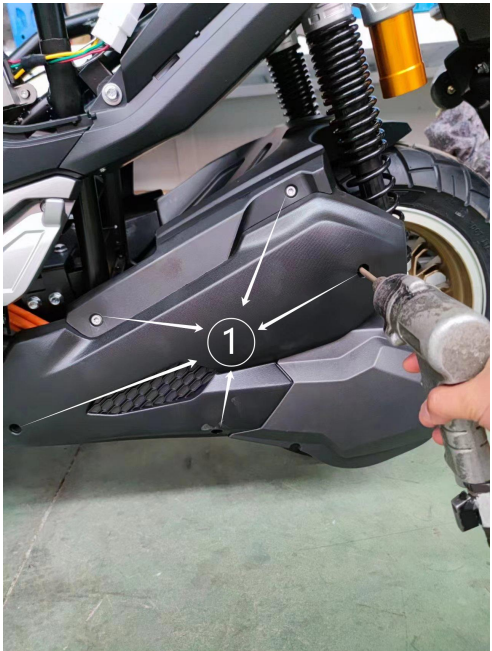
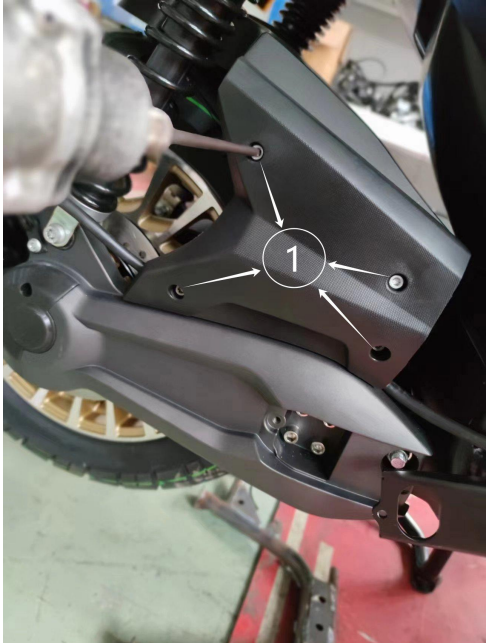


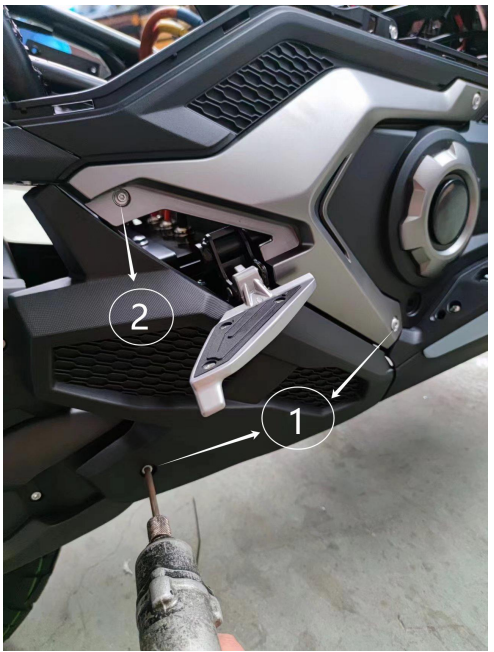
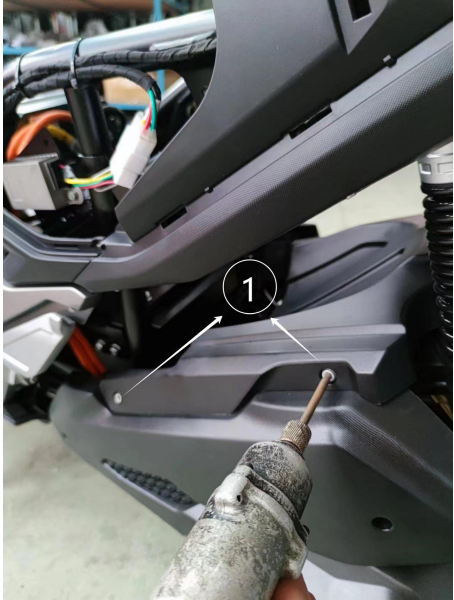
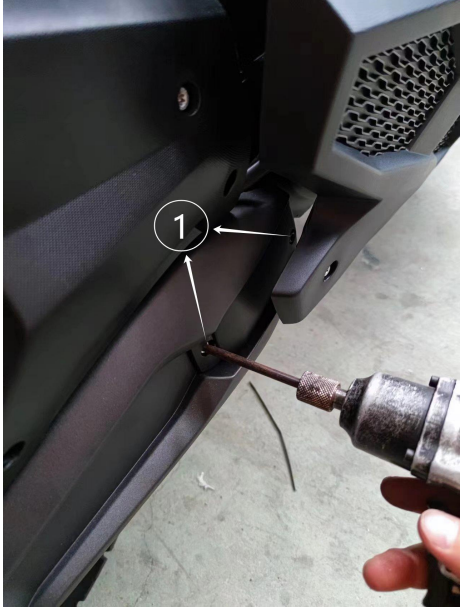
(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
6min

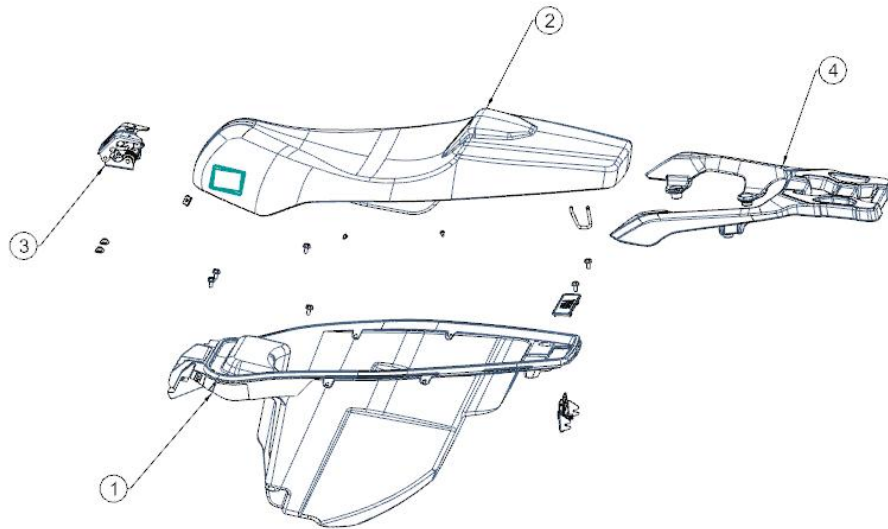
Removal tool	
Plum blossom ratchet wrench	S2 TT30
Plum blossom ratchet wrench	S2 TT20
Hexagon ratchet wrench	5mm

No.	Part name	Description	Picture
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1	Left decorative part of rear fender	(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 5pcs screws. Two screws overlap with the rear fender.	
2	Right decorative part of rear fender	(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 4pcs screws.	

3	Right side panel of fork	<p>(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 2pcs screws.</p> <p>(2) Use S2 TT20plum blossom ratchet wrench unscrew all 1pc screws.</p> <p>Two screws overlap with the fixed decorative part of the footboard.</p>	
4	Rear fender	<p>(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 4pcs screws on both sides.</p> <p>Four screws overlap with right & left decorative parts of rear fender.</p>	
5	Front small cover of right connecting plate	Use 5mm hexagon ratchet wrench unscrew all 2pcs screws.	

3.1.7 (1) Schematic diagram of seat cushion assembly

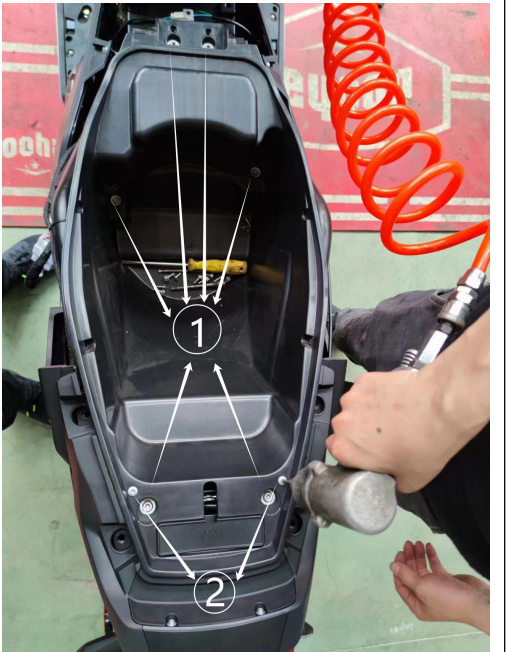





(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
5min

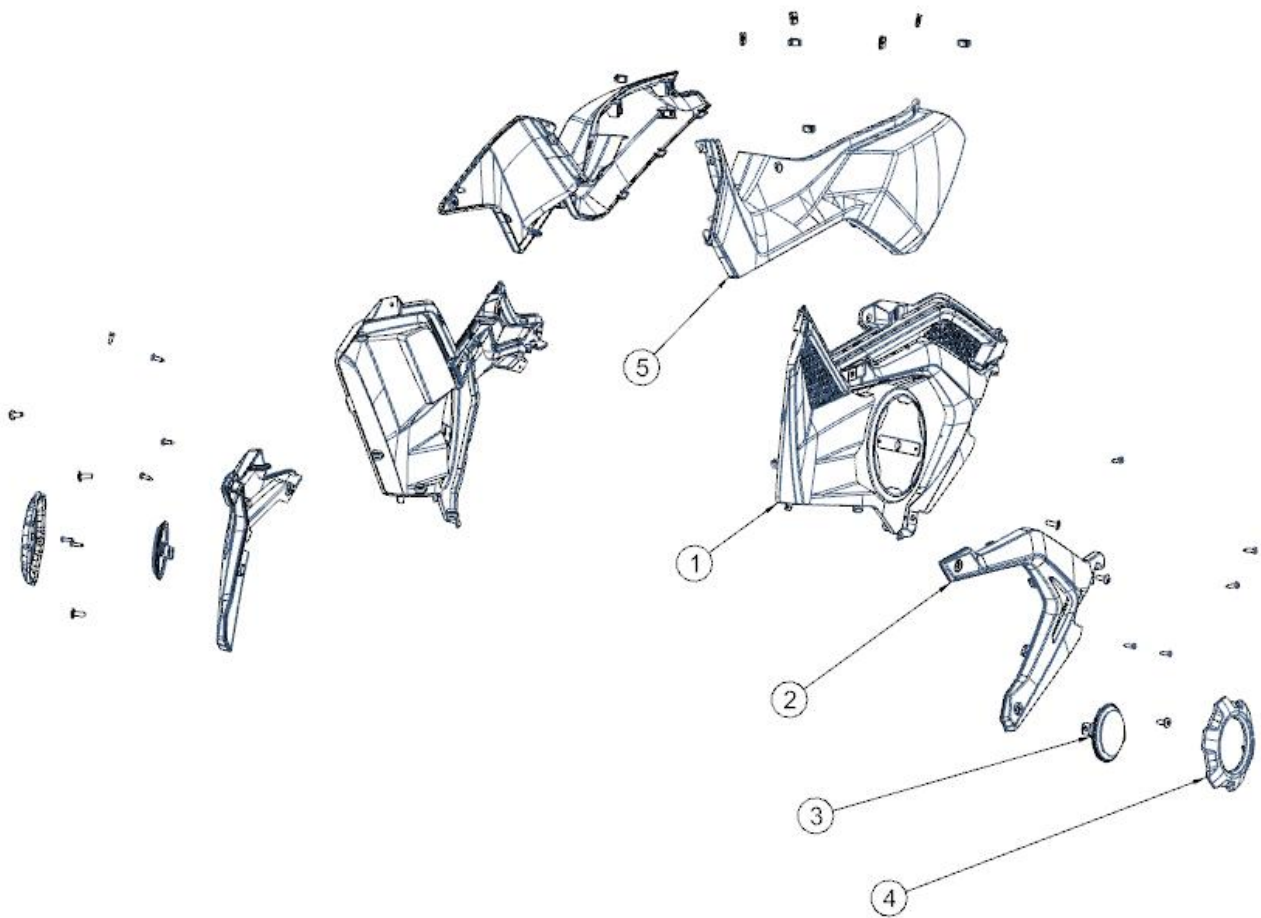
Removal tool	
Plum blossom ratchet wrench	S2 TT40
Plum blossom ratchet wrench	S2 TT30
Plum blossom ratchet wrench	S2 TT20
Socket ratchet wrench	10mm

No.	Part Name	Description	Picture
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1	Storage box	<p>(1) Use S2 TT40 plum blossom ratchet wrench unscrew all 6pcs screws.</p> <p>(2) Use S2 TT20 plum blossom ratchet wrench unscrew all 2pcs screws.</p>	
2	Cushion	<p>(1) Use 10mm socket ratchet wrench unscrew all 2pcs nuts.</p>	
3	Seat cushion rocker arm	<p>(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 2pcs screws.</p>	

4	Rear carrier	(1) Use S2 TT40 plum blossom ratchet wrench unscrew all 4pcs screws.	
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3.1.8 (1) Schematic diagram of the middle cover of the frame

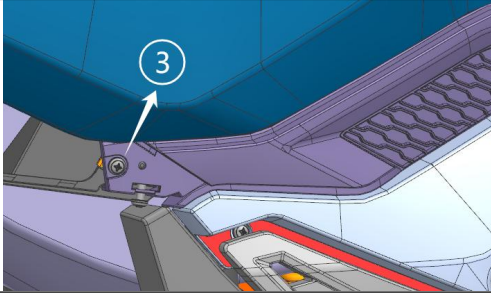
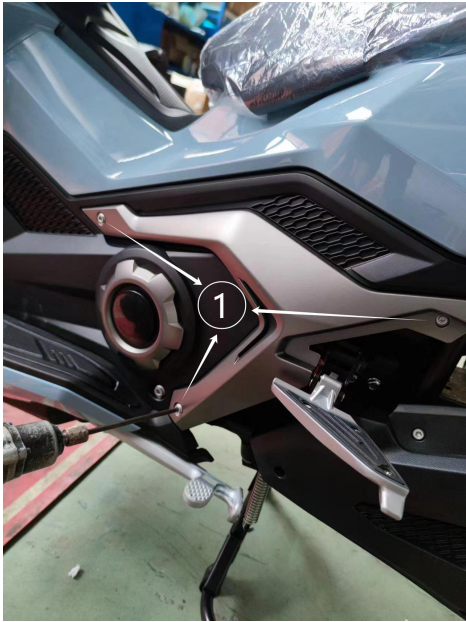
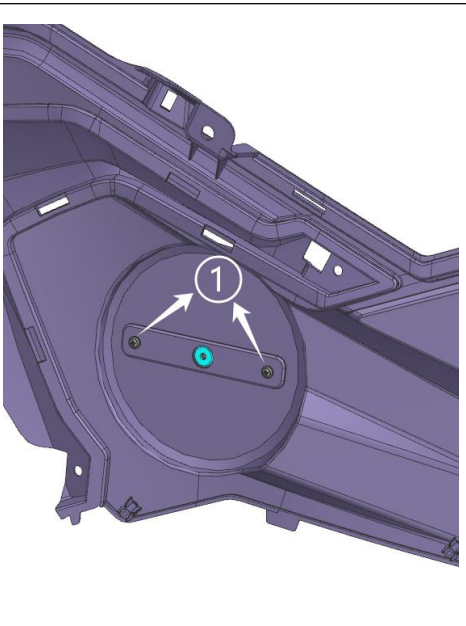



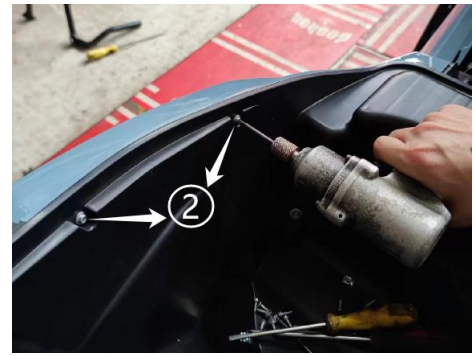
(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
15min

Removal tool	
Plum blossom ratchet wrench	S2 TT30
Socket ratchet wrench	10mm
Hexagon ratchet wrench	5mm
Cross screwdriver	6mm

No.	Part Name	Description	Picture
1	Fixed plate of left footboard	<p>(1) Use 10mm socket ratchet wrench unscrew all 1pc screw.</p> <p>(2) Use S2 TT40 plum blossom ratchet wrench unscrew all 2pcs screw.</p> <p>(3) Use 6mm Cross screwdriver unscrew all 1pc M4.8 self-tapping screw.</p> <p>Same disassemble ways for fixed parts of right footboard.</p>	

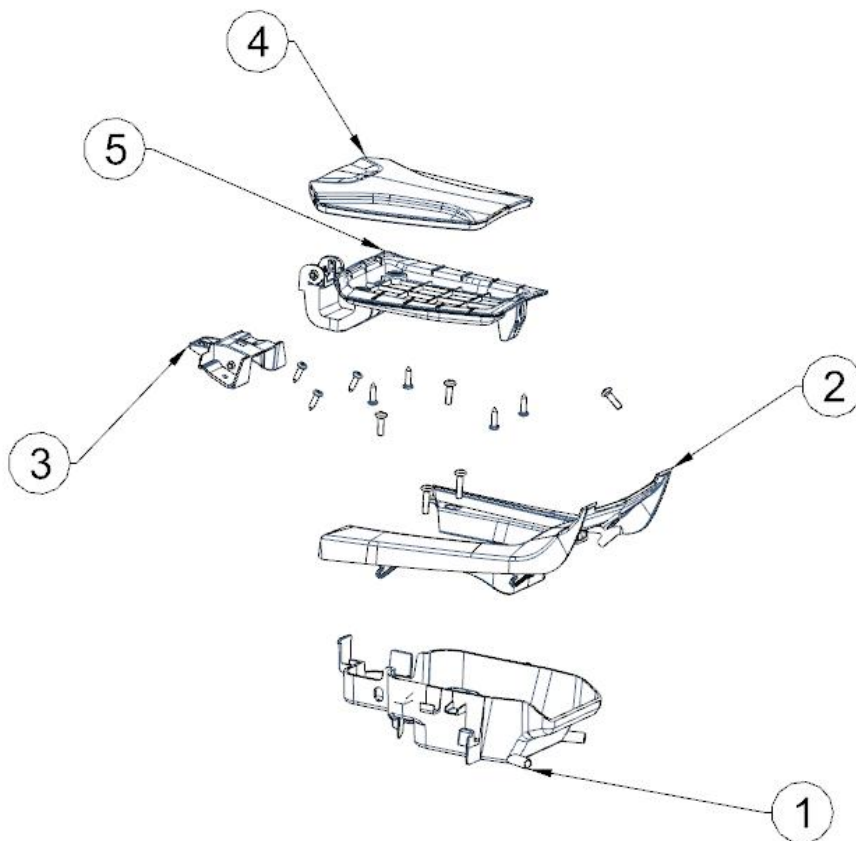
			
2	Fixed decorative parts of left footboard	<p>(1) Use S2 TT30 plum blossom ratchet wrench unscrew all 3pcs screws.</p> <p>Same disassemble ways for fixed decorative parts of right footboard.</p>	
3	Left decorative lights	<p>(1) Use 6mm cross screwdriver unscrew all 2pcs M4.2 self-tapping screws.</p> <p>Same disassemble ways for right lights.</p>	
5	Left side panel	<p>(1) Use S2 TT30 plum blossom ratchet wrench, unscrew all 2pcs screws.</p> <p>(2) Use S2 TT30 plum blossom ratchet wrench, unscrew all 2pcs screws.</p> <p>Same disassemble ways for right side panel</p>	



Instructions for Installation Details

No.	Description
1	Installation of decorative lights: The left and right decorative lights are first fixed to the left and right footboards, as well as the left and right decorative components. After the three are assembled and fixed. Install the left and right foot pedal fixing plates as a whole onto the vehicle body.

3.1.9 (1) Schematic diagram of charging port cover component






(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time	
5min	
Removal tool	
Plum blossom ratchet wrench	S2 TT20

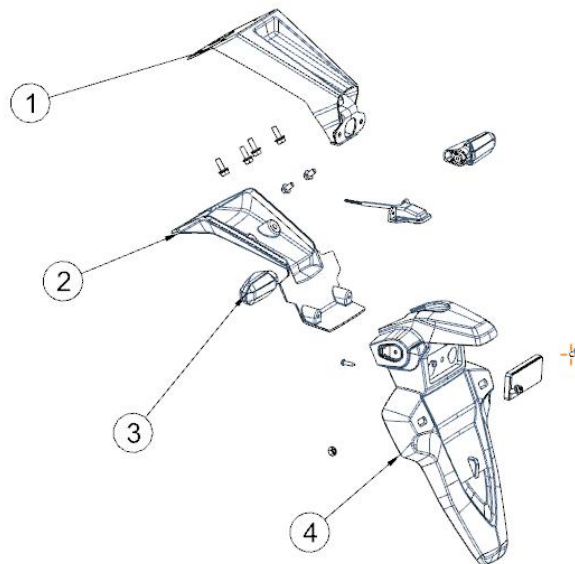
Cross screwdriver

6mm

No.	Part Name	Description	Picture
1	Charging port fixed seat	(1) Use 6mm cross screwdriver unscrew all 2pcs M3.5 self-tapping screws.	
2	Covering parts for charging port fixed seat	(2) Use S2 TT20 plum blossom ratchet wrench unscrew all 3pcs screws.	

3	Charging port cover	Use 6mm cross screwdriver unscrew all 4pcs M3.5 self-tapping screws.	
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3.1.10 (1) Schematic diagram of license plate assembly at the rear of the frame

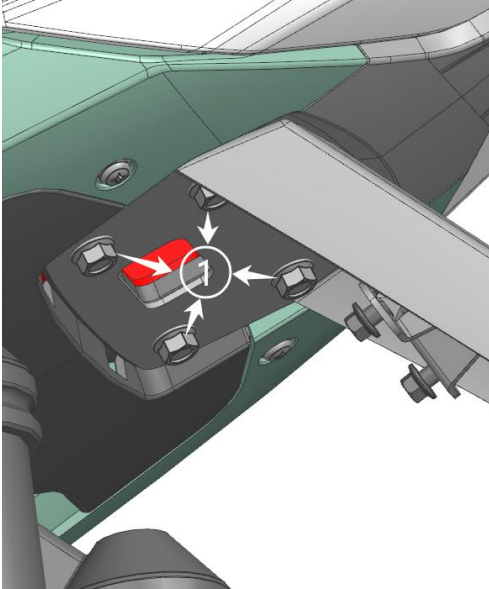
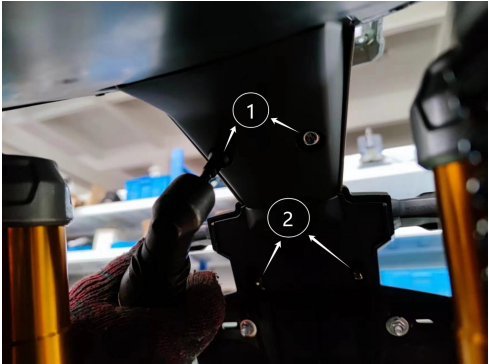
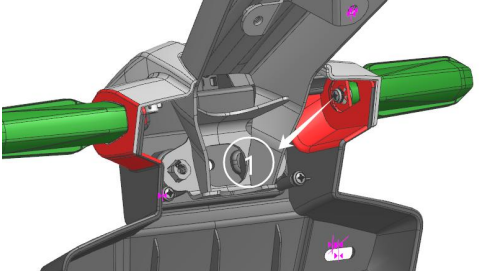


(2) Procedure of dismantling and switching the covering pieces and the tools required

Estimated time
5min

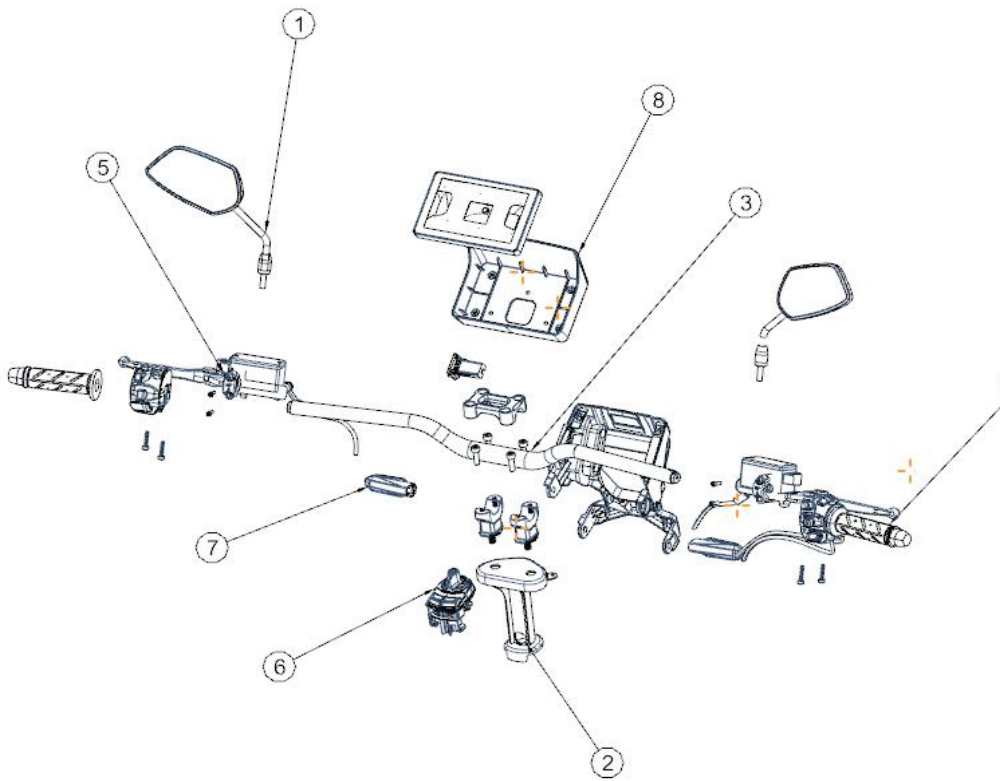
Removal tool	
Socket ratchet wrench	14mm
Socket ratchet wrench	10mm
Cross screwdriver	6mm

No.	Part Name	Description	Picture
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1	Rear fender bracket	(1) Use 14mm socket ratchet wrench unscrew all 4pcs screws.	
2	Rear fender lining	(1) Use 10mm socket ratchet wrench unscrew all 2pcs screws. (2) Use 6mm cross screwdriver unscrew all 2pcs M3.5 self-tapping screws.	
	Rear turn lights	(1) Use 6mm cross screwdriver unscrew all 2pcs screws on both sides.	

3.2 Disassembling and changing of steering handle

(1) Schematic diagram of the steering handle assembly



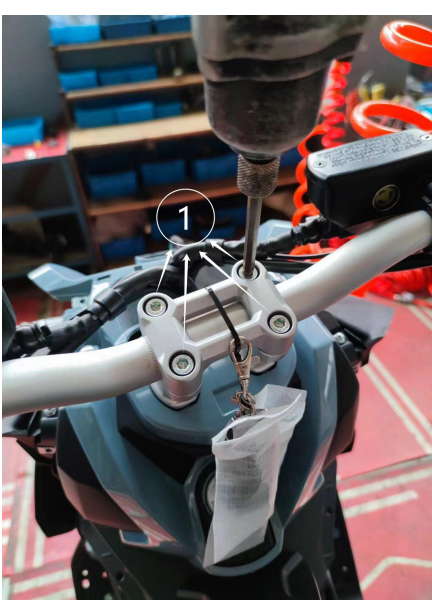


Estimated time
6min


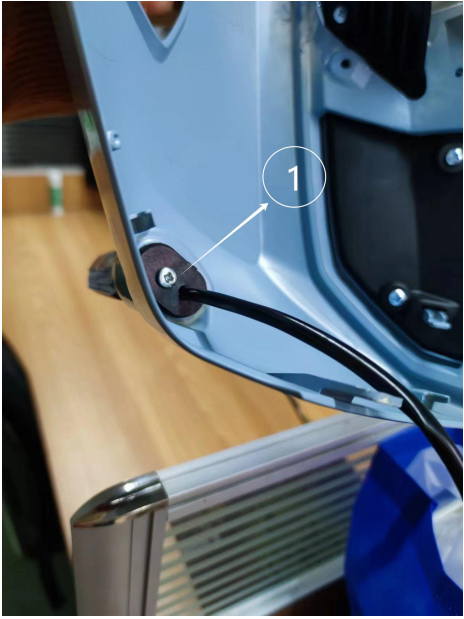
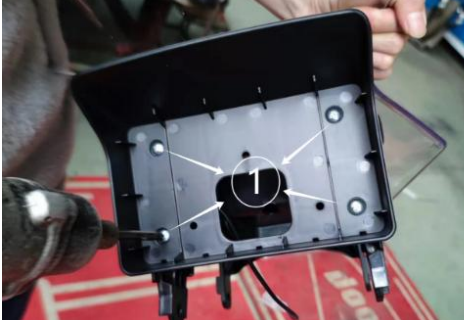
(2) Procedure of dismantling and switching the steering handle seat and the tools required

Removal tool	
Socket ratchet wrench	8mm
Socket ratchet wrench	13mm
Hexagon ratchet wrench	6mm
Open end wrench	14mm
Hexagon ratchet wrench	5mm
Cross screwdriver	6mm

No.	Part Name	Description	Picture
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1	Left rearview mirror	<p>(1) Use 14mm open end wrench unscrew left rearview mirror.</p> <p>Same disassemble ways for right rearview mirror.</p>	
2	Steering handle seat	<p>(1) Use 13mm socket ratchet wrench unscrew all 1pc screw.</p>	
3	Steering handle	<p>(1) Use 6mm hexagon ratchet wrench unscrew all 4pcs screws.</p>	

4	Left & right switch assay	<p>(1) Use 5mm hexagon ratchet wrench unscrew all 1pc screw.</p> <p>(2) Use 5mm hexagon ratchet wrench unscrew all 2pcs screws.</p> <p>Same disassemble ways for left & right switch.</p>	
5	Left & right brake handle assay	<p>(1) Use 8mm socket ratchet wrench unscrew all 4pcs screws on both sides.</p>	

6	Smart lock	<p>(1) Use 5mm hexagon ratchet wrench unscrew all 2pcs inner-hexagon screws.</p>	
7	Front left & right turn lights	<p>(1) Use 6mm cross screwdriver unscrew all 1pc M4.8 self-tapping screw.</p> <p>The installation positions of the left and right turn lights are on the front left and right side panels.</p>	
8	Display installation components	<p>(1) Use 6mm cross screwdriver unscrew all 4pcs M4.2 self-tapping screws.</p> <p>(2) Use 4mm allen wrench unscrew all 3pcs screws.</p> <p>(3) Use 10mm socket ratchet wrench unscrew all 4pcs screws on both sides.</p>	

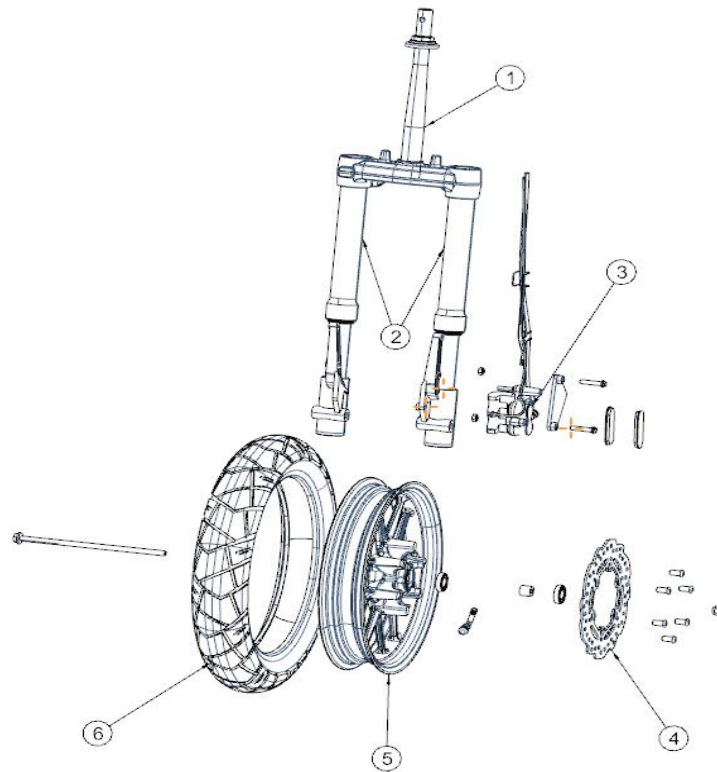


Instructions for Installation Details

No.	Description
1	Instrument Installation Components - Installation order: Step 1: Assemble the instrument mounting base and bracket (see Figure ①) → Step 2: Assemble the LCD screen and instrument base (see Figure ②) → Step 3: After all the front and upper covers of the vehicle are installed, install the instrument components onto the vehicle body

3.3 The front wheel and front disc brake system

(1) Schematic diagram of front wheel and front disc brake system

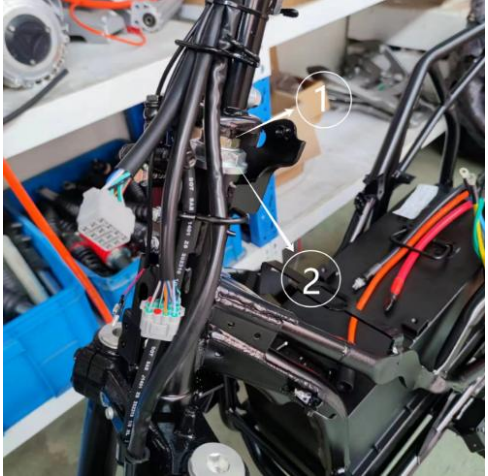
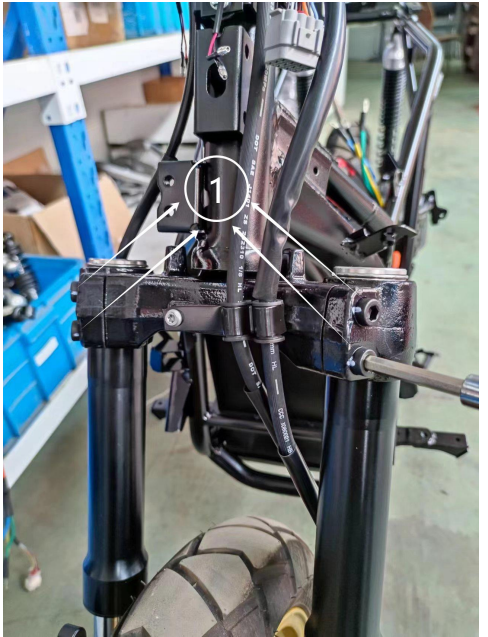
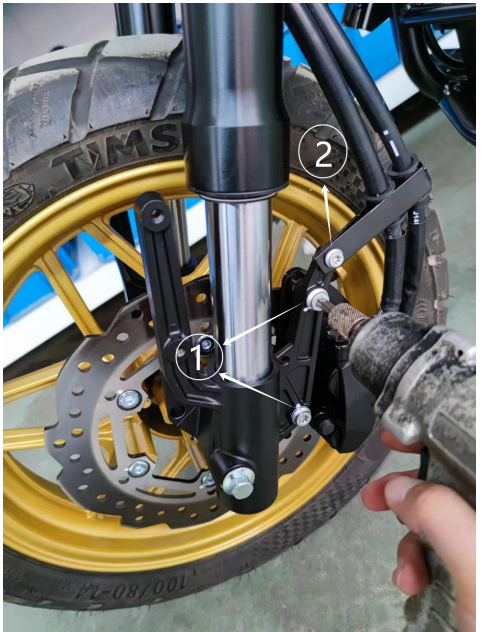


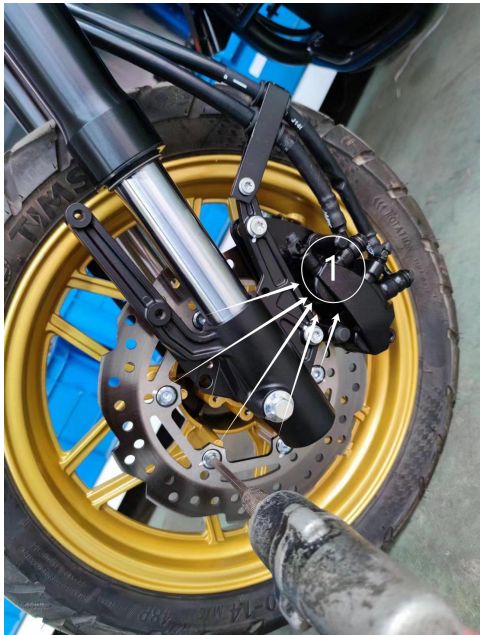

Estimated time
15min

(2) Procedure of dismantling and switching the front wheel and front disc brake system and the tools required

Removal tool	
Socket ratchet wrench	32mm
Socket ratchet wrench	46mm
Hexagon ratchet wrench	6mm
Plum blossom ratchet wrench	S2 TT30
Plum blossom ratchet wrench	S2 TT40
Socket ratchet wrench	17mm
Open end wrench	14mm

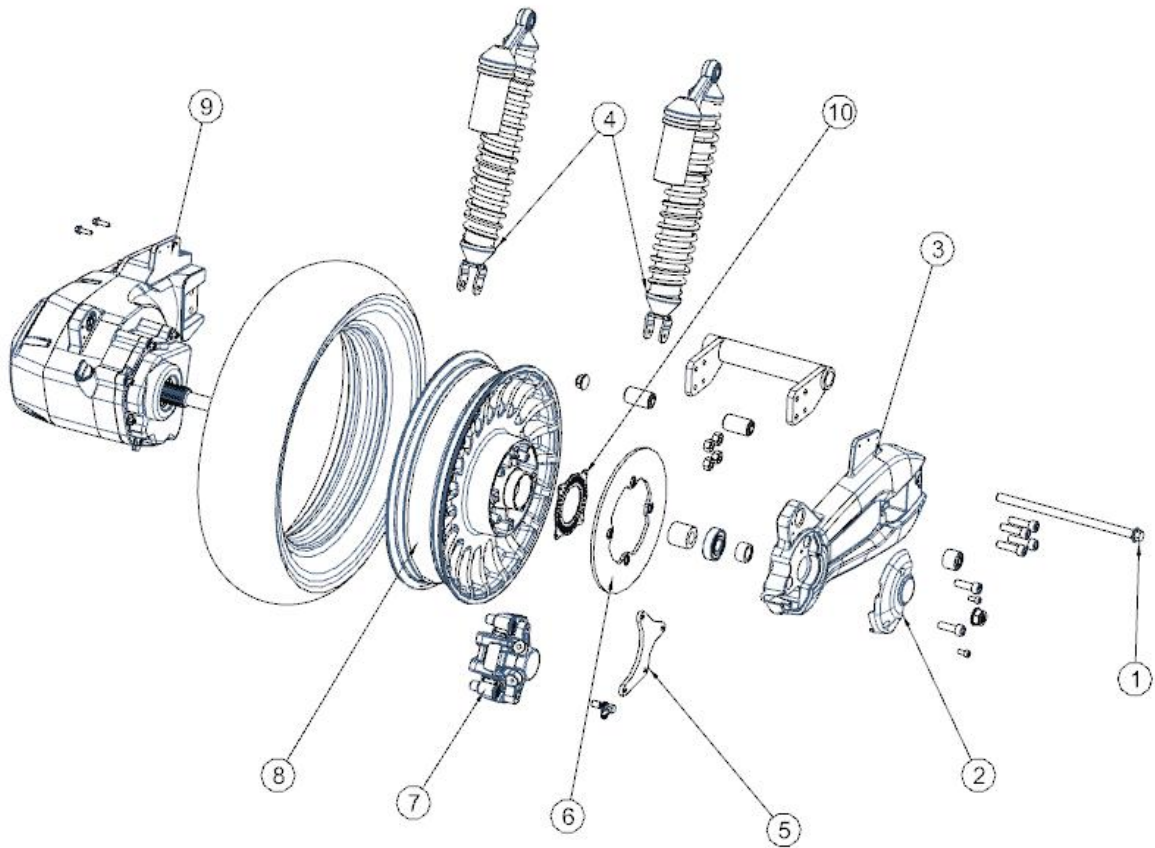
No.	Part Name	Description	Picture
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1	Steering shaft	<p>(1) Use 32mm socket ratchet wrench unscrew all 1pc nut.</p> <p>(2) Use 46mm socket ratchet wrench unscrew all 1pc nut.</p>	
2	Front left & right shock absorbers	<p>(1) Use 8mm hexagon ratchet wrench unscrew all 4pcs screws on both sides.</p>	
3	Front brake system	<p>(1) Use S2 TT40 plum blossom ratchet wrench unscrew all 2pcs screws.</p> <p>(2) Use S2 TT30 plum blossom ratchet wrench unscrew all 1pc screw.</p>	

4	Front disc brake disc	(1) Use 6mm hexagon ratchet wrench unscrew all 6pcs screws.	
5	From wheel	(1) Use 17mm socket ratchet wrench unscrew all 1pc nut. (2) Use 14mm open end wrench fix the barrel shaft, prevent the barrel shaft from rotating together when disassembling the nut.	

3.4 The rear wheel and rear disc brake system

(1) Schematic diagram of rear wheel and rear disc brake system

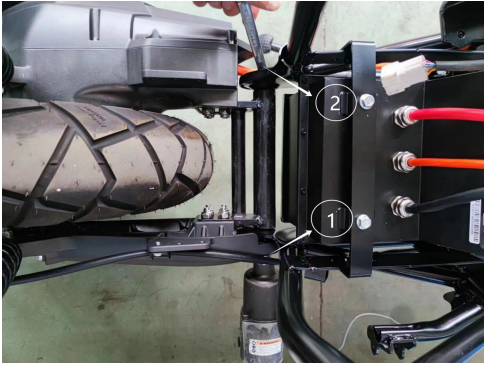
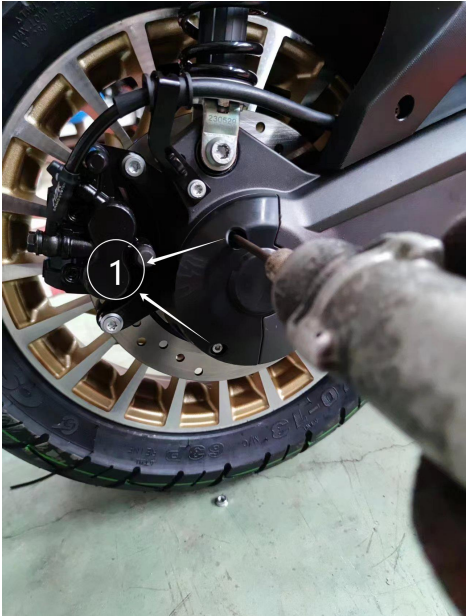



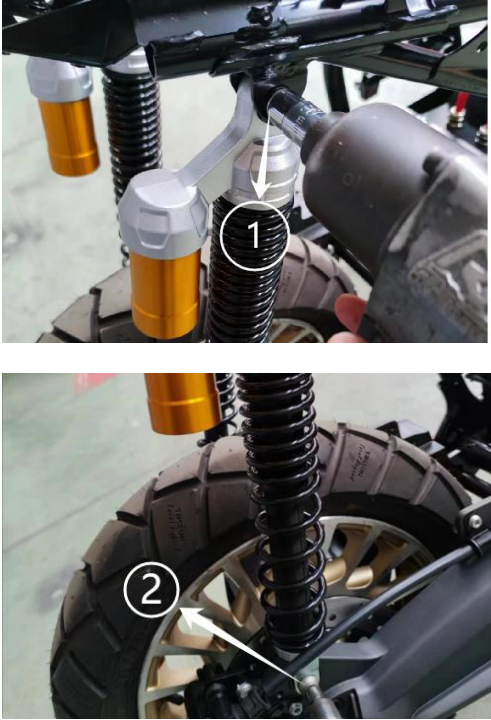


(2) Procedure of dismantling and switching the rear wheel and rear disc brake system and the tools required

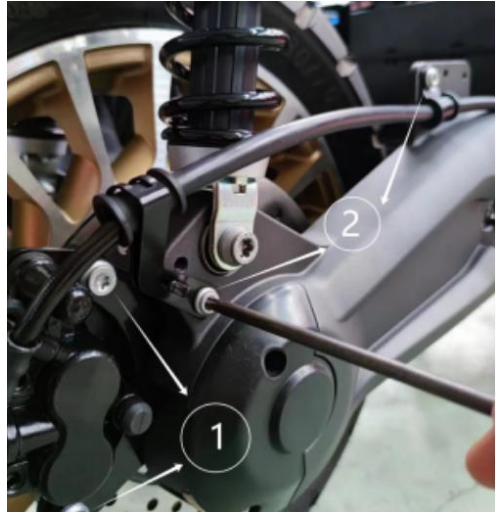
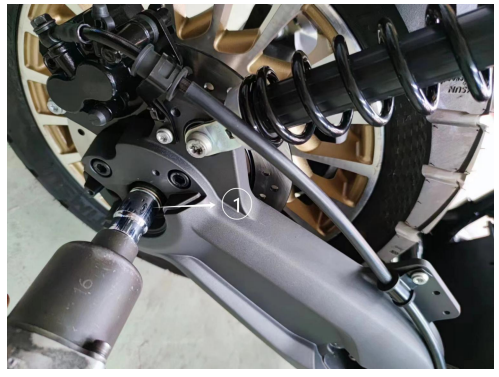
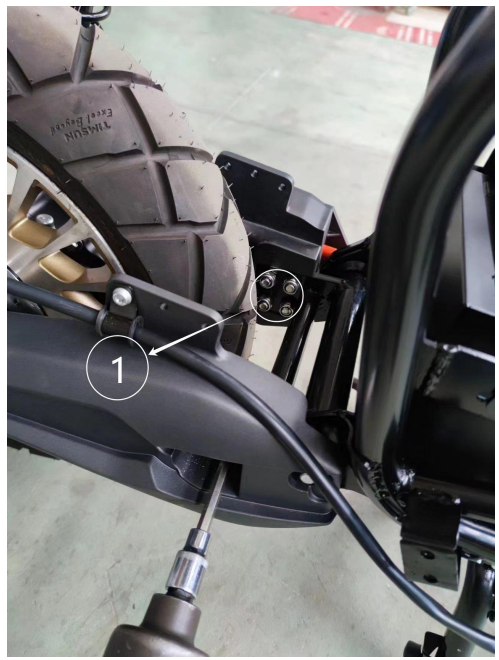
Estimated time
15min

Removal tool			
Socket ratchet wrench	14mm	Socket ratchet wrench	17mm
Plum blossom ratchet wrench	S2 TT50	Open end wrench	14mm
Hexagon ratchet wrench	8mm	Plum blossom ratchet wrench	S2 TT20
Plum blossom ratchet wrench	S2 TT30	Hexagon ratchet wrench	6mm
Plum blossom ratchet wrench	S2 TT40	Socket ratchet wrench	21mm

No.	Part Name	Description	Picture
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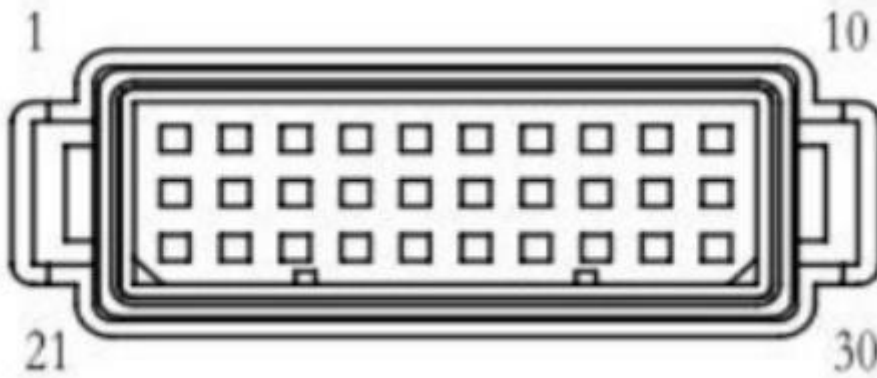
1	Rear wheel mounting bracket center shaft	<p>(1) Use 17mm socket ratchet wrench unscrew all 1pc nut.</p> <p>(2) Use 14mm open end wrench fix the barrel shaft, prevent the barrel shaft from rotating together when disassembling the nut.</p>	
2	Rear small cover of right connecting plate	<p>(1) Use S2 TT20 plum blossom ratchet wrench unscrew all 2pcs screws.</p>	
3	Aluminum connecting plate	<p>(1) Use 8mm hexagon ratchet wrench unscrew all 4pcs screws.</p>	

4	Rear left & right shock absorbers	<p>(1) Use 14mm socket ratchet wrench unscrew all 1pc screws.</p> <p>(2) Use S2 TT50 plum blossom ratchet wrench unscrew all 1pc screw.</p> <p>Same disassemble ways for left and right shock absorbers.</p>	
5	Rear disc brake mounting bracket	<p>(1) Use 8mm hexagon ratchet wrench unscrew all 2pcs screws.</p>	
6	Rear disc brake disc	<p>(1) Use 6mm hexagon ratchet wrench unscrew all 4pcs screws.</p>	

7	Rear brake pump	<p>(1) Use S2 TT40 plum blossom ratchet wrench unscrew all 2pcs screws.</p> <p>(2) Use S2 TT30 plum blossom ratchet wrench unscrew all 2pcs screws.</p>	
8	Rear wheel	<p>(1) Use 21mm socket ratchet wrench unscrew all 1pc nut.</p>	
9	Side gear motor	<p>(1) Use 8mm allen wrench unscrew all 4pcs screws.</p> <p>Same disassemble way as right side.</p>	

Chapter 4 An introduction to electrical parts and their repair

4.1 Controller



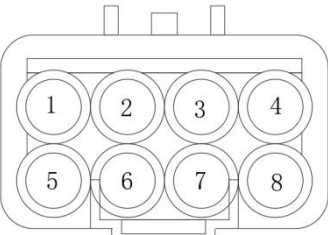
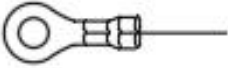
Fault	Description	Inspection	Solution
The vehicle cannot be ridden and the motor cannot rotate	Abnormal ignition switch, poor contact	Open the ignition switch and measure whether it is conductive with a multimeter.	Repair or replace the ignition switch
	Parking button damaged, poor contact	Press the button and measure whether it is conductive with a multimeter.	Repair or replace the parking button.
	Side stand switch damaged	Lift or put down the side stand and measure whether the side stand switch can be normally conductive or disconnected with a multimeter.	Repair or replace the side stand switch.
	Brake switch damaged	Operate the brake switch and measure whether the brake switch can be normally conductive or disconnected with a multimeter.	Repair or replace the brake switch.
	Throttle damaged	Follow the procedure for the throttle.	
	Battery malfunction	Follow the procedure for the battery.	
	Motor Malfunction	Follow the procedure for the motor.	

Controller alarm code list

Alarm code	Fault	Protection	Solution
1 (1 short)	Software overcurrent	Halt	1.Current threshold too low 2.Encoder harness issue 3.Sudden changes in load and speed 4.Restart key
2 (2 short)	Motor overspeed	Halt	1.The motor speed exceeds the set threshold 2.Is the encoder disconnected
3 (3 short)	Battery overvoltage	Halt	1.battery power cut 2.Excessive feedback current 3.Improper parameter settings
4 (4 short)	Abnormal KEY power supply	Halt	1.Open circuit and poor contact in the key circuit 2.Key sampling circuit malfunction
5 (5 short)	Abnormal 12 V power supply	Halt	1.Auxiliary power failure 2.There is a short circuit in the external power supply port
6 (6 short)	Abnormal 5V power supply	Halt	1. 5V power failure 2. 5V There is a short circuit point in the external power supply line
7 (7 short)	Angle sensor disconnected	Halt	1.Motor angle sensor disconnected or short circuit with other parts 2.Poor contact of connectors
8 (8 short)	Hardware overcurrent	Halt	1.The insulation of the motor is inadequate 2.Motor short circuit 3.MOS tube damaged
9 (9 short)	Current closed-loop failure	Halt	1.Motor phase wire open circuit or controller damage
10 (1 long)	Battery undervoltage	Derating	1.The battery voltage is below the set threshold 2.BMS protection,battery power cut 3.Poor contact between positive and negative busbars
11 (1 long 1 short)	Controller overtemperature	Derating	1.The controller temperature exceeds the set threshold 2.Shutdown cooling
12 (1 long 2 short)	Motor overtemperature	Derating	1.The motor temperature exceeds the set threshold 2.PTC type motor temperature wire disconnected
13 (1 long 3 short)	Abnormal current sensor	Halt	1.The current sensor signal is interfered
14 (1 long 4 short)	Angle signal interference	Halt	1.The Angle sensor signal is interfered
15 (1 long 5 short)	Transfinite of throttle signal	Halt	1.Throttle signal input over limit value 2.Throttle disconnected

16 (1 long 6 short)	Throttle not reset	Halt	1. Power on throttle not in zero position
17 (1 long 7 short)	Locked rotor	Derating	1. Locked rotor exceeds the predetermined protection time
18 (1 long 8 short)	BMS malfunction	Halt	1. Internal abnormality of the battery
19 (1 long 9 short)	Communication disconnected	Halt	1. BMS communication disconnected
21 (2 long 1 short)	Brake malfunction	Halt	1. External short circuit of brake signal wire

4.2 Motor

	Pin No.	Definition	Color	Wire Color Connected to the Controller
	1	Magnetic code A+	Yellow	Red A+
	2	Magnetic code B+	Green	Red B+
	3	Magnetic code Z+	Blue	Red Z+
	4	Magnetic code PWM	White	Green-Purple
	5	Magnetic code power supply	Red	Red-Purple
	6	Magnetic code negative pole	Black	Black-Purple
	7	/		
	8	Motor temperature signal	Orange	White
		Phase U	Yellow	Yellow terminal
		Phase U	Green	Green terminal
		Phase W	Blue	Blue terminal



Motor magnetic code signal position

Fault	Description	Inspection	Solution
Motor not rotating/rotating with abnormal noise	Motor magnetic code signal fault	Manually rotate the rear wheel and use a multimeter to measure the voltage of the negative pole of the magnetic code and the magnetic code A+, B+, and Z+, to see if they are normal	Replace motor magnetic code signal
	Motor phase failure	Check if poor contact or open circuit in the motor phase wires	Repair motor phase wire
	Motor water ingress	Disassemble the battery and observe if there is any water ingress that may cause rust or damage	Clean or replace motor
	Loose plug terminal	Check if there are any poor contact or open circuit in the connector of the motor magnetic code signal	Repair the magnetic code signal harness or connector
	Motor temperature signal	Measure the resistance value of the motor temperature probe with a multimeter to see if it is normal	Replace motor temperature probe
	Motor is normal	Troubleshooting issues with battery, controller, throttle, side stand switch, P-gear button, etc	

4.3 Battery

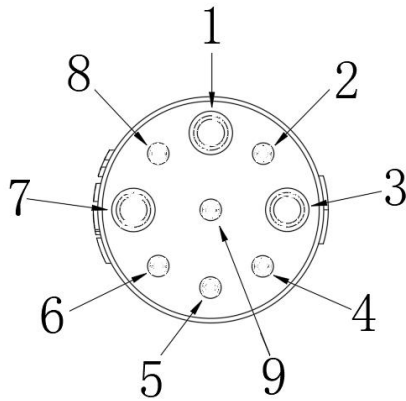


Red wire: positive pole output wire (P +)

Black wire: negative pole output wire (P-)

Orange wire: signal wire, the definition of signal wire pins is shown in the following figure

Pin No.	Definition	



1	/	
2	P2-	72V constant electricity negative pole
3	P-	72V negative pole
4	K-	Ignition switch control
5	CANL	
6	CANH	
7	P+	72V positive pole
8	/	
9	/	

Battery signal interface

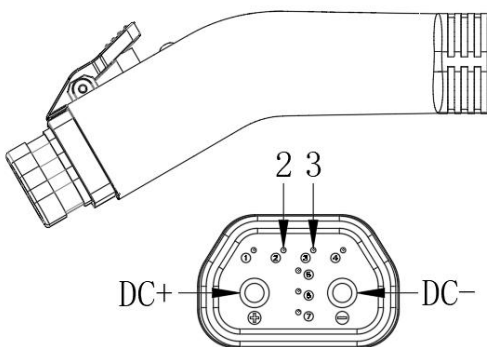
- ① P+ and P2- are battery constant power supply, power supply for the central control of the smart lock
- ② P+ and P - outputs: Short circuit P+ and K -, supply power to the DC-DC converter and controller.

Protection item	Parameter	Description
Undervoltage protection voltage	56V	Please charge the vehicle in a timely manner after use to ensure that the battery is fully charged. If stored for a long time in a low battery condition, there may be a phenomenon of inability to charge
Overvoltage protection voltage	84V	Please use a dedicated charger to charge the vehicle, otherwise it may cause overvoltage protection on the battery and can't use.
Discharge high temperature protection	60°C	When the battery occurs discharge high temperature protection, the vehicle needs to be parked for a period of time to keep the temperature of the battery below 60 °C and can continue to be used;
Discharge low temperature protection	-20°C	When the battery occurs discharge low temperature protection, the vehicle needs to be parked indoors for a period of time, when the temperature of the battery is above -20 °C and can continue to be used
Charge high temperature protection	45°C	When the battery occurs high temperature protection during charging, it is necessary to disconnect the charger and park it for a period of time, when the temperature of the battery is below 45 °C, and the vehicle can continue to be charged
Charge low temperature protection	0°C	When the battery occurs low-temperature protection during charging, the vehicle needs to be parked indoors for a period of time to allow the temperature of the battery to rise above 0 °C and can continue to be used;
Overcurrent	250±20A	Can't replace with non-original parts, otherwise it will cause the

discharge protection	(<30S)	battery to have overcurrent protection and cannot be used normally
Overcurrent charge protection	60±10A (<30S)	Please use a dedicated charger to charge the vehicle, otherwise it may cause overcurrent protection on the battery and can't use

The battery cannot output power to the vehicle normally	When opening the ignition switch, use the DC voltage range of a multimeter to measure the voltage of the charging port DC+and DC -
	Check if the battery has been stored for a long time causing a loss of power, first use a charger to charge it
	Check if the battery is in the discharge temperature protection state
	BMS problem, replace it
The battery cannot be charged	BMS problem, replace it
	Troubleshooting charger issues
	Disassemble the battery, measure the total voltage of the battery cell with the DC voltage range of a multimeter, check if the total voltage too low. Use a DC stabilized power supply to supplement the total voltage of the battery cell above 64V, and then use a charger for normal charging
	Disassemble the battery, measure the each battery cell with the DC voltage range of a multimeter, check if the voltage difference between the battery cells is too large. Use a DC stabilized power supply to supplement low voltage single series battery cells until the voltage difference between the cells is consistent
	BMS problem, replace it

4.4 Charger: Charge the 72V100Ah battery



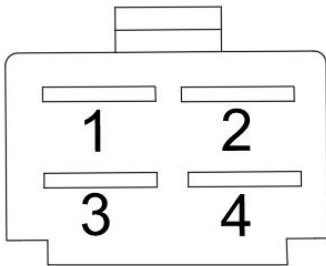
Pin No.	Definition	Parameter
DC+	Charger Output Positive	84V/20A
DC-	Charger Output Negative	GND
2	CAN H	
3	CAN L	

Charging connection method: First, connect the output plug of the charger to the charging port on the vehicle body, and then insert the input plug of the charger into the AC socket;

- ① During charging: Red indicator light stays on continuously;
- ② Charging completed: Green indicator light stays on continuously;
- ③ Red/Green indicator lights alternately flash: Charging is not normal, please repeat the charging connection method steps again.

Fault	Description	Inspection	Solution
Unable to charge	Charger malfunction	Connect the charger input plug to the charging gun head, and within 20 seconds, measure the voltage of DC+ and DC- with a multimeter in voltage mode to determine if it's normal.	Replace the charger.
	Battery malfunction	Troubleshoot battery issues	
	Poor contact of charging plug	Inspect the charging plug of the charger or the charging socket on the vehicle.	Repair or replace the charging plug or charging socket.
	malfunction of communications	Faulty communication between charger and battery	Change charger
Indicator light not illuminated	Charger indicator light damaged	Able to charge normally, but indicator light not illuminated.	Repair or replace the indicator light.
Fan not rotating or noisy	Fan damage	It can be charged normally, but the fan does not turn or the noise is loud	Repair or replace the fan

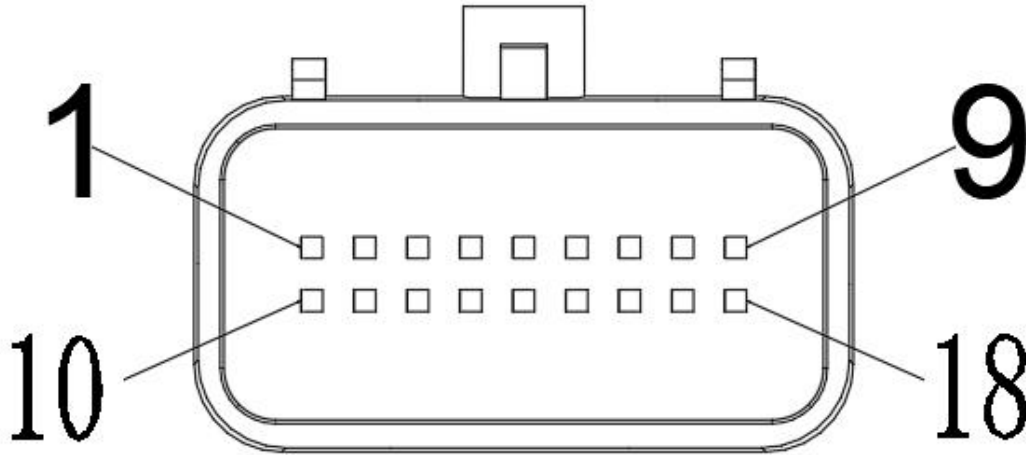
4.5 DC-DC Converter: Power Supply for Display, Lights, and Horn



Pin No.	Definition	Parameter	Description
1	Input	72V+	
2	Negative Pole	GND	
3	Output	12V+/10A	
4	Ignition Switch	72V+	Control the output of the converter

Fault	Description	Inspection	Solution
Open the ignition switch, the display does not light up, the lights do not illuminate, the horn does not sound	Abnormal input voltage	Troubleshoot battery issues.	Repair battery.
		Measure the input voltage of DC converter pins 1 and 2 with a multimeter.	Repair wiring harness.
	Abnormal ignition switch voltage	Troubleshoot ignition switch issues.	Repair or replace ignition switch
		Measure if the voltage of pins 2 and 4 of the ignition switch is normal with a multimeter.	Repair wiring harness.
	No 12V voltage output	Measure the voltage of DC converter pins 2 and 3 with a multimeter.	Replace converter
Poor contact of			Repair or replace connectors.




4.6 Display



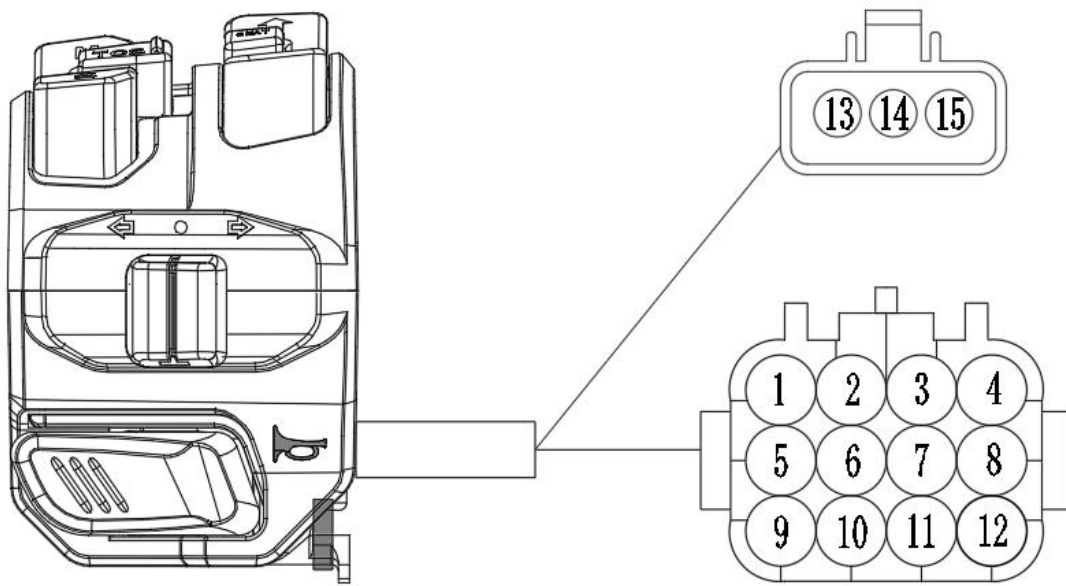
Pin No.	Definition		
1	Left Turn Signal	12V+ effective	When the hazard lights or left turn signal switch is turned on, the vehicle's turn signal lights up normally, but the turn signal indicator on the display does not illuminate, then the display needs replacement.
2	Right Turn Signal	12V+ effective	When the hazard lights or left turn signal switch is turned on, the vehicle's turn signal lights up normally, but the turn signal indicator on the display does not illuminate, then the display needs replacement.
3	high beam	12V+ effective	When the high beam switch is turned on, the high beam can illuminate normally, but the high beam indicator on the display does not illuminate, then the display needs replacement.
4	Position Light	12V+ effective	The position light can illuminate normally, but the position light indicator on the display does not illuminate, then the display needs replacement.
5	/		
6	down button—	GND effective	Press the down button -, the display does not respond, to rule out the failure of the switch, then the display problem needs to be replaced
7	return button SET	GND effective	Press the return button SET, the meter does not respond, to rule out the fault of the switch, then the display needs to be replaced.
8	/		
9	Positive Pole of Power Supply	DC12V+	Supplied by DC-DC converter, if there is no 12V voltage, check the DC-DC converter.

10	/		
11	/		
12	Enter button ENT	GND effective	Press the enter button ENT, the meter does not respond, to rule out the fault of the switch, then the display needs to be replaced.
13	/		
14	up-down button+	GND effective	Press the up-down button+, the meter does not respond, to rule out the fault of the switch, then the display needs to be replaced.
15	CAN L		
16	CAN H		
17	/		
18	Negative Pole of Power Supply	GND	



	Motor Malfunction	When this icon appears on the display, it indicates a malfunction in the motor, requiring troubleshooting of the motor.
	Throttle Malfunction	When this icon appears on the display, it indicates a malfunction in the throttle, requiring troubleshooting of the throttle.
	Brake Malfunction	When there is no braking action and the motor does not rotate, this icon appears on the display, it indicates a malfunction in the brake switch, requiring troubleshooting of the brake switch.

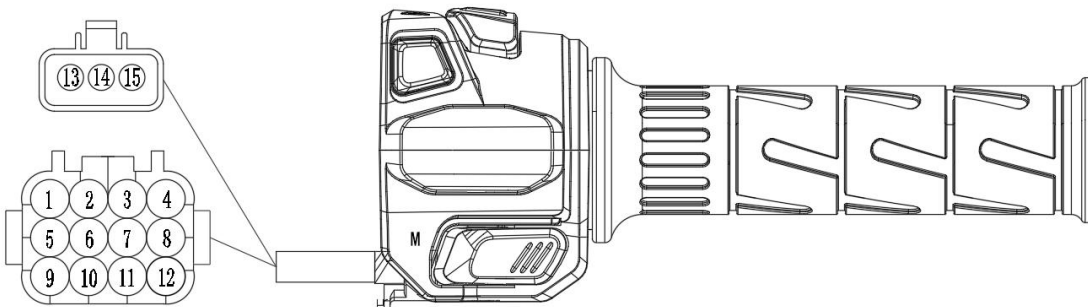
4.7 Left switch



Pin No.	Definition	
1	Right Turn Signal	When the 12V+ power supply to the turn signal is effective, if press the right turn signal and the turn signal does not turn on, repair or replace the switch. If some turn signals do not turn on, it is necessary to investigate or replace the lights that do not turn on.
2	Left Turn Signal	When the 12V+ power supply to the turn signal is effective, if press the left turn signal and the turn signal does not turn on, repair or replace the switch. If some turn signals do not turn on, it is necessary to troubleshoot or replace the lights that do not turn on.
3	Turn signal power supply	The turn signal switch, and measure the voltage with the DC voltage range of a multimeter. If the voltage is abnormal, it is necessary to troubleshoot or replace the flasher.
4	MODE	GND effective,Switching EOC, NORMAL, SPORT modes, when the switch is damaged and cannot switch modes, the switch needs to be repaired or replaced.
5	Low beam	When connecting to 12V+ effective, if the switch is damaged and unable to turn on the low beam, repair or replace the switch. If the switch is normal, check or replace the headlights.
6	Headlight power supply	12V+
7	High Beam	When connecting to 12V+ effective, if the switch is damaged and unable to turn on the high beam, repair or replace the switch. If the switch is normal, check or replace the headlights.
8	return button SET	GND effective,Adjustment of the instrument function keys, the switch is damaged can not adjust the instrument, need to repair or replace the switch.
9	12V+ Power	Powering the switch's backlight, horn, and override lights.
10	horn	12V+effective,When the switch is damaged and the horn does not sound,

		the switch needs to be repaired or replaced, and if the switch is normal, the horn needs to be checked or replaced.
11	Negative Pole	GND
12	Enter button ENT	GND effective, adjustment of the instrument function keys, the switch is damaged can not adjust the instrument, need to repair or replace the switch.
13	down button—	GND effective, adjustment of the instrument function keys, the switch is damaged can not adjust the instrument, need to repair or replace the switch.
14	CCS	GND effective, repair or replace the switch if it is damaged and cannot enter CCS.
15	up-down button+	GND effective, adjustment of the instrument function keys, the switch is damaged can not adjust the instrument, need to repair or replace the switch.

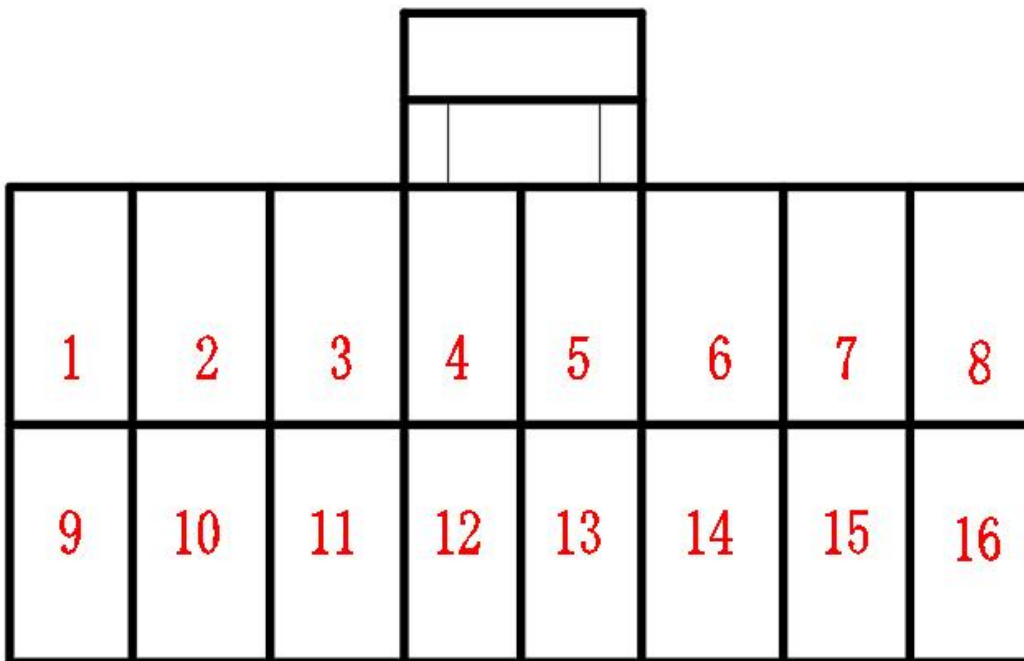
4.8 Right switch



Pin No.	Definition	
1	Right Turn Signal	When the 12V+ power supply to the double flash switch is effective, if press the right turn signal and the turn signal does not turn on, repair or replace the switch. If some turn signals do not turn on, it is necessary to investigate or replace the lights that do not turn on.
2	Left Turn Signal	When the 12V+ power supply to the double flash switch is effective, if press the right turn signal and the turn signal does not turn on, repair or replace the switch. If some turn signals do not turn on, it is necessary to investigate or replace the lights that do not turn on.
3	/	
4	M button	Switching 1.2.3 gears, connected to the GND is effective, the switch is damaged can not be switched, need to repair or replace the switch
5	Double flash	12V+, through the flasher output power supply, press the double flash switch,

	switch power supply	with a multimeter DC voltage file to measure the voltage is not normal, need to troubleshoot or replace the flasher.
6	/	
7	Reverse gear	When connecting to GND effective, if the switch is damaged and cannot be released from the reverse gear, it is necessary to repair or replace the switch.
8	Parking gear	When connecting to GND effective, if the switch is damaged and cannot be released from the parking gear, it is necessary to repair or replace the switch.
9	12V+ power supply	Powering the switch's backlight.
10	/	
11	Negative Pole	GND
12	/	
13	Throttle Signal	Output the signal to the controller. When the vehicle powered on, use the DC voltage range of a multimeter to measure the voltage of throttle signal and the negative of the throttle. Rotate the throttle voltage from 0.8 to 4.2V. If the voltage remains unchanged, the Hall element in the throttle is damaged. The Hall element, throttle, or the entire right switch assembly can be replaced.
14	Negative Pole of Throttle	GND
15	Throttle 5V+	Power supply by the controller, when the vehicle powered on, measure the 5V+ and negative terminals of the handlebar with the DC voltage range of a multimeter to be 4.2V. If this is not normal, it is necessary to troubleshoot the controller issue.

4.9 Intelligent lock central control



Pin No.	Definition	Wire Color	Pin No.	Definition	Wire Color
1	72V Positive Pole of Power Supply	Red	9	72V Negative Pole of Power Supply	Black
2	Solenoid valve	Red-White	10	solenoid valve	Black-White

3	Microswitch	Red-Black	11	Microswitch	Black-Red
4	Alarm	Brown	12	Lock motor signal	Blue
5	Ignition switch ACC test	Orange	13	/	
6	12V	Red-Blue	14	LED-	Grey-Green
7	Turn single	Yellow	15	LED+	Red-Green
8	Turn single	Yellow-White	16	Antenna	

Fault	Description	Inspection	Solution
There is no response when press the remote control, can't turn on the Ignition switch	When pressing any button on the remote control, the vehicle does not respond. Observe whether the indicator light on the remote control is on	Remote control battery is dead	Replace the remote control battery
	Battery malfunction	Follow the procedure for the battery	
	DC converter malfunction	Follow the procedure for the DC converter	
	can't turn on the Ignition switch	Ignition switch malfunction	Repair or replace Ignition switch

Report errors and advice

If you find any errors or if you have any advice to manual produced by JiangSu Ator New Power Co., Ltd., we would like to listen.

You can report the error and advice to JiangSu Ator New Power Co., Ltd. through email, our contacting information is as follows:

While contacting, please prepare the following info.:

- Your name:
- Your vehicle's identification No.
- The description of the issue that you are concerned with
- Necessary relevant info.(such as a sample or marked page)

JiangSu Ator New Power Co., Ltd.will reply to your problem in the following methods:

- Present your problem to relevant repair engineers
- Ask relevant repair engineers to reply
- Provide the answer to your problem in 10 working days

We welcome ATOR customers to send their concerned issue to After Sale Department of JiangSu Ator New Power Co., Ltd.

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