eC2i

Service Manual

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Zhejiang KAYO MOTOR Co., Ltd.
January 2026

Preparation Instructions

This service manual provides a comprehensive guide to the maintenance and adjustment procedures, disassembly and assembly guidelines, inspection and maintenance protocols, troubleshooting methods, and technical data for the eC2 and eC2itwo-wheeled electric motorcycles. It also includes detailed graphical materials to assist in operational procedures.

Read this manual carefully and perform maintenance according to standard operating procedures. This will effectively extend the service life of various components and improve the reliability of the entire vehicle.

Chapter 1 mainly introduces the general work items, the tools used, the basic technology and the maintenance parameters.

Chapter 2 introduces the assembly and disassembly technology of vehicle cover plate.

Chapter 3 introduces the periodic inspection and adjustment of the vehicle

Chapter 4 introduces the information about the vehicle surroundings.

Chapter 5 introduces the information about inspection and maintenance of vehicle signal and lighting system.

Should any changes occur to this manual due to vehicle modifications or other reasons, no separate notice will be given. Maintenance and care should be performed according to the vehicle's actual condition.

Catalogue

Zhejiang KAYO MOTOR Co., Ltd.

Research and development department

January 2026

Unit Conversion Table in This Book

commodity	unit conversion
Pressure	1kgf/cm2=98.0665kPa;1kPa=1000Pa
	1mmHg=133.322Pa=0.133322kPa
Torque	1 kgf m=9.80665 N·m
volume	1mL=1cm3=1cc
	1 liter =1000 cubic centimeters
Force	1kgf=9.80665N
length	1in=250.4mm

Hazard/Warning/Note

Please read the following instructions carefully, which emphasize the specific meanings of the words "danger", "warning", and "caution". Special attention should be paid to their prominent meanings during repair.

Hazard: refers to the alertness to high-risk conditions
Warning: indicates a moderate risk
Warning: A warning for minor hazards

Please note that the "Hazard" and "Warning" sections in this service manual do not cover all potential risks during motor operation and maintenance. Therefore, in addition to the relevant "Hazard" and "Warning" provisions, maintenance personnel must also possess basic mechanical safety knowledge. If you are unsure whether you can complete the entire maintenance procedure, consult an experienced senior technician.

1. Maintain information

1.1 Operational Precautions

Safety Precautions

1. It is mandatory to wear workwear (e.g., one-piece workwear), safety helmets, and protective boots suitable for the operation. When necessary, additional protective equipment such as dust-proof goggles, dust masks, and gloves should be worn to safeguard the body.
2. Always turn off the vehicle's power before performing any repair work, as this is the most effective way to prevent electric shocks and unintended starts.
3. The battery, controller, and motor of an electric motorcycle are classified as Class B voltage circuits, with their connecting cables typically featuring orange insulation for identification. When handling these components, ensure the power supply is completely disconnected.
4. During maintenance, especially when handling electrical circuits, use specialized tools with insulating sheaths such as insulated screwdrivers and insulated wrenches, and wear insulating gloves and protective goggles to avoid the risk of electric shock.
5. Power batteries should be stored in a dry, cool, and light-protected environment. Keep them away from fire or heat sources.
6. During maintenance, ensure that rotating and moving parts such as rear wheels and chains do not touch your hands or clothing.
7. When working together, two or more people must keep checking in to ensure safety.

Precautions for Disassembly and Assembly

1. All components, lubricants, and greases must be KAYO-branded products.
2. All system components should be stored separately to ensure each part can be reinstalled in its original position.

3. Clean the vehicle of dirt and dust before maintenance.
4. After disassembly, all components, including gaskets, O-rings, and cotter pins, must be replaced with new parts.
5. After disassembling and inspecting the parts, clean them thoroughly before measurement, blow off the cleaning agent with compressed air, and apply lubricating oil to the surface prior to assembly.
6. During disassembly, inspect and measure key components to ensure they can be restored to their original state before assembly.
7. Fasteners such as bolts, nuts, and screws should be pre-tightened, then tightened to the specified torque in a diagonal pattern, starting from the largest and moving inward and outward.
8. When disassembling rubber components, inspect for signs of aging and replace them in advance if necessary. Additionally, as rubber components are not resistant to corrosion by gasoline, kerosene, and other volatile oils, minimize the attachment of such substances.
9. Inspect rubber components for signs of aging and replace them when necessary. Avoid contamination of rubber surfaces by exposure to volatile oils or greases.
10. As per the Service Manual, apply or inject the recommended grease into the specified components.
11. Specialized tools must be used for disassembly and assembly operations.
12. Rotate the ball bearing with your fingers to check for smooth movement and stable operation. If force was applied to the balls during disassembly, the bearing must not be used again after removal.

- If the axial and radial clearance of the bearing is excessive, it should be replaced.
- Bearings that feel seized during rotation should be cleaned. If the seizure persists after cleaning, replacement is required. For those unsuitable for cleaning, direct replacement is recommended.
- The bearing was initially tightly fitted to the shaft or shaft diameter. If the fit becomes loose after disassembly, the bearing should be replaced.

13. Grease should be applied before bearing assembly. When installing single-face dustproof bearings, attention must be paid to the installation direction. For open or double-face dustproof bearings, the face with the manufacturer's logo and dimensions should be installed facing outward.
14. After assembly, all fasteners must be checked for tightness and proper operation.
15. Brake fluid and grease may damage coating surfaces, plastic components, rubber parts, etc. Avoid letting them adhere to these parts. Immediately rinse with water from the adhesive kit.
17. Do not allow dust, mud, or similar contaminants to enter the electrical components or the hydraulic system of the brakes.

18. Avoid excessive twisting or bending of the cable. Deformed or damaged cables may cause poor movement or damage.
19. When assembling the protective cap components, if grooves are present, the protective cap must be inserted into them.

pay attention to :

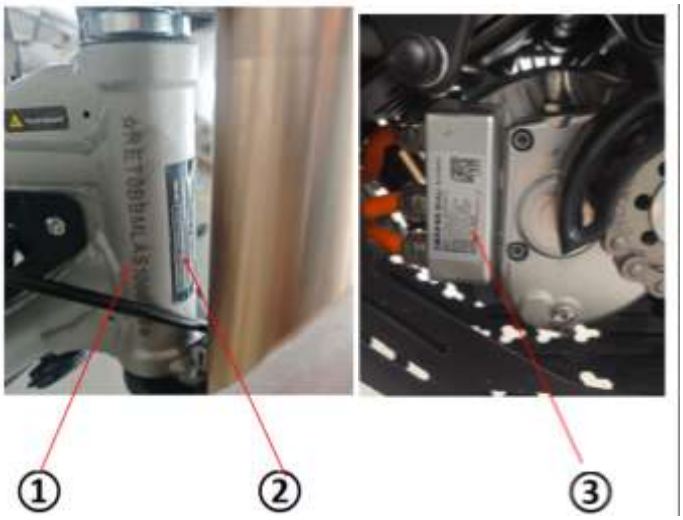
- During the trial operation, perform maintenance according to standard procedures and promptly resolve any faults.
- After the break-in period, the entire machine must complete post-break-in maintenance before entering the normal operation phase.

1.2 Vehicle Identification Number

1 VIN

2 Vehicle license plate

3 Motor nameplate



1.3 Main Parameter Table

Items	parameter

Vehicle model		eC2i
length (mm)		2135
width (mm)		835
altitude (mm)		1210
wheelbase (mm)		1490
Motor model		PMSM Motor
Battery type		NCM Lithium 73V50Ah
power rating (KW)		10.5KW
Vehicle prepared mass (kg)		108
capacity of personnel		1 person (driver)
Maximum load capacity (kg)		150
tire size	front wheel	80/100-21
	back wheel	110/90-18
Wheel rim specification	front wheel	1.60×21 black aluminum sanding wheel hub
	back wheel	2.15×18 Black Aluminum Sand Blasting Wheel Hub
engine	Motor type	permanent magnet synchronous motor
	PK Power (kW)	21
	Rated Max Power (kW)	18kW
	Peak Torque (N·m)	75N·m
	Peak Speed(rpm)	7500
	gear ratio of motor	1:2.941
	Protection Level	Ip67
	cooling-down method	forced air cooling

Items		parameter
rated voltage (V)		73V
dump energy		3.7 kWh
drive	Drive Mode	ECO / TRAIL / SPORT / TURBO / REVERSE
	ECO Modes	4 hours

	Aggressive Mode	1 hours	
	Charging Time	5.5 hrs	
Braking system type		front	Hydraulic brake system with double piston pump Ø270 mm-3 mm brake disc
		behind	Hydraulic Brake System of Double Plunger Pump Ø240 mm-4 mm brake disc
buffering technique	suspension method	front	Inverted adjustable front shock absorber, L=880mm
		behind	Adjustable rear shock absorber, L=450mm
Frame type		high strength steel scaffold	
other			
chain		S55C+42CrMo_520*3_112L	
posterior horizontal fork		Aluminum flat fork	
Directional handle		High strength aluminum alloy adjustable diameter handlebar	

1.4 Maintenance Parameter Table

Wheel (same for front and rear)

commodity		standard	Quantity limit
flange outer circle	direction	0.8 mm	2.0 mm
	broadwise	0.8 mm	2.0 mm
tyre	residual groove	-	3 mm
	pressure	Front wheels: 1.6-1.8bar (23~26 psi) Rear wheels: 1.8-2.0bar (26~29 psi)	-

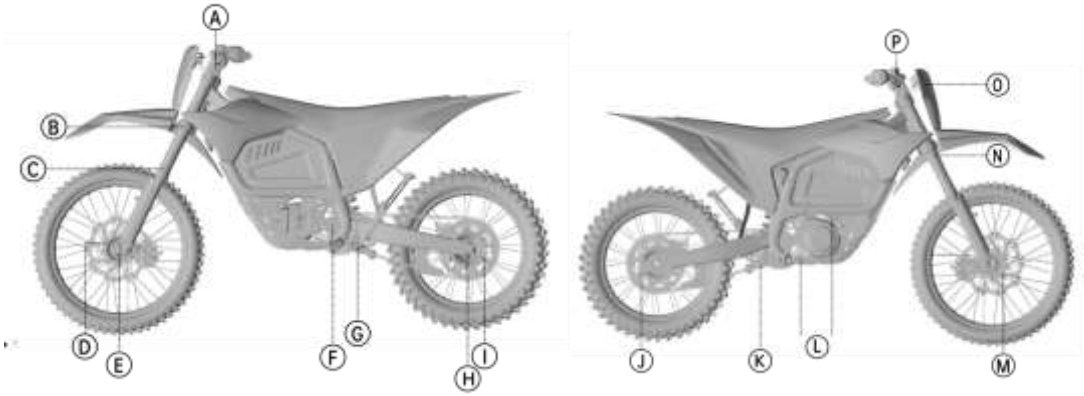
brake assembly

article		standard	Quantity limit
front brake	travel of handwheel	2~ 6mm	-
	disc thickness	3.0 mm	2.5 mm
rear brake	brake pedal travel	10 ~ 25mm	-
	disc thickness	4.0 mm	3.5 mm

1.5 Fastening Torque of Fasteners

Note: Apply rust-proof grease to the threaded section and mating surfaces before installation.

Tightening torque of specified parts-vehicle parts



number	position	name	specifications	remarks
A	Directional pressing block	internal hexagon head cylindrical screw	M8*110	23±4N·m
B	pre-damping upper fixing	internal hexagon head cylindrical screw	M8*25	19±2N·m
C	pre-damping lower fixed	internal hexagon head cylindrical screw	M8*25	15±2N·m
D	front wheel brake disc	hexagon headed bolt	M6*20	9±2N·m
E	front wheel	front hollow shaft	M16*1.5	85±5N·m
F	posterior horizontal fork	flange shaft	M16*1.5	95±5N·m
G	Single support	external hexagonal stepped bolt	M10*1.25	71±5N·m
H	back wheel	hollow rear axle	M22*1.5	85±5N·m
I	rear sprocket	internal hexagonal high countersunk screw	M8*30	33±4N·m
J	rear wheel brake disc	hexagon headed bolt	M6*20	9±2N·m
K	post shock absorber	T-slot bolt	M10*1.25	35±5N·m
L	any power-generating or power-driven machine	hexagon flange surface bolt	M10*1.25	71±5N·m

M	pre-damping lower foot	inside hexagonal bolt	M8*16	22±4N·m
N	front fender	internal hexagonal flower head bolt	M6*12	5±1N·m
O	Front windshield	internal hexagonal flower head bolt	M8*16	22±4N·m
P	Brake pump	external hexagon flange bolt	M6*12	9±2N·m

Tightening torque for unspecified fasteners

class	torsion Nm	class	torsion Nm
5mm bolt and nut	4.5~6	5mm screw	3.5~5
6mm bolt and nut	8~12	6mm screw	7~11
8mm bolt and nut	18~25	6mm raised bolt	10~14
10mm bolt and nut	30~40	8mm protruding bolt and nut	20~30
12mm bolt and nut	35~50	10mm protruding bolt and nut	30~40

1.6 Grease, Sealant, and Thread Locking Agent

Coating area	matters need attention	lip
The connection between the frame and the flat fork		light lithium soap base grease
Front and rear axle components		
\At the flat fork bearing		

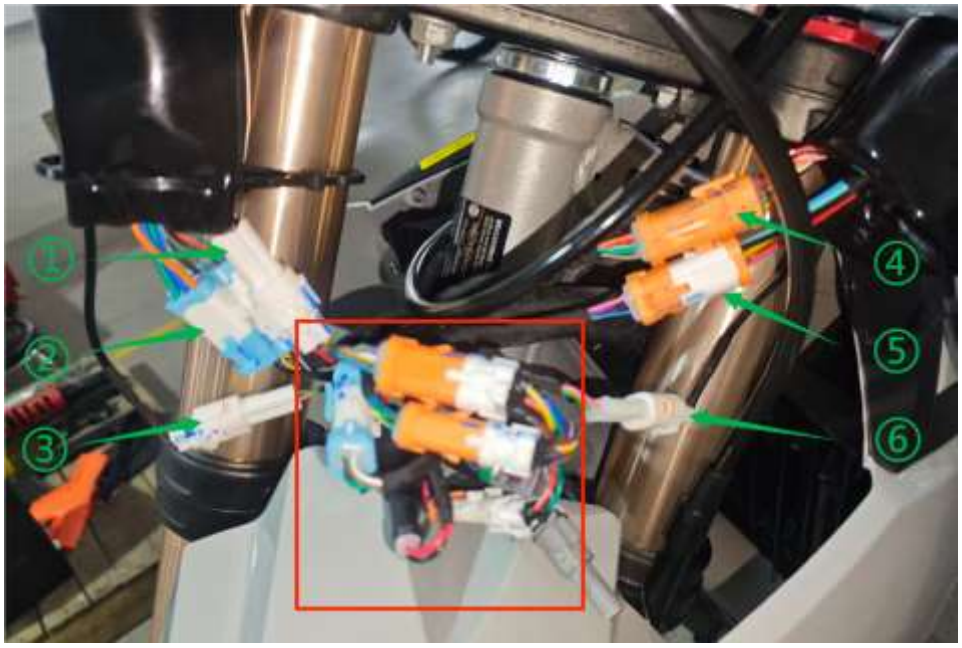
part	content	oils
	lubricating	Recheck the lithium-based grease.
At the flat fork bearing		
At the steel bowl of the frame		
single support installation shaft		
In the left and right concave sleeves of the front and rear wheels		

part	content	oils

guide wheel mounting bolt	fixed	red thread fastener Loctite 263
lower connecting plate bolt		
motor mounting bolt		
rear sprocket fitting bolt		
rear fork mounting bolt		
rear disc brake disc mounting bolt		blue thread fastener Loctite 243
front disc brake disc mounting bolt		

Lubrication control, bearings and rotating parts

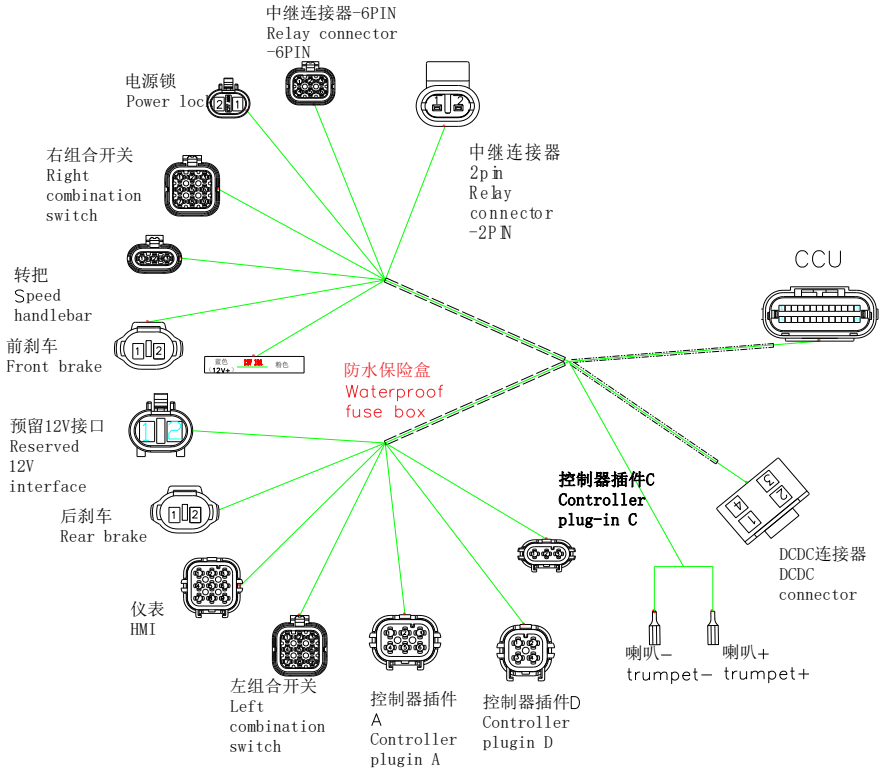
1.7 Schematic Diagram of Cable and Wire Layout



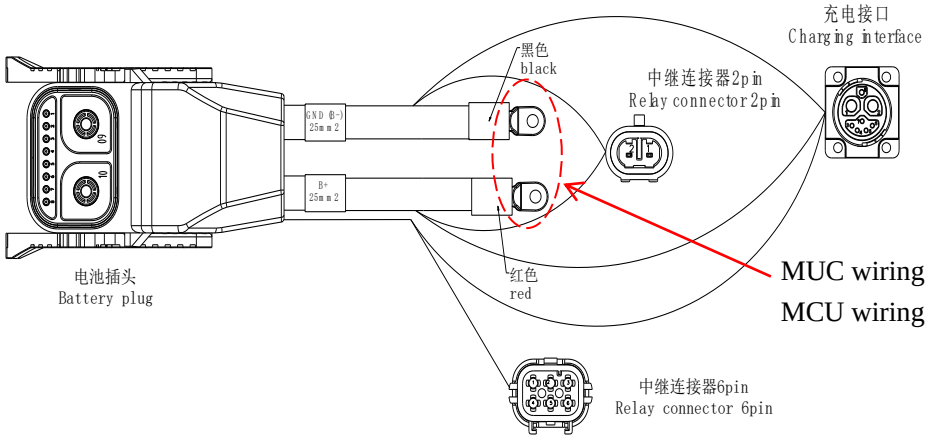
1. Lock assembly connector 2. Right combination kit connector 3. Front brake lever connector 4. HMI connector 5. Left combination switch connector 6. Rear brake lever connector

Note: The red box connector refers to the wiring diagram.

Mainline diagram



Subline diagram



Note: The cover plate must be removed before inspecting and repairing the above components. Refer to Chapter 2—Vehicle Component Covering for the disassembly method.

2 Cover vehicle parts

2.1 Maintenance Information

Operation Notes

When replacing a cover that is already attached or riveted to the vehicle with a cover that has a regulatory warning label, the corresponding label must be fully and correctly added.

This chapter outlines the disassembly and assembly sequence for the vehicle body cover. For internal repairs requiring removal of related covers, this section provides a reference.

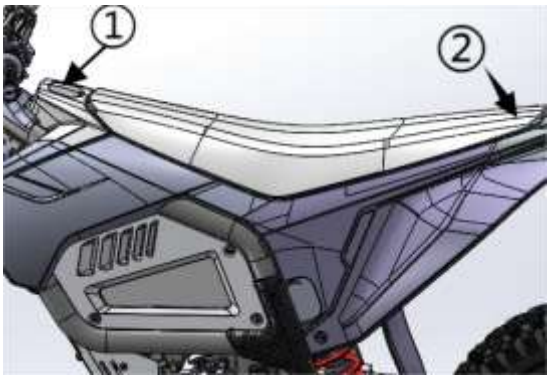
This chapter introduces the disassembly and assembly operations of the shelf, seat cushion and external parts.

According to the wiring diagrams of cables, pipelines, and circuits, route the pipelines and cables through the designated positions.

2.2 Installation Torque

M8 bolt	21（2.1）	Torque N·m (kgf·m)
M6 bolt	10（1.0）	Torque N·m (kgf·m)
M5 bolt	5（0.5）	Torque N·m (kgf·m)
self tapping screw	4（0.4）	Torque N·m (kgf·m)

2.3 Seat Cushion Disassembly and Assembly



dismantle

1. The key unlocks the seat cushion lock 1
2. Pull the seat cushion up and forward

install

Perform in the reverse order and direction of disassembly

After installation, check that the seat cushion is properly installed and secured.

2.4 Removal and Assembly of Front Windshield

dismantle

1. Remove the bolts securing the headlight bracket 1

install

Install in reverse order of disassembly

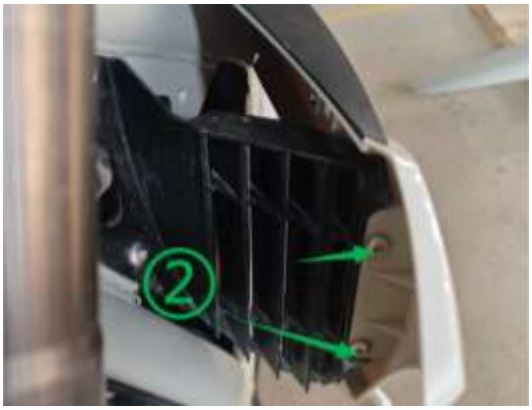
2.5 Removal and Installation of Left and Right Front Guard Plates and Air Inlet Plates

dismantle

1. Remove the seat cushion (→2.3)
2. Remove installation bolt 1
3. Remove installation bolt 2
4. Remove the left front guard plate 3

pay attention to

The disassembly and installation procedures for the right front guard plate are identical to those for the left front guard plate.



install

Install in reverse order of disassembly

2.5.1 Removal and Installation of the Left and Right Air Inlet Plates

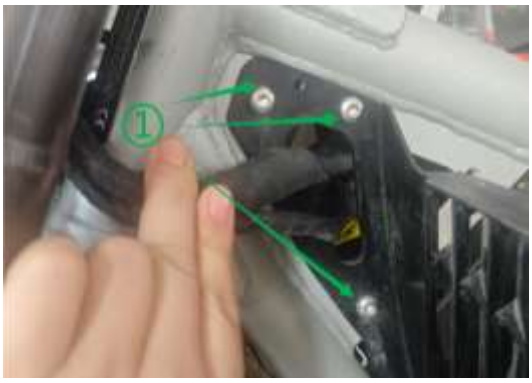
dismantle

1. Remove the seat cushion (→2.3)

2. Remove the left front guard plate (2.5)

3. Remove the front windshield (2.4)

4. Remove fixing bolt 1



5. Unplug all electrical components, including the combination switch, instrument panel, key, and brake lever (→1.7)

6. The wiring harness passes through the left front fender.

pay attention to

The removal and installation procedures for the right air intake panel are identical to those for the left one.

install

Install in reverse order of disassembly

2.6 Removal and Installation of Left and Right Rear Side Panels

dismantle

1. Remove the seat cushion (→2.3)

2. Remove bolt 1

3. Remove the left rear side panel 2

4. Remove the mudguard screw 3

pay attention to

The disassembly and installation of the right rear side panel are identical to those of the left rear side panel.

install

Perform in the reverse order and direction of disassembly

2.7 Disassembly and Assembly of DCDC, Storage Compartment, Spoiler Plate, and Rear Fender

pay attention to

1. Remove the seat cushion and the left rear side panel (→2.3, 2.6)

2.7.1 Storage and Wingtip Plate Disassembly and Assembly

dismantle

1. Unplug the CCU electrical connector 1
2. Remove bolt 2 from the storage compartment

3 Remove the storage compartment

4. Remove bolt 3 that secures the rear spoiler
5. Remove bolt 4 from the mudguard

install

Perform in the reverse order and direction of disassembly

2.7.2 DCDC Demolition, Disassembly and Assembly

dismantle

1. Unplug the DCDC device 1
2. Remove the fixed bolt 2

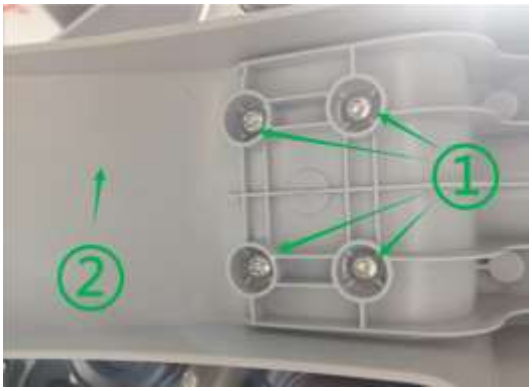
install
Perform in the reverse order and direction of disassembly

2.7.3 Rear Mudguard and Rubber Mudguard

dismantle
1. Remove bolt 1 from the left fixed fender
2. Remove bolt 2 from the right side of the fixed fender
3. Remove the bolt 3 that secures the rubber mudguard

install
Perform in the reverse order and direction of disassembly

2.8 Removal and Installation of Front Fender



dismantle

1. Remove bolt 1 from the lower connecting plate
2. Remove the front fender 2

install
Perform in the reverse order and direction of disassembly

2.9 Dismantling and Assembly of Shock Absorber Shield

dismantle

1. Remove bolt 1 from the left front shock absorber
2. Remove the fixing bolt 2 and the disc brake oil pipe 3
3. Remove the left front shock absorber guard plate 4

pay attention to

The disassembly procedure for the left front shock absorber cover and the right front cover is largely identical, with only the buckle section differing.

install

Perform in the reverse order and direction of disassembly

3. Regular Inspection and Adjustment

Cycling Safety

Different warning labels are placed in visible locations on the vehicle. Do not remove any warning labels. If these labels are missing, you or others may not be able to recognize the danger, which could result in injury.

Always use original factory parts and accessories approved by us.

Using non-original parts, improper installation of accessories, or incorrect loading may compromise vehicle performance and even violate regulations. Please ensure your safety and that of others.

This product is intended for use by trained individuals who hold a valid driver's license and operate the vehicle with reasonable and prudent care in road traffic.

Note the following:

Before driving, users should inspect all vehicle components according to the daily safety check section. If any issues are found, the vehicle should be repaired before driving.

Users shall comply with local laws and regulations. Driving under the influence of alcohol or after taking medications is prohibited.

Wear appropriate protective equipment such as a helmet, boots, gloves, and pants or jackets with protective features during all driving.

Do not modify the vehicle in any way, as improper modifications may lead to serious consequences.

Any modification to the device or electrical components of this product will affect driving safety, endurance and overall vehicle performance.

Incorrect loading behavior may lead to serious consequences.

Incompatible installation accessories may pose safety risks.

Maintenance information

Operation Notes

pay attention to

- Wear long-sleeved work clothes and gloves.
- Smoking and fire sources are strictly prohibited in the workplace, and work should be carried out in a well-ventilated area.
- Rotating parts (e.g. drive systems) should not pinch hands or clothing.
- The vehicle must be placed on a flat and stable surface.

3.1 Determination of Maintenance Cycle

Vehicle maintenance is a regular and cyclical task. Regular maintenance is crucial for vehicles, as proper maintenance ensures excellent performance, reliable operation, and cost-effective durability. Below is the vehicle maintenance schedule:

Note: The table below is designed for normal operating conditions. If used under harsh conditions, the maintenance interval should be shortened accordingly.

Maintenance Project	commodity	mileage (km)				
	Cycle	750	3000	6000	9000	Conduct daily checks before riding every time
lubricating oil		R	R	R	R	I
Drive chain			I/L	I/L	I/L	
Engine support			I	I	I	
brake pad wear			I	I	I	
brake assembly			I	I	I	
brake fluid			I	I	I	
suspension system			I	I	I	
fastener			I	I	I	
spoke		I	I	I	I	
tired			I	I	I	

To maintain good performance, the motorcycle should be checked and maintained regularly.

The meanings of uppercase letters in the table are as follows:

I: Inspection, including maintenance, cleaning, lubrication, oiling, repair, or replacement when necessary

A: Check and adjust as necessary C: Clean R: Replace L: Lubrication frequency

Note: Regular cleaning is required when cycling in dusty areas.

For motor inspection, adjustment, or replacement, contact KEO Service Center to prevent motor damage.

3.2 Inspection and Maintenance Methods

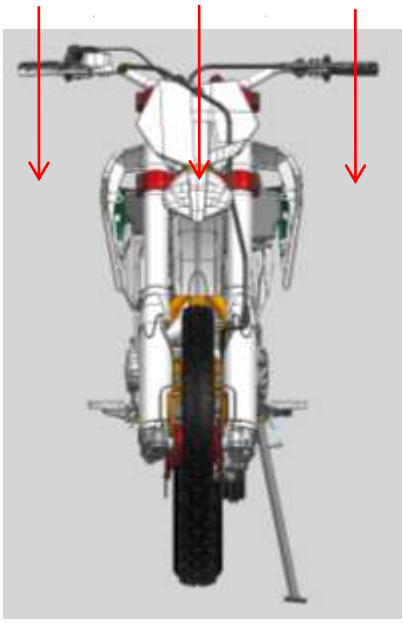
Check and maintain items			Maintenance cycle			requirement
Check components		inspection item	daily inspection	semiannual examination	annual inspection	
turn installation	steering wheel	flexibility of operation	○			
	steering system	damage	○			
		steering system installation status	○			
		ball bearing wobble	○			
brake apparatus	oil pipe	Looseness, loosening, and damage	○	○		
	Hydraulic brake and brake disc	Front and rear brake fluid levels	○	○		The brake fluid level should be above the lower limit.
		Friction disc wear and damage	○	○		If the front brake disc thickness is less than 30.5mm and the working disc thickness of the rear brake disc is also below 30.5mm, replacement should be performed promptly.
	brake block	Friction disc wear and damage	○	○		The thickness of the brake pad (friction plate) should be ≥1 mm. If the thickness is less than 1 mm, replace it.

Devices in use	wheel	tire pressure	○	○		Front wheels: 200kPa (29 PSI) Rear wheels: 250kPa (36 PSI)
		Cracked and damaged tires	○		○	
		Depth of fetal groove and abnormal wear	○		○	If there are no wear marks on the tire surface, the remaining groove depth should be no less than 3 mm.
		Loosen the wheel nut and wheel axle	○	○		
		front wheel bearing vibration	○		○	
		jitter of rear wheel bearing	○		○	
buffered device	posterior horizontal fork	The joint area is shaking.	○		○	
		Bearing inspection	○		○	
	shock absorber	Oil leakage and damage	○		○	
		specially good effect			○	
transmission apparatus	pre-damper	Transmission and Lubrication	○		○	
	rear shock absorber	Transmission and Lubrication	○		○	
transmission apparatus	chain sprocket drive	The connector is loose	○	○		
		The chain is shaking.	○	○		The chain swings up and down by 20-30 millimeters.

frame	Loose and damaged			○	
else	Lubricant condition in various parts of the frame			○	
Components with confirmed abnormalities during operation	Check if the relevant components are abnormal	○			

3.3 Steering Column and Brake System

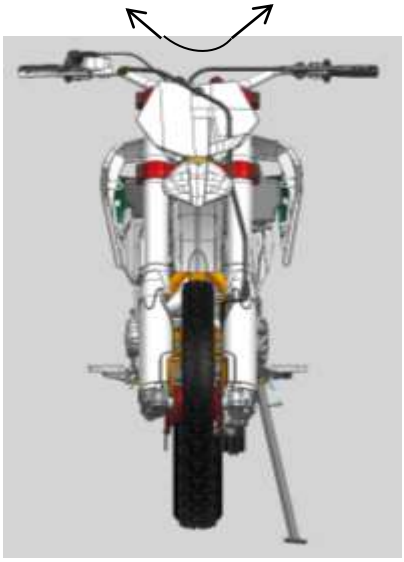
Position the vehicle horizontally, grip the steering wheel firmly, and apply force in the direction shown in the diagram to check for any shaking.



If vibration is detected, determine whether it originates from the steering column or the connecting plate, and perform the necessary maintenance.

If the steering column or its connecting plates exhibit wobbling, either increase the locking torque of the nuts or disassemble the column for inspection.

Position the vehicle horizontally and gently rotate the steering wheel left and right to verify smooth operation and consistent lateral movement. If any obstruction is detected, inspect the main cable assembly and all cables for interference, confirm the presence of interference, and check for damaged steering bearings.

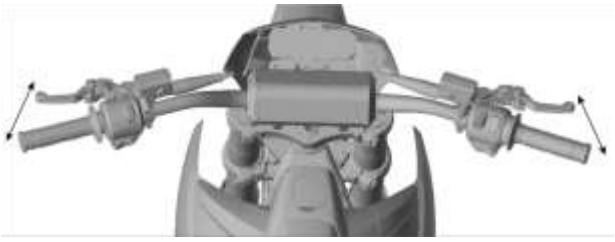


Note: Ensure the steering is responsive. Otherwise, the control handle may cause accidents due to loss of steering control.

Handle gap:

Support the vehicle with side supports, then gently squeeze the left and right brake levers to check their free travel. Inspect the front brake lever for damage or unusual noises.

Gap: 2~6mm



front brake pump assembly

(liquid volume)

Check the brake fluid level

These items must be checked before each use of the vehicle.

1. Keep the vehicle upright on flat ground and turn the steering wheel to neutral, ensuring the fuel gauge is level.

2 Check the brake fluid level before and after the vehicle is parked to cool down.

3. When the brake fluid level is in Area A, drain excess fluid to Area B.

4. The brake fluid level is in zone B: the level is appropriate.

The brake fluid level is at Zone C. Add the same amount of brake fluid to Zone B.

supplementary brake fluid

1. Remove the two bolts 1 on the top cover of the oil cup.

2. Remove the cover plate and oil cup pad.

3. Refill the brake fluid to area B.

4. Inspect the cover plate seal and tighten the oil cup cover bolt (torque: 4N, m).

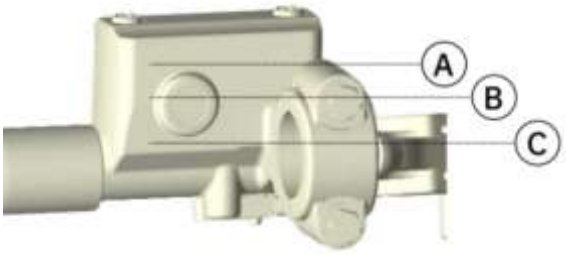
pay attention to

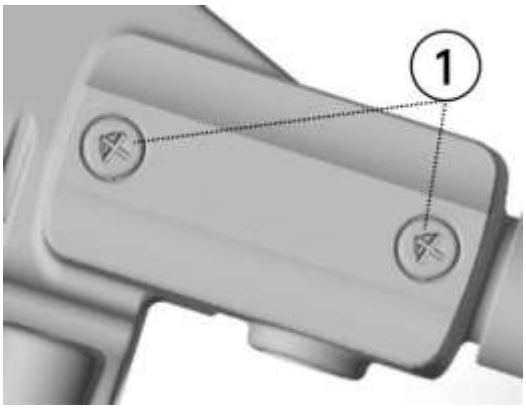
- When replenishing brake fluid, do not mix water and dust.
- To prevent chemical reactions, use the designated brand of brake fluid.
- Do not splash brake fluid on plastic or rubber surfaces, as it may damage them.

Note: The brake fluid cup should not be left open for extended periods.

Oil change (brake fluid replacement)

Replace the brake fluid annually.





Wear of the front brake disc and brake pads

Check the brake pad wear condition

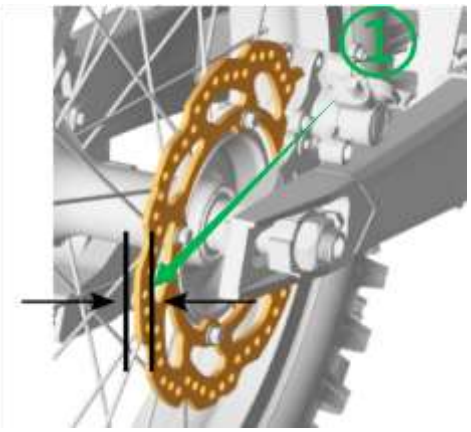
Replace the brake pads if wear reaches the wear limit.

pay attention to

The brake pads require a complete replacement.

Brake Disc Inspection and Replacement

Check if the sliding surface of brake disc 1 is worn or damaged. If the current thickness of the brake disc is ≤30.5mm, replace it.



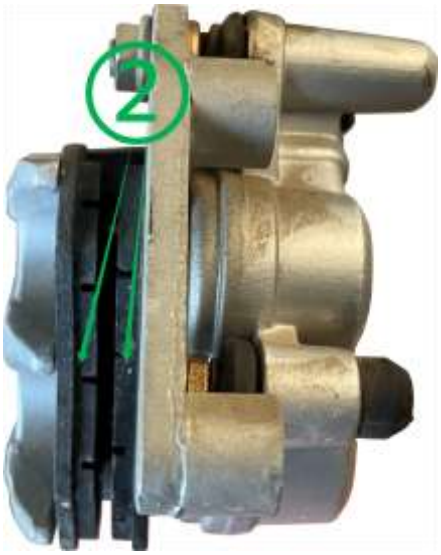
Maximum repair thickness of front brake disc: 3.5mm

Check the minimum thickness of brake friction pad 2

Minimum friction plate thickness ≥1mm

If the thickness is less than the minimum brake pad thickness, replace the brake pads with new ones.

Check the brake pads for damage or cracks. Replace them if any are found.



Note: Regularly check the brake fluid level to ensure it is at a safe level. Inspect the oil circuit and connection points for damage, and replace them promptly if found. Check the master pump and calipers for damage, and replace them promptly if found.

rear brake pump assembly

Maintenance of the front brake pump assembly

3.4 Wheels

Use the tool to level the front wheel and ensure the body is not under stress. Shake the front wheel from side to side to check if it is securely attached and not wobbling.

If vibration occurs, inspect and tighten the axle, rim bolts and nuts.

If there is still vibration, check and replace the bearing and other related tire parts.

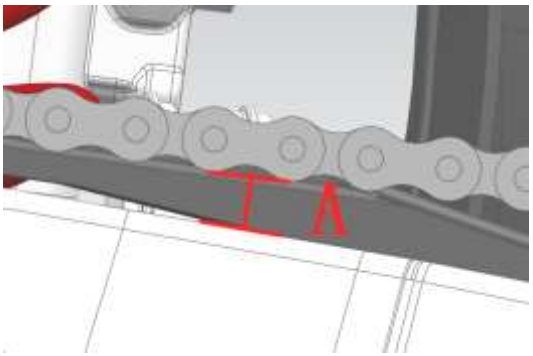
chain test

The chain transfers the motor's power to the wheels, enabling the motorcycle to operate normally. As a critical component, it requires regular inspection and maintenance to ensure proper functioning.

Chain tension can be adjusted as needed. The steps are as follows:

◆Repair the motorcycle to fully lift the rear wheel

◆Measure the distance between the rear end of the flat fork and the chain. The standard distance A should be within the range of 35-40 mm.



◆Loosen the rear axle nut

◆ Locate the point with maximum tension on the chain

◆Adjust the tensioner's front and rear positions to align both ends of the flat fork

◆ Tighten the tensioner nut

◆ Tighten the rear axle nut

◆Check the maximum tension point and readjust the tension if necessary

tire pressure

Check the tire pressure with a pressure gauge.

pay attention to

When checking tire pressure, the tires should be in a cooled state. If tires with improper pressure are used, it will result in reduced operational performance and ride comfort, and cause adverse effects such as uneven tire wear.

Specified air pressure/tire

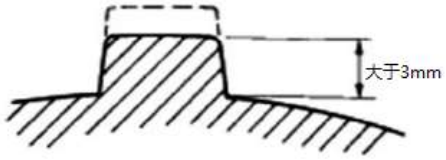
	front wheel	back wheel
pressure	View Chapter 1.4	View Chapter 1.4
Tire size	View Chapter 1	View Chapter 1

tire tread

Inspect the tread pattern. Replace the tire if the tread depth is less than 3mm.

pay attention to

When the tread pattern depth is less than 3mm, immediate replacement is required.



wheel nut and wheel axle
Check the front and rear wheel axles.
Wheel axle nut 1 is loose
Tighten to specified value
torque at looseness
twisting resistance

Front wheel axle nut: 80N·mm to 90N·mm

(8kgf·mm~9kgf·mm)

Rear wheel axle nut: 80N·mm to 90N·mm

(8kgf·mm~9kgf·mm)

Use a tool to lift the front wheel. When the wheel is no longer under load, shake it sideways to check for any wobbling, ensure the limit is functioning properly, or verify if there's any cable interference.

3.5 Suspension System

Position the vehicle horizontally and perform multiple compression tests vertically as shown in the diagram. If vibrations or unusual noises occur, inspect whether the shock absorber's rebound is normal, and check for oil leaks or loose fasteners.

3.6 Inspection and Adjustment of Shock Absorbers

Shock absorber inspection

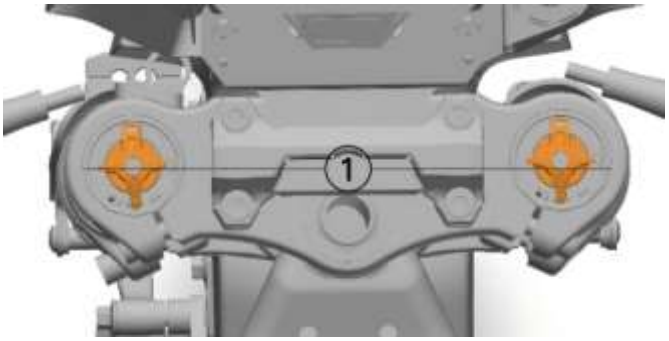
1. Grip the steering handle and give the front fork a few compressions to check its smooth operation.
2. Check for oil leakage (especially at the oil seal). A slight oil film is normal, but if oil drips, replace the oil seal or shock absorber immediately.
3. Check for scratches or abnormal friction noises at the working area of the front fork tube.
4. Inspect the front shock absorber fork tube for mud or sand residue after driving. If found, clean it promptly to prevent oil seal damage and shock absorber oil leakage.
5. Press the seat cushion a few times to check if the shock absorber operates smoothly.
6. Check for shock absorber oil leaks after inspection.

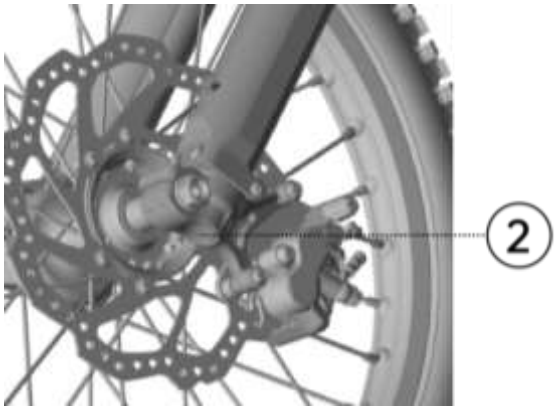
pre-damping rebound damping adjustment

1. Turn knob 1 manually: F for increased rebound speed, S for decreased rebound speed.
2. To increase the rebound speed, rotate the adjustment knob 1 counterclockwise.
3. To reduce the rebound speed, rotate the adjustment knob 1 clockwise.

pre-damping compression damping regulation

1. Use a single-head screwdriver to turn the adjustment screws 2 at the bottom of the left and right shock absorbers for compression damping adjustment. The H symbol increases compression damping, while the S symbol decreases it.
2. Turn the adjustment screw 2 counterclockwise to reduce compression damping.
3. To increase compression damping, rotate the adjustment screw 2 clockwise.



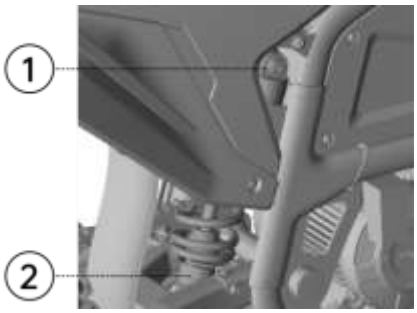


post damping compression damping adjustment

1. Adjust the knob manually: + for increased compression damping, -for decreased compression damping.

2. To increase compression damping, rotate the adjustment knob 1 clockwise.

3. To reduce compression damping, rotate the adjustment knob 1 counterclockwise.

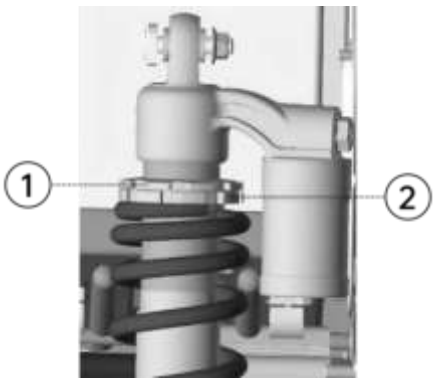


post damping rebound damping adjustment

1. Turn knob 2 manually: F for increased rebound speed, S for decreased rebound speed.

2. To reduce the rebound speed, rotate the adjustment knob 2 clockwise.

3. To increase the rebound speed, rotate the adjustment knob 2 counterclockwise.



post damping preload adjustment

1. Use an adjusting wrench to loosen the spring lock ring 1.

2. Rotate the adjustment ring 2 with the adjustment wrench.

3. To reduce the spring preload, rotate the adjustment ring 1 counterclockwise; to increase it, rotate 2 clockwise.

4. After adjustment, tighten the spring lock ring 1 with a wrench.

3.7 Brake Mechanism Inspection

brake lever

Check whether the oil pipe of the disc brake is aged or damaged.

When the oil pipe of the disc brake is aged or damaged, the oil pipe should be replaced.

Before starting the vehicle, check the brake lever to ensure proper braking performance and travel.

(Handle travel: 2-6mm)

Remove bolts 1 to replace the handle

The pre-adjustable brake lever can be adjusted via bolt 2 to accommodate different users' operating preferences, allowing precise control of the handbrake travel distance.

4. Around the vehicle

Maintenance information

pay attention to

• Before performing any maintenance work, ensure the vehicle is parked in a safe location and the power is disconnected.

• Before performing maintenance on the front wheels and suspension system, ensure the vehicle frame is securely supported.

Maintenance and inspection of lighting equipment, instruments, and switches shall be performed in accordance with the relevant sections.

Do not apply excessive force to the wheels. Be careful to avoid damaging them.

•When removing tires, always use dedicated tire and rim protectors to prevent wheel damage.

maintenance benchmark

commodity		standard	Quantity limit
wheel rim	axial jump	0.8 mm	2.0 mm
	radial runout	0.8 mm	2.0 mm
tired	residual groove	—	3 mm
	pressure	Front wheels: 1.6-1.8bar (23~26 psi) Rear wheels: 1.8-2.0bar (26-29 PSI)	—
front brake	actuating handle clearance	2-6mm	—

tightening torque

name	specifications	twisting resistance
Front brake caliper mounting bolt	Small hexagonal flange with M8×40 half-thread	21±4N.m
steering stem nut	Chromed M25×1×H18.6	35-40N·m
front disc brake disc mounting bolt	External hexagon opposite face M6×20	9±2N.m
front wheel axle mounting nut	Hexagonal flange surface locking nut M16×1.5×H14	80-90N·m
flat cross shaft mounting nut	Hexagonal flange self-locking nut M16×1.5×H14.8	90-100N·m
rear brake disc mounting bolt	External hexagon opposite face M6×20	10-12N·m
screw for rear sprocket	Hex head screw M8×30, grade 10.9	29-37N·m
rear wheel axle nut	Hexagonal self-locking nut M22×1.5	80-90N·m
rear brake pump mounting bolt	Hexagonal head with a semicircular top, M6×20	10-12N·m

tool

Hexagon m6	torque spanner
Ratchet wrench with open end S8	Pneumatic wrench S12
Ratchet wrench with open end, sizes S10-S12	Pneumatic wrench S14
s14 open end ratchet wrench	32# socket wrench
Phillips screwdriver	30# socket wrench
flathead screwdriver	21# socket wrench
hammer	probe forceps

4.1 Troubleshooting

1. Steering weight

1) Damage and wear of steering bearing

2) Damage or wear of the bearing inner and outer rings

3) Directional column deformation

4) Low tire pressure

5) Tire wear

2. Steering wheel shaking

1) The steering bearing is damaged and over-tightened

2) Left and right shock absorbers are mismatched

3) Degree of dispersion

4) Frame deformation

5) Tire wear and eccentric wear

6) Wheel bearing vibration

3. Front Wheel Roll Angle

1) Rim deformation

2) Defective wheel bearings

3) Poor tire quality

4) Improper wheel balance

5) Poor fastening around the wheel axle

4. Inflexible wheel rotation

1) Defective wheel bearings

2) Improper installation of front wheels

3) Brake oil hose and cable jammed

5. Front suspension soft

1) The elasticity of the front shock absorber has decreased.

2) Low tire pressure

6. The front suspension is too stiff.

1) The front shock absorber is damaged.

2) Overinflated tires

7. The front shock absorber produces abnormal noise

1) The front shock absorber is faulty.

2) Loose fasteners of the shock absorber

8. Poor braking performance

1) Poor brake adjustment

2) Contamination on the brake disc surface

3) Brake pad wear

4.2 Front wheels

dismantle

1. Use a tool to lift the front wheel and ensure it is not under pressure

2. Remove the front wheel axle 1

3. Remove the fixing nut installed on the front brake's lower pump

4. Remove the front disc brake 3

5. Remove the front wheel 4

Remove rear wheels

1. Use a tool to lift the rear wheel and ens ure it is not under pressure
2. Remove the rear axle 1 installed on the rear fork
3. Move the rear wheel slightly forward, th en remove chain 2
4. Remove the rear disc brake 3
5. Remove the rear wheel assembly 4

disassemble disc brake

1. Remove the fixing bolt 1
2. Remove brake disc 2

install

Install in reverse order of disassembly

Torque for wheel axle mounting nut:

80N•m~90N•m

Torque for brake disc mounting bolts:

25N•m~30N•m

check up

Brake disc thickness: Replace with a new d isc if the thickness is less than 30.5mm.

Dismantling of chain wheel

1. Remove the two sprocket lock plates 1
2. Remove the fixing bolt 2
3. Remove the sprocket plate 3

pay attention to

To remove the sprocket lock, first flatten th e protruding ends, then loosen the bolts, an d finally remove the lock.

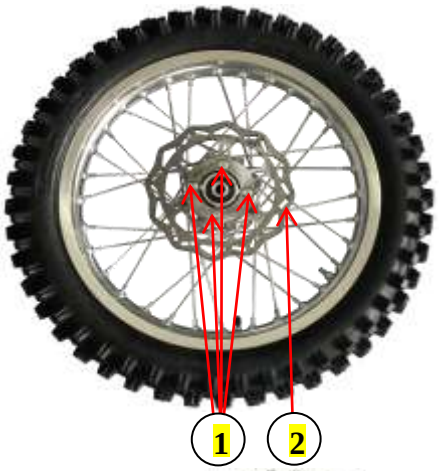
The installation bolts of disc brake discs an d sprocket discs are equipped with threaded fasteners, which are difficult to remove dur ing disassembly. A hairdryer can be used to heat the bolts before disassembly.

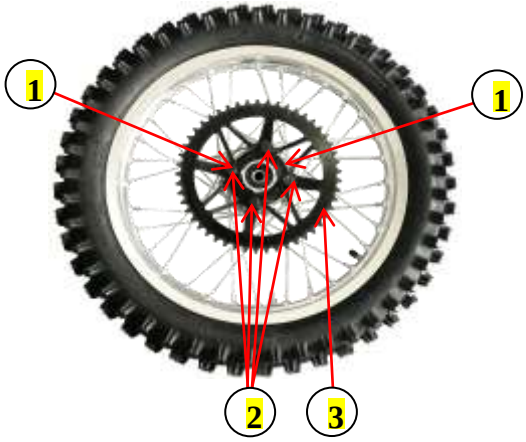
Check the wheel rim

Check whether Rim 1 has any damage, def ormation, or scratches. Replace if abnormali ties are detected. Slowly rotate the wheel a nd measure the runout of Rim 1 using a di al gauge. Limitations: Axial runout: 2.0mm Radial: 2.0mm

wheel rim mounting

Pressing the wheel rim 2 into the tire with a special machine





4.3 Braking System

Remove the brake caliper

1. Remove the two bolts 1 installed on the front shock absorber

2. Remove brake caliper 2

check up

Inspect the brake caliper for cracks and check all fastening points for oil leaks. Replace if necessary.

install

Torque for fixing bolt 2 of brake caliper: 10N • m to 12N • m (with surface thread fixative applied)

Change shoe blocks

1. Loosen fastening bolt 1

2. Remove shoe block 2

check up

Measure the thickness of the brake pad's friction layer 2. If the layer thickness is 1 mm or less, both brake pads must be replaced.

install

Install in reverse order of disassembly

dismantle the brake pump

1. Remove bolt 1

2. Disengage the pre-made hand brake pump 2 from the steering column, allowing removal without replacing the brake pump assembly.

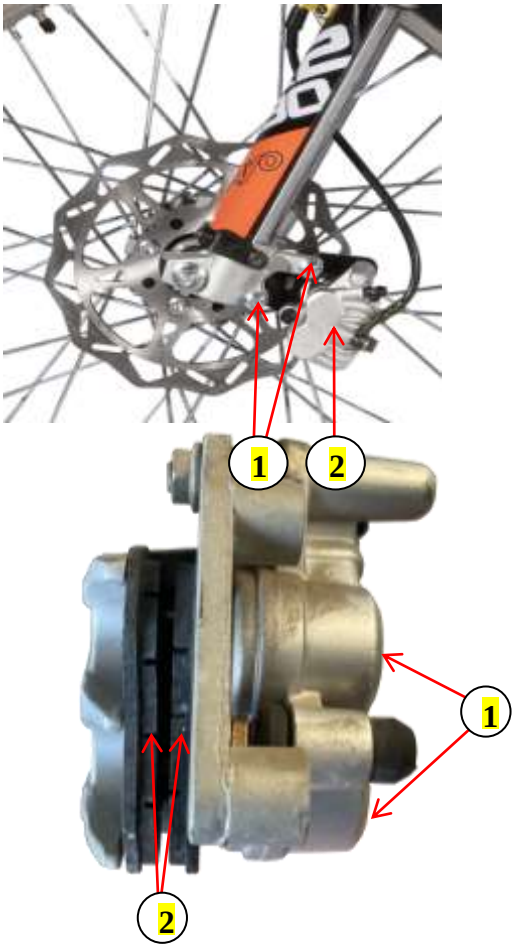
Change the handle

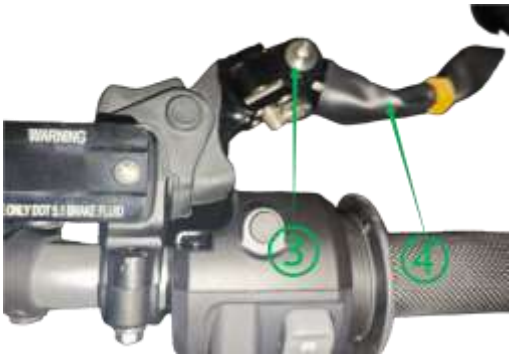
1. Remove the handle fixing bolt 3

2. Remove the brake lever 4

install

Install in reverse order of disassembly





The rear brake is disassembled and assembled according to the front brake.

4.4 Steering System

Remove steering handle assembly

1. Refer to Chapter 4.3 to remove the left and right brake oil pumps.

2. Remove bolt 1 that secures the right combination switch

3. Repeat the same steps to remove the bolt securing the left switch.

4. Remove the bolt 2 that secures the left handle

pay attention to

Do not remove the left handle cover unless necessary.

5. Remove the four bolts (3) that secure the upper pressure block

6. Remove steering handle 4

pay attention to

If you don't need to disassemble or replace the steering lever, first remove the front disc brake oil pump 1 and the bolt 3 that secures the upper pressure block, then unplug the other electrical components.

The main cable assembly, left and right switch cables, brake connectors, and cable joints shall be properly arranged as shown in Figure (→1.7).

install

Reverse disassembly of steering handle assembly according to disassembly sequence

After installing the handle, align the handle scale 2 with the groove 5 of the upper pressing block.

Dismantling of the connection board assembly

dismantle

1. Remove the front shock absorber (→4.5)
2. Remove the steering tie rod (→4.4)
3. Remove the large cover nut 1
4. Remove the upper connection plate 2
5. Remove the locking nut 3
6. Remove the lower connection plate assembly 4

install

Install in reverse order of disassembly

pay attention to

Do not lose gaskets, dust covers, or other accessories during disassembly.

The steering column is installed inside the lower connecting plate and should not be removed unless damaged.

Torque for the large nut: 35-40 N·m

Locking nut torque: 23-25 N·m

(Shrink to exit quarter turn)

4.5 Front Suspension System

disassembly of front suspension assembly

pay attention to

When servicing the suspension system, park the vehicle on a flat surface and securely support the front with a lift platform. During component removal, maintain vehicle balance to prevent accidents.

dismantle

1. Remove the front windshield (→2.4)
2. Remove the front fender (→2.8)
3. Disassemble the steering tie rod assembly (→4.4)
4. Remove the front wheel (→4.2)
5. Remove the front brake caliper (→4.3)
6. Remove the large cover nut 1
7. Remove the upper connecting plate 2
8. Remove the locking nut 3

After removing the shock absorber, seal the gaps at the fixing bolts of the upper and lower connection plates with wooden strips (as shown in the red circle in the right figure) to prevent over-tightening during subsequent assembly.

Remove the front suspension assembly 4

install

Install in reverse order of disassembly

pre-damper

dismantle

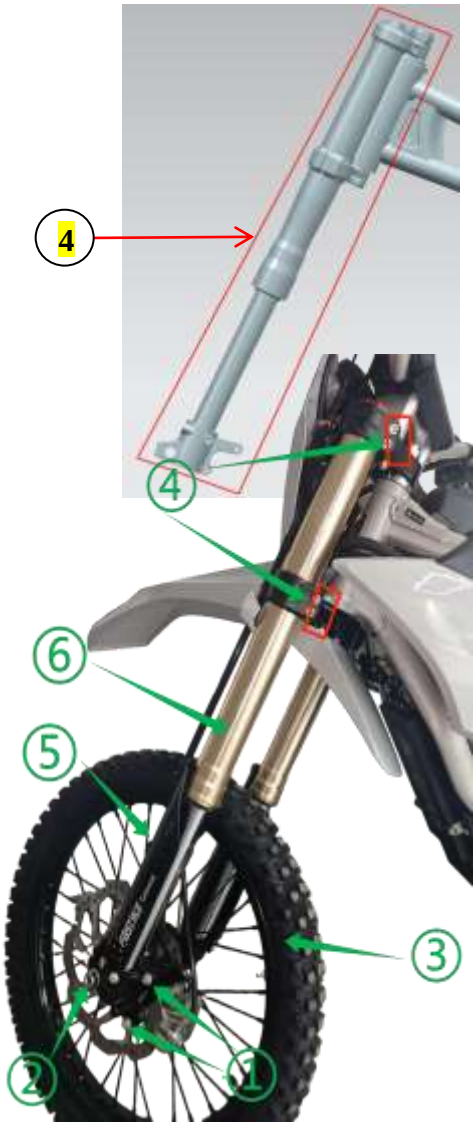
1. Remove bolt 1 from the lower pump of the front disc brake
2. Remove the front wheel axle 2
3. Remove the front wheel 3
4. Remove the four bolts from the upper and lower connecting plates
(4 on each side)
5. Remove the bolt 5 that secures the clip
6. Remove the front shock absorber 6

install

Install in reverse order of disassembly

pay attention to

The only difference between the left, right and front shock absorbers is the pipe clamp and disc brake, and the rest of the disassembly and assembly steps are identical.



4.6 Rear Suspension System

Dismantling of the rear auxiliary beam

1. Remove the seat cushion (→ 2.3 Covering of vehicle components)

2. Remove the left and right rear side panels (→2.6 Vehicle Parts Cover)

3. Remove the DCDC, storage compartment, tailgate, and rear fender (→ 2.7 Vehicle Parts Cover)

4. Remove the upper and lower fixing bolts 1 from the rear auxiliary beam

(Two on each side)

5. Remove the rear auxiliary beam assembly 2

install

Install in reverse order of disassembly

pay attention to

For details on replacing the plastic parts of the rear additional beam, refer to Chapter 2.

removing rear shock absorber

When repairing the suspension system, the vehicle frame must be lifted first, then the rear suspension system can be disassembled. Otherwise, the frame will collapse due to lack of support.

Park the vehicle on a flat surface and stabilize it with a jack.

Remove the seat backrest, left rear guard plate, right rear guard plate and rear connecting beam assembly.

Remove the installation bolt 1.

Remove shock absorber mounting bolt 1

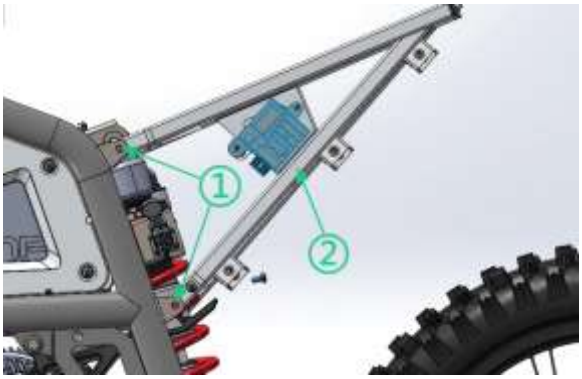
Remove shock absorber 2

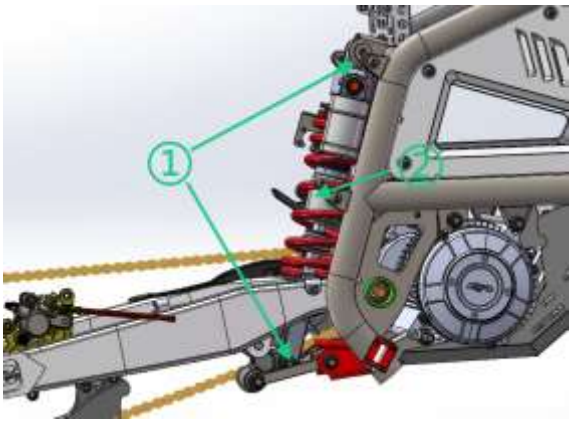
check up

Inspect the removed shock absorber and adjust the exhaust screw to the appropriate tightness.

install

Install in reverse order of disassembly





3. Remove chain 2.
4. Remove the rear disc brakes and rear wheels 3
5. Remove bolt 4 connecting the rear shock

absorber to the rear flat fork
6. Remove bolt 5 connecting the rear horizontal fork to the frame
7. Remove the rear horizontal fork 6.

install

Install in reverse order of disassembly

pay attention to

Dismantling of rear horizontal fork

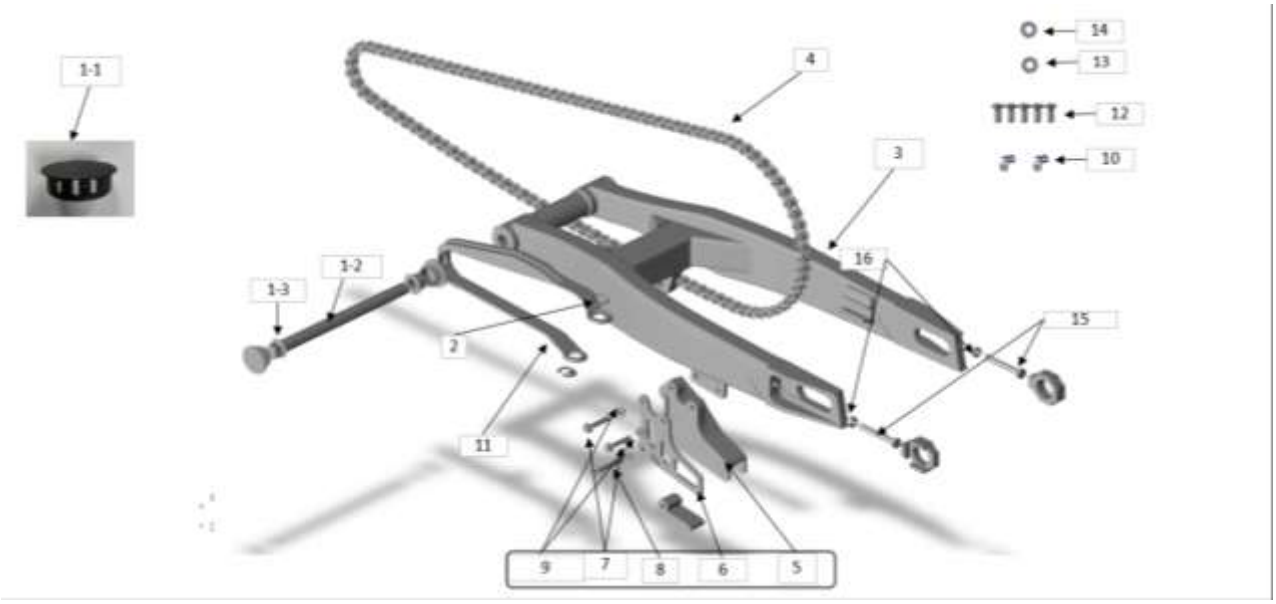
When repairing the fork, the frame must be left suspended first; otherwise, it will collapse due to lack of support.

1. Park the vehicle on a flat surface and secure the rear support with a jack.
2. Remove rear axle 1, which connects the tire to the rear fork.

The torque requirement for the rear flat fork is 80-90 N·m.

The rear wheel axle extends from right to left.

The assembly schematic diagram of the rear fork assembly is shown below



NO	name	quantity	NO	name	quantity
1	Material Name	2	8	Hexagon flange bolt_M6*40	1
1-2	Flat fork plug	1	9	2-type all-metal hexagonal flange face locking nut_M6*1	2
1-3	Flange shaft	1	10	Rear disc brake hose clamp	2
2	Hexagonal flange locking nut_M16*1.5	2	11	Guide chain sleeve	1
3	Cup-type gasket_Ø23*29*24	1	12	Internal hexagonal serrated head bolt_M6*14	5
4	Rear flat fork (T4)	1	13	Flat washer_Ø7*Ø16*0.8	1
5	Chain	1	14	Flat washer_Φ6*18*1.5	2
6	Chain guard	1	15	Hexagonal head bolt_M10*1.25*40	2
7	Chain guard trim plate	2	16	Hex Flange Bearing Face Serrated Nut_M10*1.25	2

Inspection after removing the rear fork

- Check if the chain is damaged. Replace it if damaged.

- Check whether the rear axle is bent or damaged. If bent or damaged, replace it with a new one.
- Inspect the aluminum flat fork. Replace with a new one if damaged.
- Inspect the chain guide sleeve. If the chain guide sleeve is damaged, replace it with a new one.
- Check other components for damage. Replace with new ones if damaged.

install

When using the fork decomposition, execute in reverse order

Note: When installing the bushing, apply Mobil XHP222 grease to both ends of the fork shaft.

5 Signal System

maintenance instruction

During inspection operations, the vehicle may be powered on; for disassembly and assembly operations, the vehicle must first be de-energized, and hands should be kept dry.

Do not attempt to fix electric motorcycle faults yourself, as this may cause safety hazards or accidents. If you do so and an accident occurs, you will be held fully responsible.

5.1 Removal of Electric Door Lock

1. Remove the front windshield (→2.4)

2. Remove the power lock connector 1 (→ 1.7)

3. As shown in the figure, locate the latch on both sides of the door lock.

4. Press firmly and pull the lock upward from the bottom.

5 Remove the power lock 2

install

Follow the reverse order of disassembly

pay attention to

1. The power lock connector 1 is located

on the front exterior of the vehicle. Covered

with a black rubber sleeve. Please ensure

It is removed and reinstalled properly.

Reduction to prevent dust contamination.

2. The power locks for the front and seat

areas are included in the package.

Replace the entire set

Remove the seat cushion lock

1. Remove the seat cushion.

1. Remove cover plate 1

2. Remove bolt 2 that secures the locking mechanism

3. Remove the lock

install

Follow the reverse order of disassembly

5.2 Dismantling of MUC

1. Remove the seat cushion (→2.3)

2. Turn the battery lock 1 upward.
3. Remove battery plug 2
4. Hold the battery handle to remove the battery 3
5. Remove the fixing screw 4 on the MCU cover plate
6. Remove bolt 5 that secures the motor connector to the MCU
7. Remove bolt 6 that secures the battery secondary line connector on the MCU
8. Unplug the electrical connector of the motor 7

9. Open the front windshield (→2.4)

10. Remove Controller A, Controller C, and Controller D
Electrical plug. (Refer to 1.7 Circuit Diagram)
11. Remove bolt 8 that secures the MCU

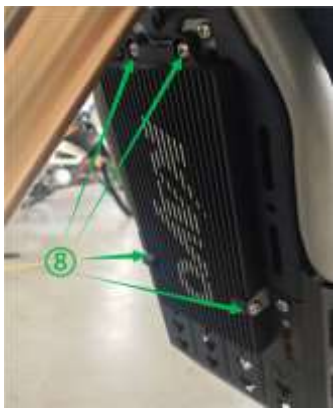
install

Follow the reverse order of disassembly

pay attention to

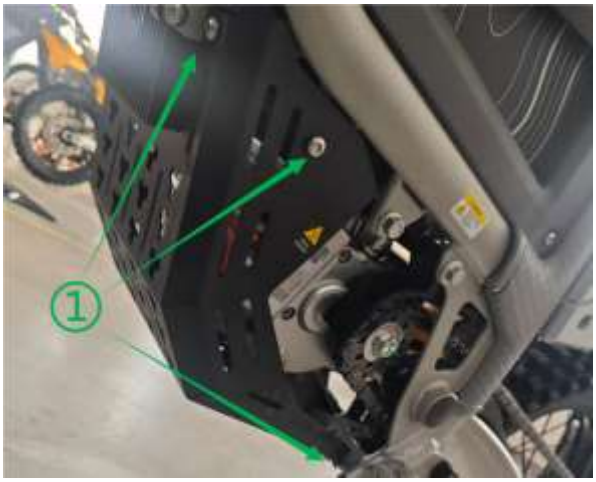
1. The plug of the A.C.D controller is located at the front of the vehicle, externally. Covered with a black rubber sleeve. After disassembly and assembly, ensure it is fully reset. To prevent dust contamination,2 Install the motor and battery wiring connectors on the MCUThe motor signal plug must be connected correctly as shown in

Figure (→1.7) install .



2. Check for MUC malfunction. After replacement,
3. the electric motorcycle requires Relearn from Chapter 5.4.

5.3 Disassembly of the Motor



1. Remove the chain (→4.6)

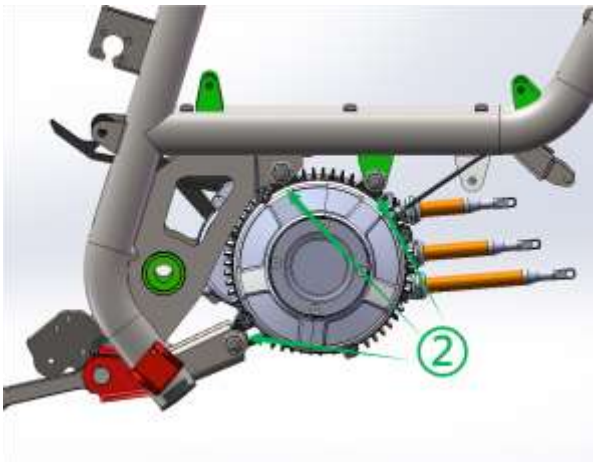
2. Remove bolt 1 that secures the motor cover
(On the other side, 3 pieces)

3. Remove the motor wiring and connectors (→5.2)

4. Remove bolt 2 that secures the motor

pay attention to

1. The motor's fixing screws contain
2. thread adhesive, requiring removal. Appropriate heating may be applied during installation, and a coating is required. Red thread glue.
2. Inspect the motor for faults. After replacement, the electric motorcycle requires relearning, as specified in Chapter 5.4.

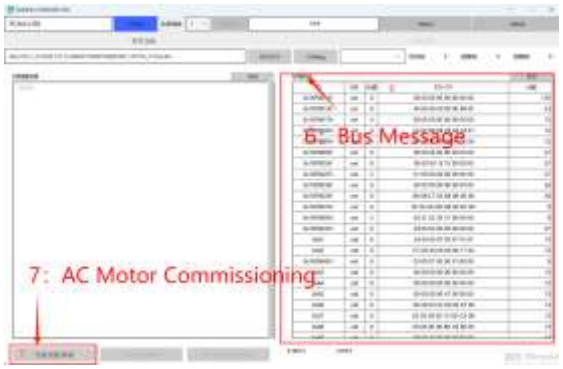


Install

Follow the reverse order of disassembly

5.4Vehicle Self-learning tutorial

1. Start the vehicle.
2. Keep the rear wheels of the vehicle suspended and stable.
3. Open the left charging port cover 1
4. Start the computer and open the software (manufacturer provided).
5. Connect the USB port 2 of the communication cable to the computer.
The charging terminal 3 is connected to the vehicle's charging port.
Wiring harness (provided by the manufacturer).
6. Run the software step by step.

6.1 Click "Disconnected" to proceed to the next screen. 	6.2 As shown in the diagram, press '2' to select '3' (500000 baud rate), press '4' to display blue, then press '5' to return. 
6.3 Step 6: The system will automatically refresh the message in the '6' section, indicating the connection is established. Then click the '7' AC motor debugging button. 	6.4 During the self-learning procedure, the electric motor will drive the rear wheels to perform slow forward and reverse rotations, conducting a test from zero acceleration to maximum speed and then deceleration back to zero. The vehicle may experience swaying during this process. For safety, ensure the vehicle remains stable and securely fastened throughout, the burner is properly connected, and personnel safety is maintained.
6.5 Follow steps 8, 9, and 10 in the diagram: After clicking [Angle Self-Learning], click [Settings] and [Start] in sequence. The button will turn blue after successful startup.