



- Never ride through deep water, as this may damage the electrical control system and could even result in personal injury.
- Do not disassemble the battery under any circumstances, as this may cause damage or create dangerous conditions.
- Always wear a safety-certified helmet while riding and follow all traffic regulations.
- Remove the battery before washing the bike, and never use a high-pressure water gun on the battery or any electrical components.
- If the bike will not be used for more than one month, disconnect the power plug and store the battery at a full charge.

**Disclaimer:**

All information, illustrations, and specifications contained in this manual are based on the latest data available at the time of publication. This electric off-road bike is subject to continuous improvement. Therefore, information, images, and specifications used to describe or illustrate product, service, or maintenance enhancements may be changed at any time without prior notice.

**California Proposition 65 Warning**

WARNING: Operating, servicing, and maintaining a passenger dirt bike (All-Terrain Bike) or off-highway motor dirt bike (All-Terrain Bike) can expose you to chemicals, including engine exhaust, carbon monoxide, phosphates, and lead, which are known to the State of California to cause cancer

and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust gases, do not idle the engine except as necessary, service your dirt bike (All-Terrain Bike) in a well-ventilated area and wear gloves or wash your hands frequently when servicing your dirt bike

(All-Terrain Bike). For more information, go to [www.P65Warnings.ca.gov/passenger-dirtbike](http://www.P65Warnings.ca.gov/passenger-dirtbike)

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# 1 、 Safety Instruction

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- Operate the bike only in areas permitted by local regulations.
- You are responsible for understanding and complying with all applicable laws in your region.
- Individuals prohibited by local laws from operating a motor vehicle must **not** ride this electric dirt bike.
- Before riding, thoroughly familiarize yourself with the contents of this manual and practice in a spacious, safe area until you fully understand how to operate the bike.
- Always wear a certified helmet and protective gear while riding.
- Whenever possible, park and charge the bike in open areas, and keep all charging activities away from flammable or explosive materials.
- Wear bright-colored clothing while riding and avoid sandals or high heels, as improper footwear may affect safe operation.
- The bike contains many electrical components. Avoid prolonged exposure to rain to prevent water ingress.
- When washing the bike: turn off the power, remove the battery, and pay attention to water pressure and spray angle. **Never** use a high-pressure water gun directly on the battery or any electrical components.
- Do not immerse the battery in water. If the battery becomes wet, do **not** charge the bike or battery again, as this may lead to fire, burning, or explosion.
- Braking distance will increase when riding in rain, snow, or on flooded roads. Water depth exceeding 20 cm may affect brake performance.
- Operating temperature:  $-10^{\circ}\text{C}$  to  $45^{\circ}\text{C}$ . Battery storage temperature:  $0^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  (recommended  $10^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ ). Do not store or ride the bike outside these temperature ranges.
- For your safety, do not modify the electric dirt bike. If parts need replacement, please contact after-sales service.
- The bike uses high-voltage circuits. **Never plug or unplug any connectors while powered**, as this may cause injury or property damage.

(Power-on sequence: open circuit breaker → turn on the dash → turn on the one-touch kill switch.

Power-off sequence: turn off the one-touch kill switch → turn off the dash → close the circuit

breaker.)

## Riding Restrictions:

- **Individuals under the influence of alcohol or drugs must not operate the bike.**
- **Individuals exceeding the maximum load capacity of 50 kg are prohibited from riding the bike.**

## Pre-Riding Inspection

- Tire pressure should be 26–28 psi (180–195 KPa) for the front tire and 35 psi (240 KPa) for the rear tire, with normal tread condition and no embedded foreign objects such as nails, rocks, or glass.
- Ensure the handlebar and both front and rear wheels are securely fastened with no looseness.
- Check the power circuit, lighting system, and other electrical components to ensure proper function, and confirm that the battery level is sufficient for riding.
- Spoke tension should be consistent across the wheel. Tighten any loose spokes immediately.
- The throttle should rotate smoothly without sticking and should return quickly to its neutral position.
- Chain: if the chain feels stuck, clean off dirt or debris and apply chain lubricant. Under normal conditions, the vertical movement of the chain should be 15–20 mm from its lowest to highest point.
- Ensure the moving parts of the front and rear shock absorbers are clean and free of dirt.
- Confirm that both front and rear brakes operate normally and that all brake components are undamaged.

## Instructions for Use

- Do not use mobile phones, cameras, headphones, or earplugs while riding, as these behaviors may affect safe operation.
- Slow down and proceed cautiously when approaching or passing intersections, motor vehicle lanes, turns, doorways, or other areas with potential hazards, and yield to pedestrians and vehicles.
- If any abnormal condition occurs while riding, stop immediately and identify the cause of the warning or malfunction. Resume riding only after the issue is resolved. Contact after-sales service for assistance when needed.
- Park the bike on a flat and solid surface. After parking, turn off the power promptly to prevent accidental activation that could cause injury to you or others.
- Always use the dedicated lithium battery charger designed for this bike. Input AC voltage: 110–250V. Before charging, ensure the charging port and charger are free from moisture or water

ingress. During charging, keep away from flammable, explosive, high-temperature, or dusty environments. Disconnect the power promptly once charging is complete.

- Do not charge the lithium battery below 0°C, as doing so may damage the battery. Wait until the battery temperature rises before charging.
- Battery maintenance: If the bike has not been used within 60 days of receipt, charge the battery to 70%–80% as soon as possible to prevent undervoltage protection caused by natural discharge, which may lead to battery damage and financial loss.

**WARNING — Fire Hazard — No User-Serviceable Parts.**

Prolonged exposure to ultraviolet light, rain, or other environmental factors may damage the housing materials. When not in use, store the bike indoors.



**WARNING**

Do not operate this product in traffic or in any other potentially hazardous environment until you are fully familiar with its operation. Failure to do so may result in death or serious injury.



**WARNING**

Whenever possible, avoid riding in wet weather. If riding in wet conditions is unavoidable, reduce your speed as needed. Wet weather can impair the visibility, braking performance, and traction of



**WARNING**

Never disassemble or modify any electronic components of the dirt bike. Doing so is extremely dangerous and may result in death, serious injury, or voiding of the warranty.



indicates a hazardous situation which, if not avoided, could result in death or serious injury.

the electric dirt bike, and may also affect other road users.

**NOTICE**

Ensure that the kickstand is in the open position. Press the one-touch power-off switch and close the magnetic safety switch to deactivate the P-gear parking function.

- Always wear a full-face off-road helmet and appropriate off-road protective gear.

Understand the limits of the electric dirt bike and the stresses it can withstand. If the bike is damaged, do not ride it. Most importantly, ride within the limits of your own skills and experience.

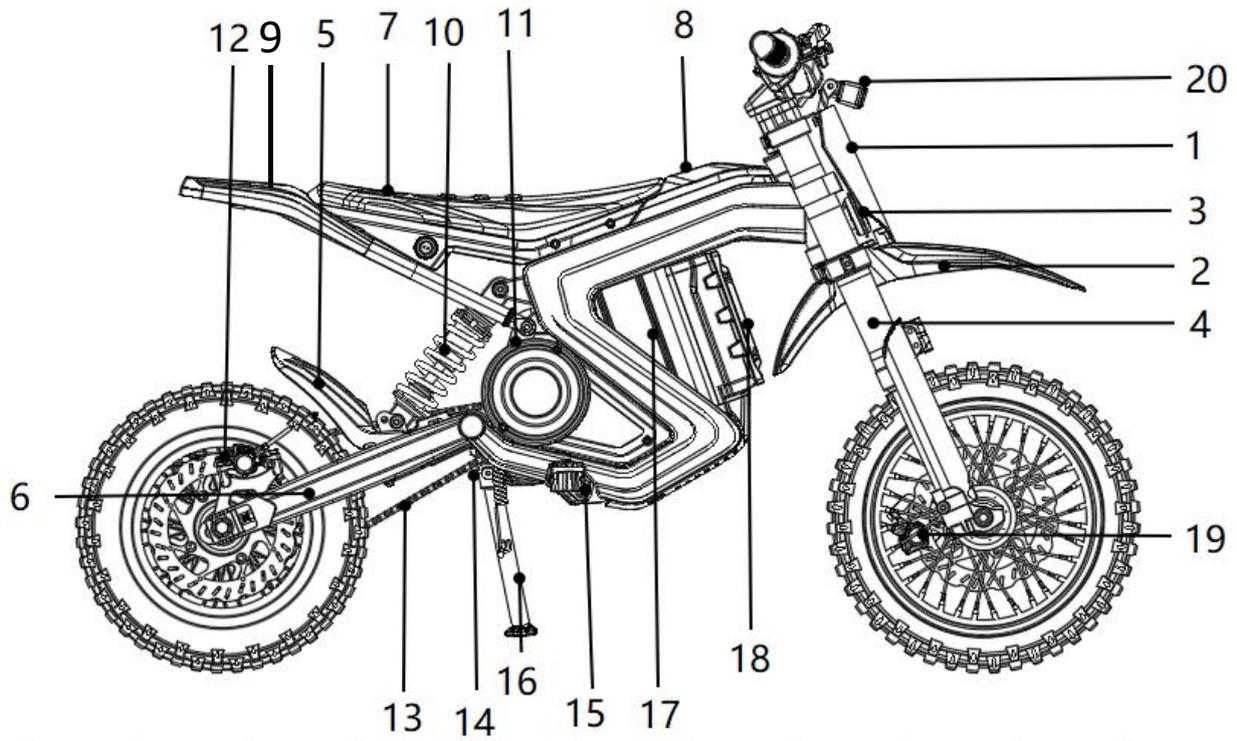
- Your safety is of utmost importance. Before riding the electric dirt bike, always inspect the vehicle to ensure proper tire inflation, normal brake operation, and that the handlebars are correctly adjusted and securely fastened.

- Do not wear headphones, and do not carry anything that may obstruct your vision or interfere with your ability to control the electric dirt bike.

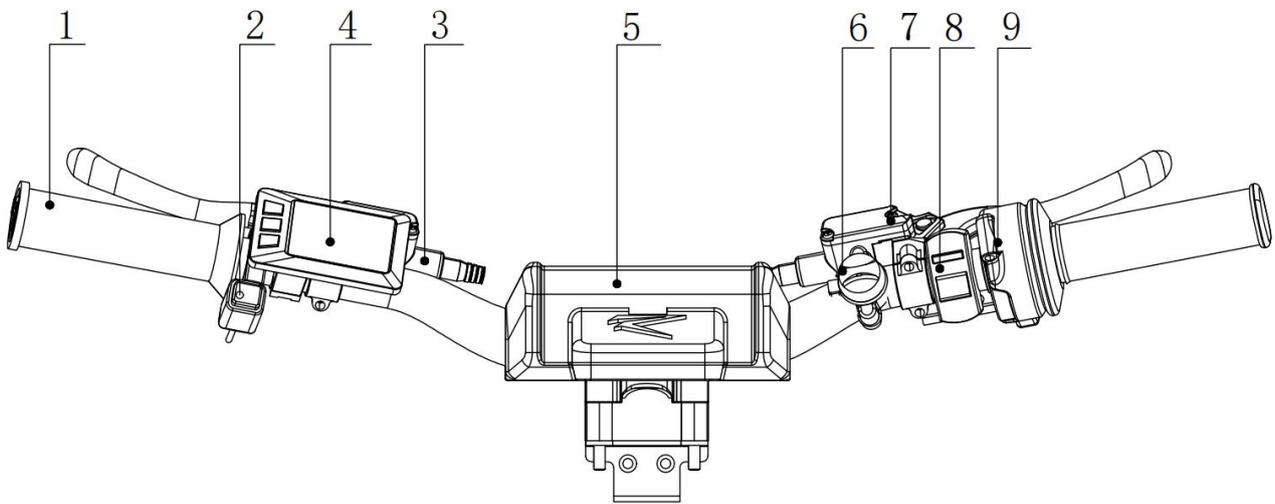
- Always understand and comply with all local laws and regulations, and ensure that maintenance or repairs on the electric dirt bike are performed by an authorized dealer.

- When parking the bike while remaining seated, be sure to turn off the one-touch power-off switch, deploy the kickstand, and engage the P-gear parking function to prevent accidental contact with the throttle.

## 2 、 Functional Diagram



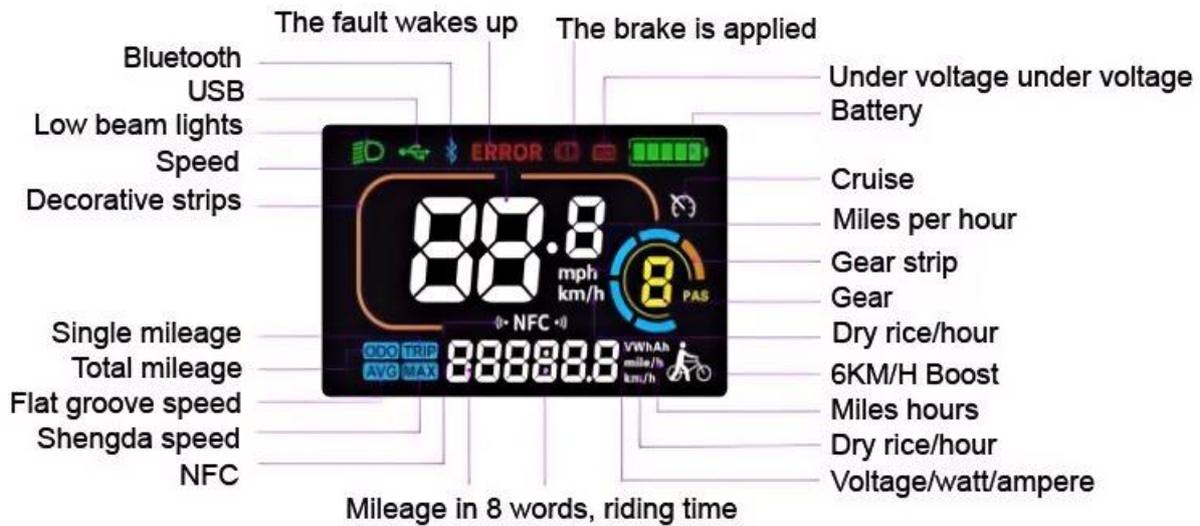
1-Number Plate	2-Front Fender	3-Horn	4-Front Shock	5-Rear Mudguard	6-Rear Fork
7-Seat	8-Charging Portal	9-Rear Fender	10-Rear Shock	11-Motor	12-Rear Caliper
13-Chain	14-Kickstand Sensor	15-Foot Peg	16-Kickstand	17-Battery	18-Controller
19-Front Caliper	20-Headlight (Optional)				



1-Grips 2-Horn Switch 3-Left Lever (Rear Brake) 4-Dash 5-Chest Protector (Optional)

6-Magnetic Switch 7-Right Lever (Front Brake) 8-One-touch engine shut-off switch 9-Throttle

Left Switches				
	Horn Switch	Dash-Up Shift/Lights (Reserved)	Dash-Dash Switch (Press and Hold) /Function Switch (Press)	Dash-Down Shift/Power Assist(Reserved)
Right Switches				
	Magnetic Switch	One-Touch Shutdown Switch (Motor Off, System Remains Operational)	One-Touch Shutdown Switch (Both Motor and Systems Remain Operational)	



#### Function Key Definitions and Operation Overview:

Press **+/** or **-/** to shift up or down; Press **/M** to switch the data shown in the multifunction display area. (A single long press is used for mode or switch operations, while a combined long press is used for parameter settings.)

Press and hold **/M** for 3 seconds to turn on/off dash.

Press and hold **+/** and **-/** to enter parameter setting interface. Within the setting interface, press **/M** to enter setting interface menu item; Press **+/**, **-/** to modify the parameter values under the current menu item, and the selected value will blink to indicate it is being edited; Press **/M** to save the current menu setting and proceed to the next menu item; Press and hold **+/** and **-/** to leave setting, If the dash is not operated for over 10 seconds, it will exit the setting menu item.

## Recommended Torque for Installing Critical Components

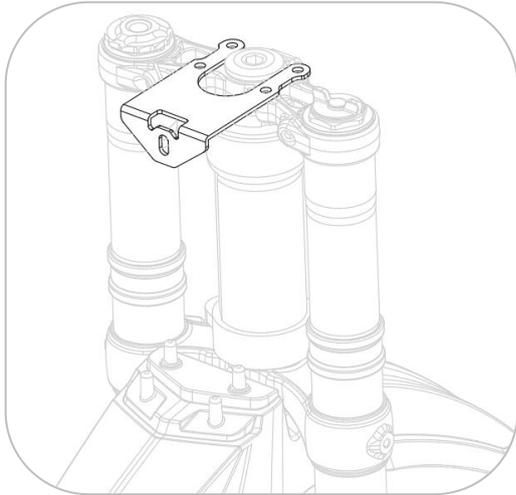
No	Location	Torque
1	Front wheel axle tightening	40-45N.m
2	Function switch tightening	4-5N.m
3	Rear wheel sprocket tightening	18-22N.m
4	Front and rear disc brake rotors tightening	18-22N.m
5	Front and rear calipers tightening	12-15N.m
6	Chain guide fastening	12-15N.m
7	Chain slider fastening	3-5N.m
8	Pedal bracket fastening	18-24N.m
9	Motor mounting	22-28N.m
10	Rear fork fastening	30-35N.m
11	Rear shock absorber fastening	22-28N.m
12	Rear swingarm fastening	15-20N.m
13	Rear wheel axle fastening	55-60N.m
14	Handlebar fastening	7-9N.m
15	Steering column adjustment nut	3-5N.m
16	Steering column lock bolt	20-25N.m

## 3 、 Quick Installation Guide

**Do not assemble, disassemble, or package electric off-road motorcycles by yourself. Teamwork is required.**

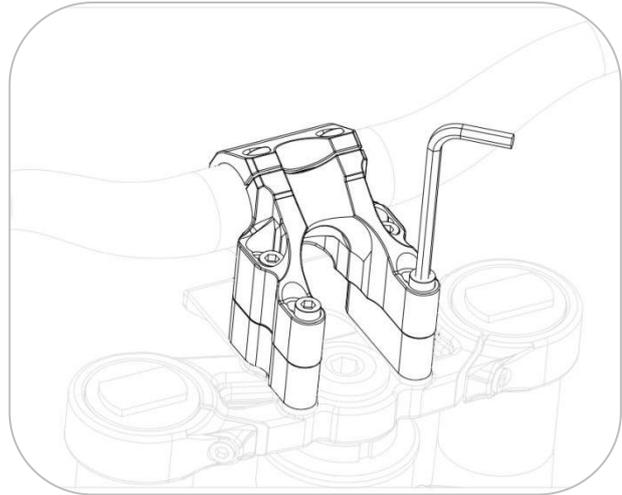
### Handlebar Installation:

1. Position the headlight bracket onto the upper triple clamp, aligning it with the four mounting holes.



2. Place the handlebar onto the headlight bracket, align it with the mounting holes, and tighten the four bolts using a 5 mm hex wrench.

**Note: Ensure all four bolts are installed with spring washers.  
Recommended tightening torque: 7–9 N·m.**

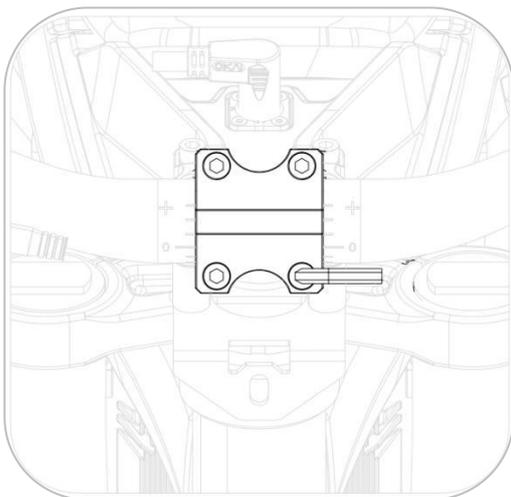


### Handlebar Adjustment:

1. Loosen the four bolts using a 5 mm hex wrench to adjust the handlebar angle.

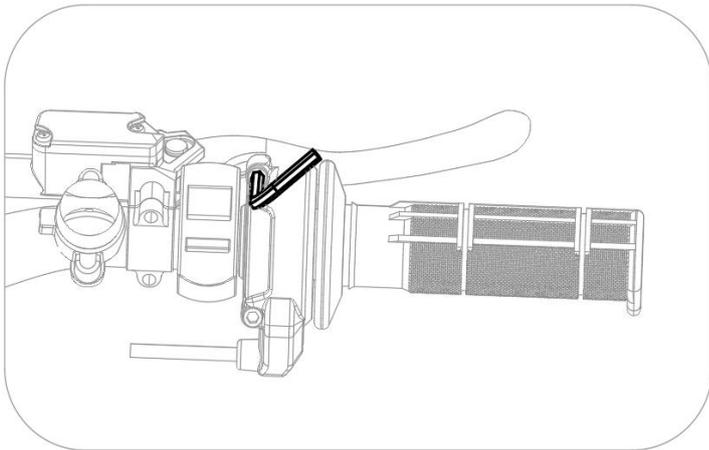
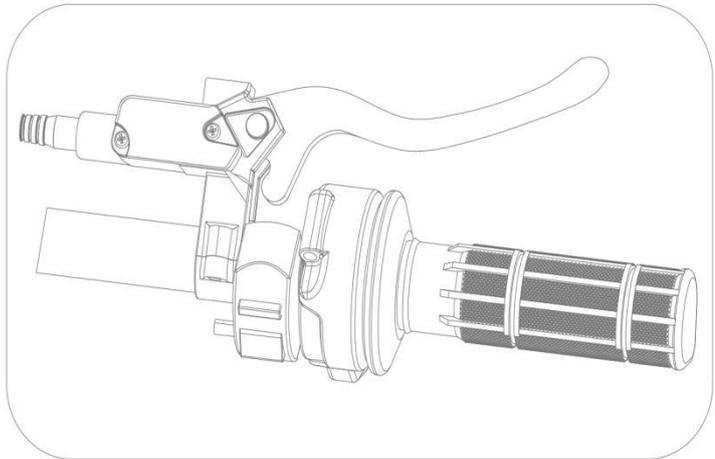
**Note: Do not lose the spring washers on the bolts.**

**Recommended tightening torque: 7–9 N·m.**



## Install Left and Right Brake Levers and Handles:

1、 As shown, adjust the right brake lever and throttle to a suitable angle.

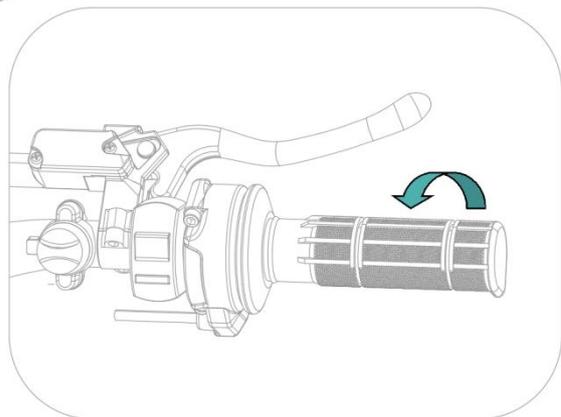


2、 Tighten the throttle and right brake lever using a 4 mm hex wrench. **Recommended tightening torque: 4–5 N·m.**

3、 Rotate the throttle fully inward, then release it to allow it to return naturally.

**Note: The throttle must be adjusted with the power turned off.**

The throttle should accelerate when rotated inward and return smoothly. If any sticking occurs, inspect the throttle and readjust it following the throttle adjustment procedure.

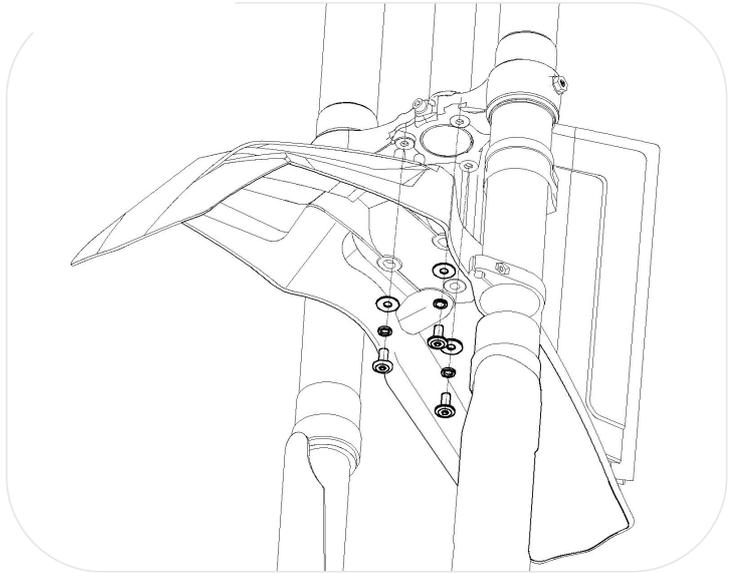


**Note: The installation of the left brake lever and horn switch follows the same steps as above.**

## Front Fender Installation

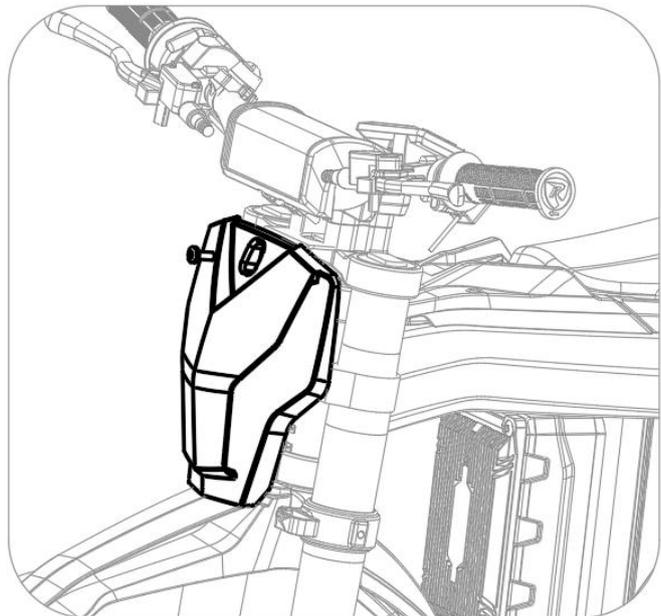
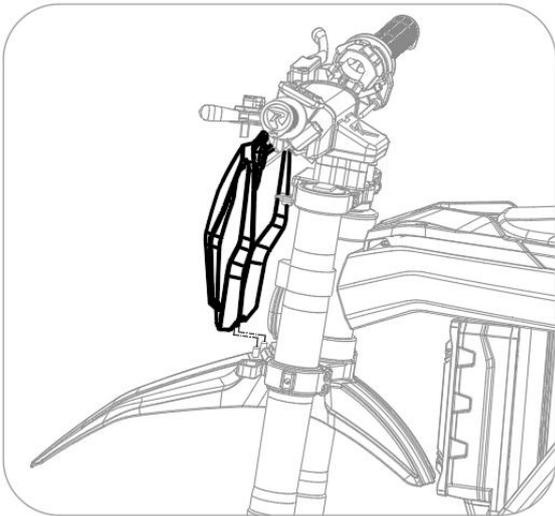
Use a 5 mm hex wrench to secure the front fender to the lower triple clamp using three screws with flat washers and spring washers.

**Note: Recommended tightening torque for the front fender: 3 N·m.**



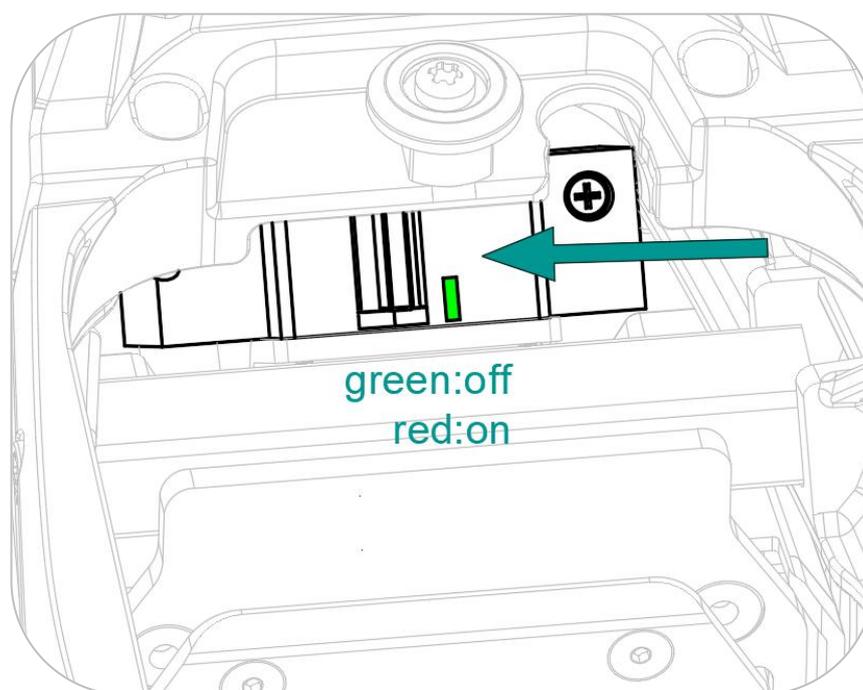
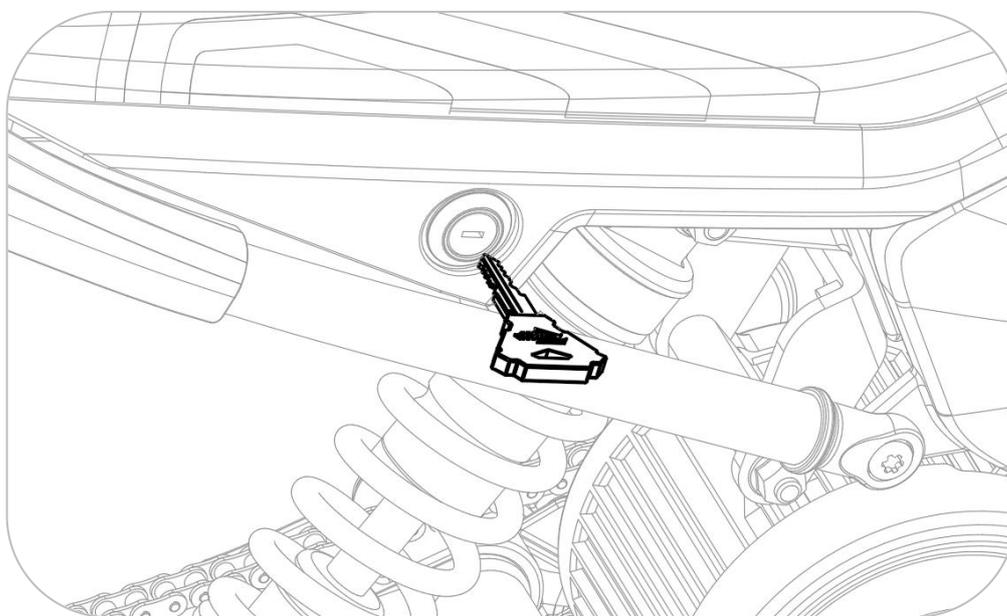
## Number Plate Installation

Install the chest protector onto the handlebar (the chest guard is an optional accessory), and mount the number plate onto the headlight bracket using M6×14 bolts and M6 clip-on nuts.

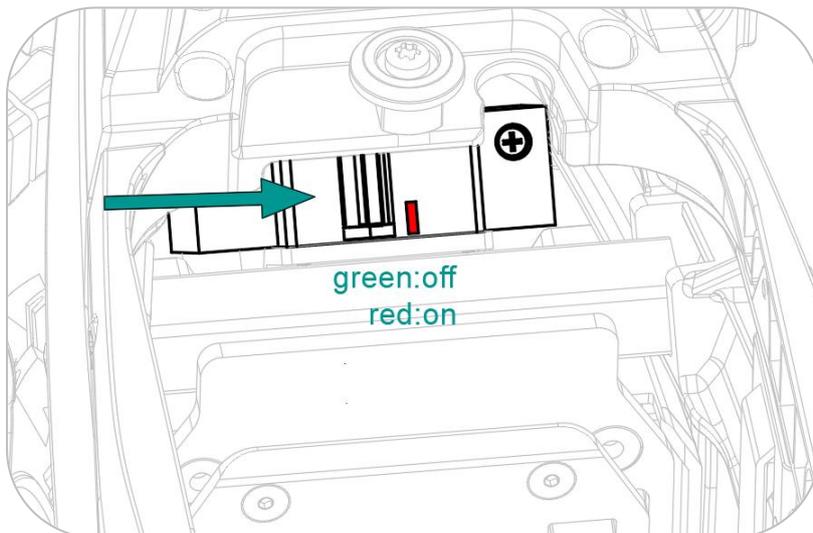
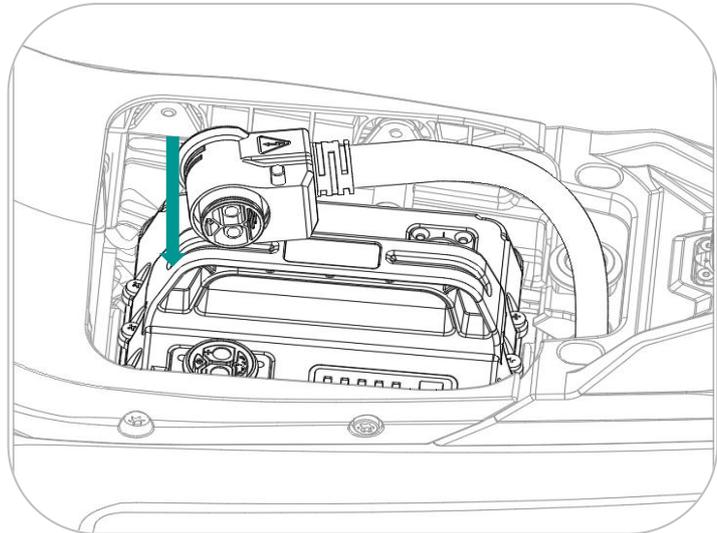
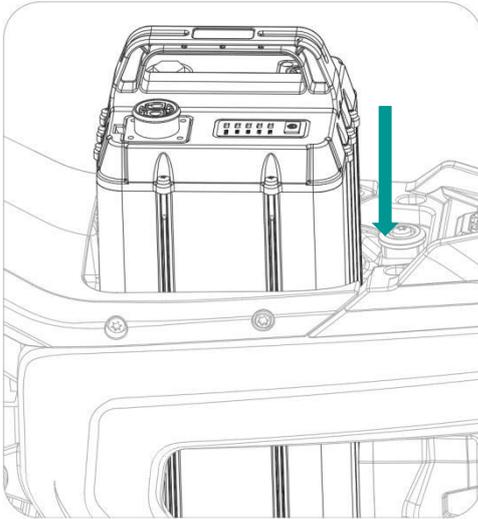


## Battery Installation

- 1、 Insert the key into the seat lock on the right side of the seat, unlock it, then lift the rear of the seat upward and backward to remove it. Before inspecting the battery, ensure that the power cutoff switch is in the OFF position.



2、 Position the battery with the discharge port facing the right side of the frame and place it into the battery compartment, ensuring it is fully seated. Connect the discharge plug, switch the power cutoff to the ON position, close the seat, and remove the key.



## 4 、 Preparation for Riding

Ensure that you have carefully reviewed all pre-ride inspection items listed in Chapter P03 (Safety Instructions) of this manual, with particular attention to the following:

### Check the Front and Rear Tires:

1. Confirm that the tires are in good condition with no abnormalities.
2. The recommended tire pressure is 180–200 KPa for the front tire and 210–230 KPa for the rear tire. Insufficient tire pressure may cause abnormal wear, poor steering response, reduced speed, and shorter riding range. Excessive tire pressure may lead to localized abnormal tread wear, reduced traction, decreased riding comfort, and may even result in tire blowout, creating significant safety risks.

### Check the Dash, Horn, and Front/Rear Brakes:

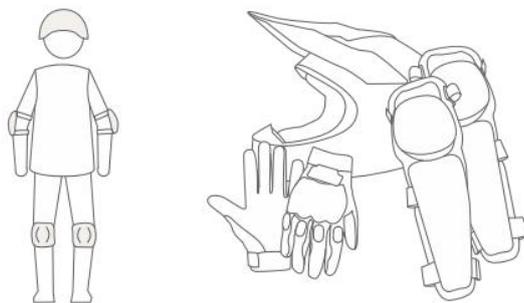
1. Ensure all display functions on the instrument panel operate normally.
2. Check that the horn is functioning properly.
3. Squeeze both the left and right brake levers to confirm that the front and rear brakes operate normally and that the brake power-cutoff function works correctly.

### Check the Handlebar:

Ensure the handlebar is properly tightened with no looseness, and that steering is smooth, without interference or abnormal noise.

### Shock Adjustment:

Adjust the front and rear shocks based on actual riding needs to match personal riding preferences.



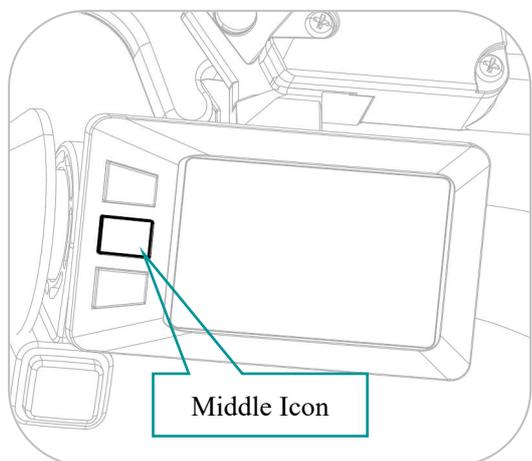
Always wear a helmet and protective gear. For your safety, choose a full-face off-road helmet and off-road protective equipment. The images shown are for reference only—please take all necessary safety precautions.

Do not allow anyone who is unfamiliar with or unable to operate the electric dirt bike to ride it. Riding with one hand, performing stunts, or riding under the influence of alcohol is extremely dangerous.

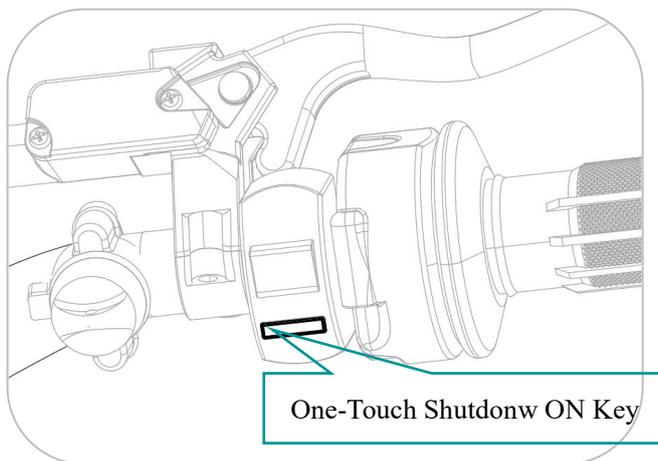
## 5 、 Learn to Ride

### Start

1、 Press and hold the center button on the left-side handlebar display until the dash lights up, then push the kill switch on the right side downward to start the bike.

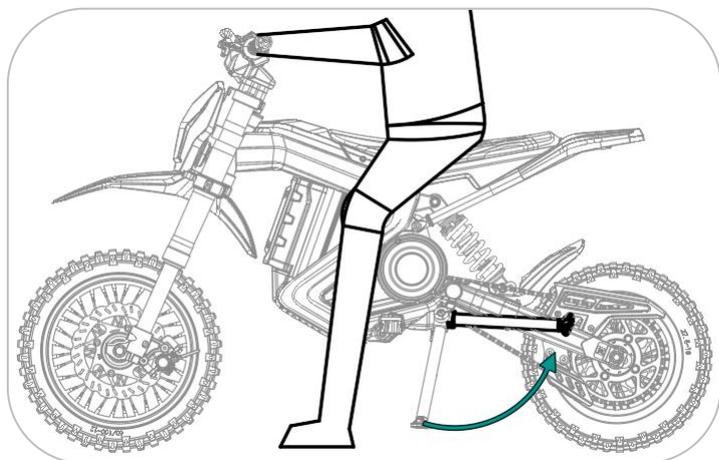
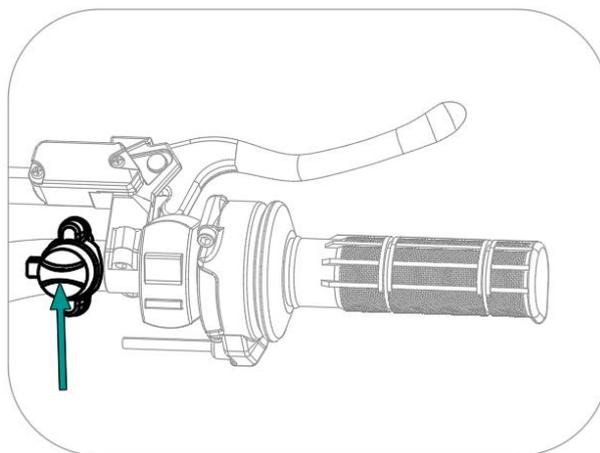


2、 Check whether all switches, the instrument panel, the horn, and the front and rear brakes are functioning properly.



3、 Magnetic safety switch protection function: Before riding, wrap the strap of the magnetic safety switch around your right wrist and ensure that the magnetic switch is firmly attached to its base.

**Note:** If the bike tips over or flips and the rider's hands leave the handlebars, the magnetic switch will be pulled away from its base, cutting off power to protect the rider.

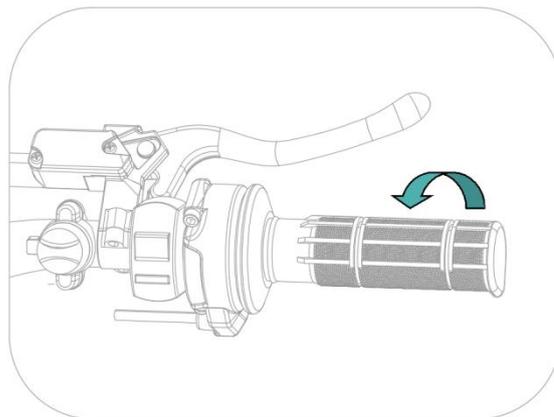


3、 Before starting the vehicle: Sit firmly on the bike and retract the kickstand.

**Acceleration should be smooth and gradual. Do not apply sudden or excessive throttle, as this may cause danger or damage vehicle components. For first-time riders, always use Mode 1. Switch to Modes 2 and 3 only after becoming fully familiar with the bike.**

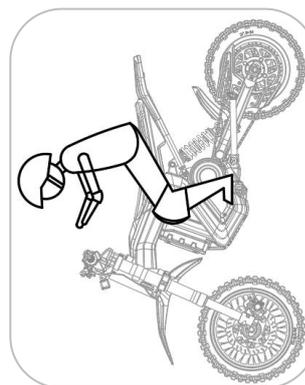
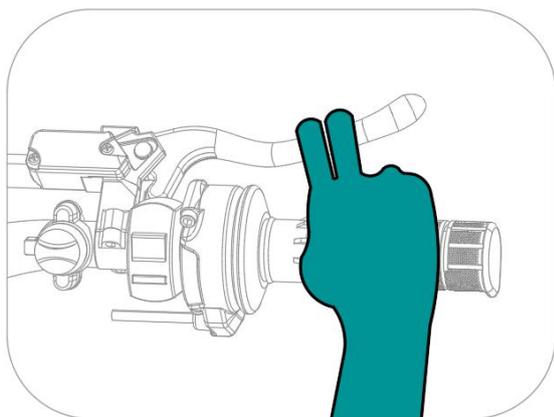
5、 Slowly rotate the throttle inward to accelerate; release it to stop accelerating.

**Note:** The brake lever must be released when accelerating, otherwise the brake power-cutoff function will be activated.

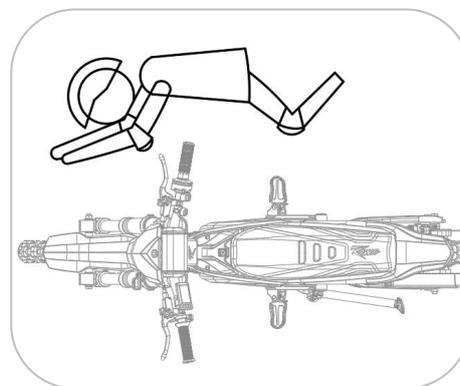
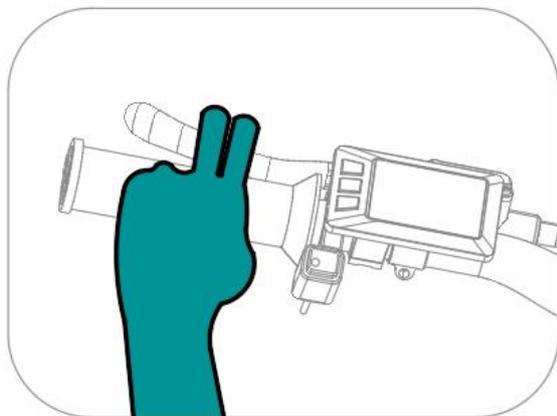


Operate the brake lever according to actual riding conditions, applying force gradually. Do not suddenly pull the brake fully, as this may cause the wheels to lock and slip, leading to danger. Anticipate road conditions whenever possible and avoid sudden braking or sharp turning maneuvers that may cause skidding or falls—these are especially dangerous on slippery roads during rainy conditions.

Suddenly pulling the right brake lever fully while riding may cause the bike to overturn.

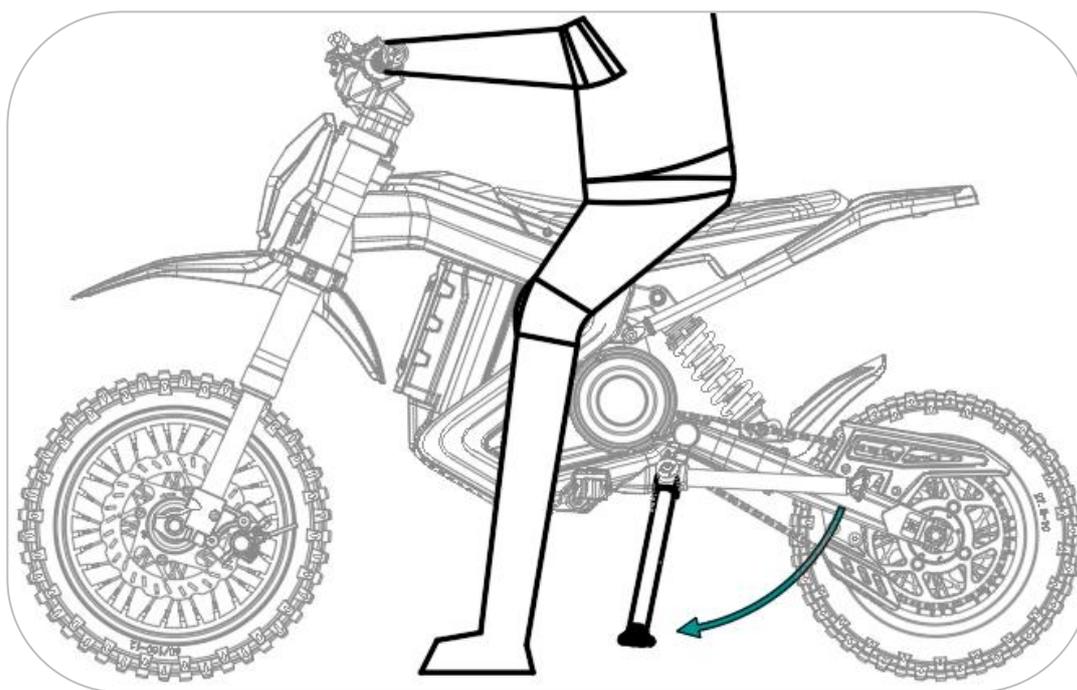
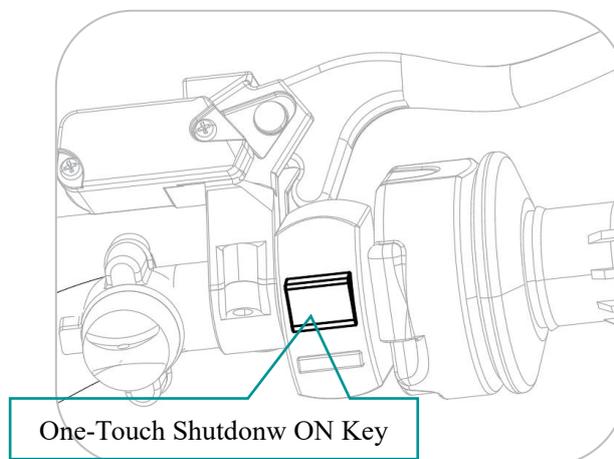
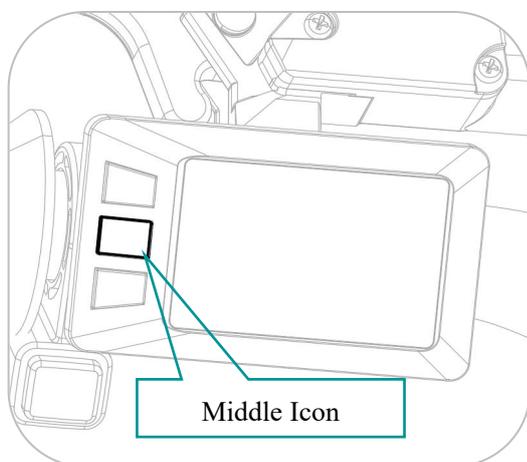


Suddenly pulling the left brake lever fully while riding may cause the bike to overturn.



## Parking

Pay attention to road conditions and reduce speed as you approach the parking area. Once the bike is stable, push the one-touch power-off switch on the right side upward, then press and hold the center button on the left-side display to turn off the dash. Lower the kickstand to secure the bike.



When parking while remaining seated, be sure to lower the kickstand to engage the P-gear parking function. This disables power output and prevents accidental throttle activation that could lead to an accident.

## 6 、 Bike Usage Guidelines

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### ● P-Gear Parking Function

- 1、 The bike automatically enters P-gear parking mode when powered on.
- 2、 Deploying the kickstand activates P-gear parking mode.
- 3、 Turning off the one-touch power-off switch also triggers P-gear parking mode.

**Note:** The P-gear parking mode can be released only when the kickstand is in the open position and the magnetic safety switch is closed.

### ● Bike “Power-Off” Condition

- 1、 Brake power cutoff: When the brake lever is squeezed, rotating the throttle will not produce power.
- 2、 Motor overheating protection.
- 3、 Controller overheating protection.
- 4、 Battery overheating or reaching undervoltage protection threshold.
- 5、 Magnetic safety switch disengaged.
- 6、 One-touch power-off switch turned off.

### ● Reduced Power Output Conditions

- 1、 Controller overheating (when the operating temperature exceeds 85°C, derating starts; for every 1°C increase, power is reduced by 10%. If overheating continues and power is reduced to 20% of the rated output, power will be cut off until the controller cools down, then it can be used again).
- 2、 Motor overheating (when the operating temperature exceeds 110°C, derating starts; for every 1°C increase, power is reduced by 10%. If overheating continues and power is reduced to 20% of the rated output, power will be cut off until the motor cools down, then it can be used again).
- 3、 Voltage starts linear derating from 53V; for every 1V drop, power is reduced by 20%, down to a minimum of 15% of the rated output.
- 4、 When the battery level is 0, power output stops. (If you continue to use the battery without timely charging, over-discharge protection may be triggered.)

**Note:** After over-discharge protection is triggered, the battery must be reactivated by charging with the charger. For the activation method, see Page 27, Fault No. 7.

### ● Operating environment

- 1、 When temperature is below 0°C, it is not recommended to use Gear 2 or Gear 3.
- 2、 When temperature exceeds 50°C, avoid prolonged full-power riding.

### ● Water Exposure

The electric dirt bike may occasionally pass through water (depth not exceeding 20 cm), but must not be immersed in water for a long time, especially when the motor is at a high temperature. After immersion and cooling, internal air contraction may cause water to be drawn in through the oil seals and cable entries, resulting in damage.

The waterproof ratings of each component are as follows:

Battery: IP55

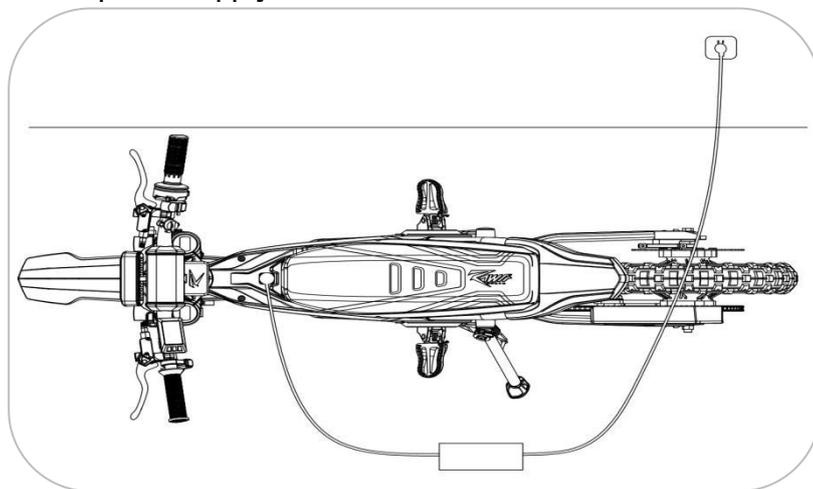
Motor, controller: IP66

All connectors on the bike: IP55

## 7、 Charging

### Bike Charging

Connect the output end of the charger to the vehicle's charging port, and then connect the other end to the power supply.



**WARNING**

Do not charge the battery below 0°C, as doing so may damage the battery. Wait for the battery temperature to rise before charging.

For proper use and maintenance of the lithium battery: do not disassemble used lithium batteries yourself; they should be recycled by authorized agencies.

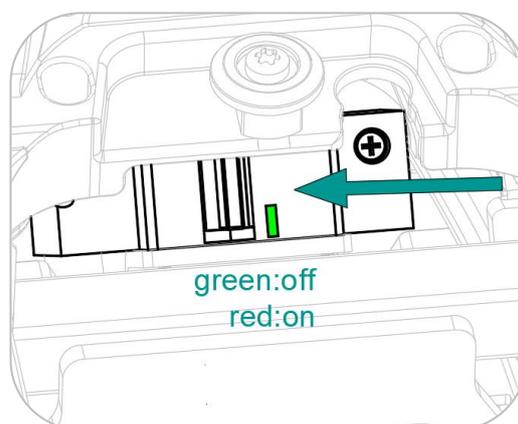
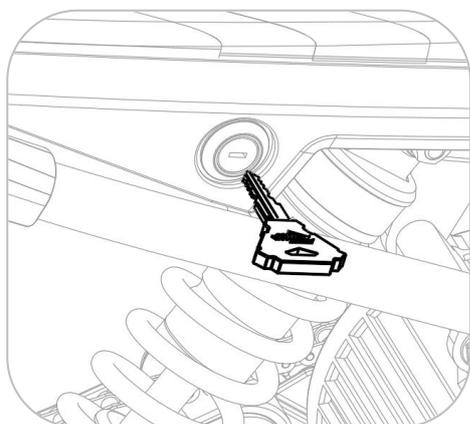
If the vehicle will not be used for more than one month, be sure to turn off the power cutoff switch or unplug the power connector, and store the battery at 70–80% charge.

When not charging, always close the rubber sealing cap on the charging port.

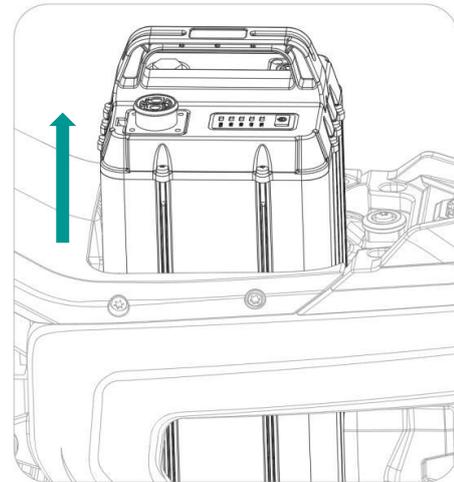
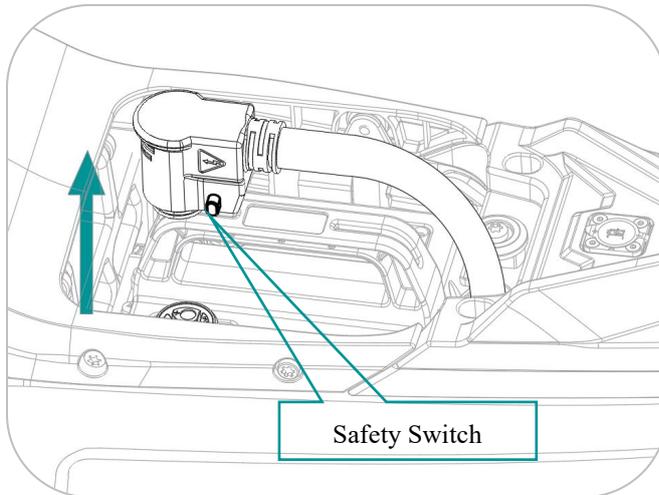
### Portable Charging

#### 1、 Remove the battery

1) Turn off the one-touch power-off switch first, then turn off the display. Insert the key into the seat lock on the right side of the seat and unlock it. Lift the rear of the seat upward and backward to remove it, then turn off the power cutoff switch.

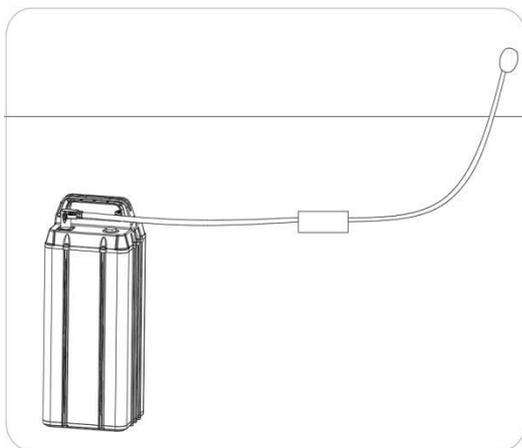


2) Press the safety latch on the discharge plug, then pull the discharge plug upward to disconnect it, and lift the battery out.

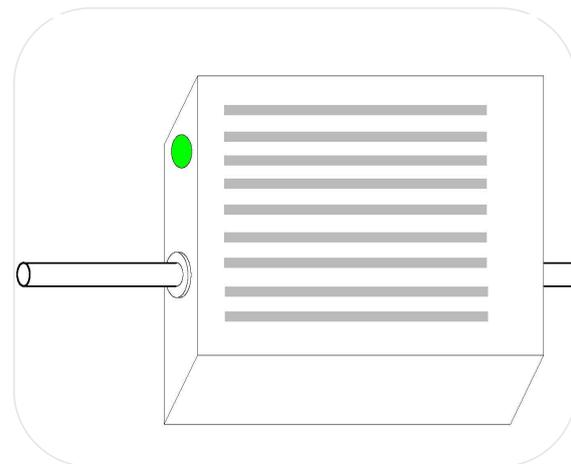


## 2、Charge the Battery

1) First connect the charger's output end to the lithium battery's charging port, then connect the other end to the power source.



2) The charger indicator flashing red means charging is in progress. When the battery is fully charged, the green light will remain on; please disconnect the power promptly after charging is complete.



### About Charging

- It is recommended that charging of the electric dirt bike be performed by an experienced adult and kept away from children.
- Do not place any objects on the charger. Use the charger in a dry, well-ventilated environment.
- If you notice any unusual odor or excessive heat during charging, stop charging immediately. If the charger fails to indicate full charge after an extended period, take it to a service center for inspection.



**WARNING**

Always use the dedicated lithium battery charger designed for this bike. When replacing the charger, be sure to use an original factory charger. The air switch must be turned off before installing or removing the battery. Plugging or unplugging the battery while powered may shorten the lifespan of the discharge connector. When the air switch is ON, connecting the battery plug may cause arcing, which can damage the plug or the battery.

The charger will automatically shut off when fully charged; however, avoid leaving the charger connected to the power supply for an extended period. The maximum connection time should not exceed 6 hours.

## 8、Bike Parameters

	Items	Parameters	
Basic Information	Brand	RAWRR	
	Overall Dimensions (L*W*H)	Front Wheel 14# Rear Wheel 12#: 1510mm*671mm*895mm Front Wheel 12# Rear Wheel 10#: 1455mm*671mm*875mm	
	Overall Weight (including battery)	Front Wheel 14# Rear Wheel 12#: 50Kg Front Wheel 12# Rear Wheel 10#: 48Kg	
	Maximum Load Capacity	50Kg	
Major Parameters	Wheelbase	1037mm	
	Seat Height	Front Wheel 14# Rear Wheel 12#: 654mm Front Wheel 12# Rear Wheel 10#: 635mm	
	Minimum Ground Clearance	Front Wheel 14# Rear Wheel 12#: 240mm Front Wheel 12# Rear Wheel 10#: 220mm	
	Maximum Speed	Front Wheel 14# Rear Wheel 12#(60V) 50Km/h	
	Maximum Power	3KW	
	Full Charge Range	Average Speed 25Km/h≥50km	
	Protection Rating	IP55	
Body System	Body Type	Double-beam Aluminum Alloy Forging	
	Wheel System Type	Spoke-style Wheel Rims - Aluminum Alloy: Front Wheel: 14#*1.4      12#*1.4 Rear Wheel: 12#*1.6      10#*1.6	
	Front Tire Type	Offroad Tire 60/100-14#    60/100-12#	
	Rear Tire Type	Offroad Tire 70/100-12#    70/100-10#	
	Transmission System	06B Chain 136 Section	
	Front Brakes	203mm/2 Piston Hydraulic Disc	
	Rear Brakes	203mm/2 Piston Hydraulic Disc	
	Suspension System	Front Dual-shock Absorbers - 100mm travel Adjustable Hydraulic Rear Shock Absorber - 45mm Traveling Range	
Motor	Rated Power	2000W	
	Rated Torque	34N.m	
	Maximum Motor Speed	3000r/min	
	Climbing Angle	40°	
	Cooling Method	Natural Cooling	
Controller	Control Solution	FOC Sinusoidal Vector Control	
	Rated Input Voltage	48V	60V
	Rated Output Current	30A	30A
	Operating Ambient Temperature	-20~+65	-20~+65
	Undervoltage Protection Value	39.5V	48.5V

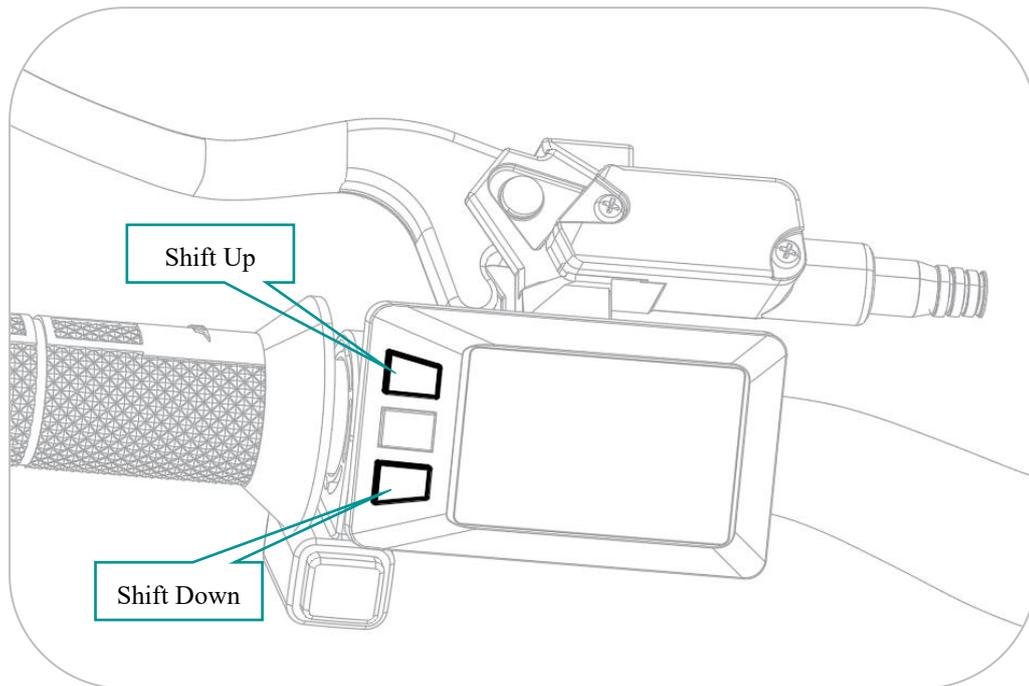
Charger	Charger Type	Charger	
	Rated Output Voltage	48V	60V
	Input Voltage	110~250VAC 50/60HZ	110~250VAC 50/60HZ
	Output Voltage	54.6V	67.2V
	Output Current	6A	6A
Others	Handlebar Specifications	Tapered Aluminum 22mm	
	Communication Port	CAN Communication	
	Lighting System	LED	
	Instrument Type	Colorful LCD	

Note: Riding range may vary significantly depending on the testing environment. The stated data was measured with a 50 kg rider at an ambient temperature of 25°C.

## 9、 Other Instructions

1、 The Mantis Mini model (48V/60V) is equipped with three riding modes:

- 1) Mode 1: Beginner training mode.
- 2) Mode 2: Soft launch with limited initial power for linear acceleration and anti-wheelie control.
- 3) Mode 3: Full launch power enabled, allowing easy wheelies.

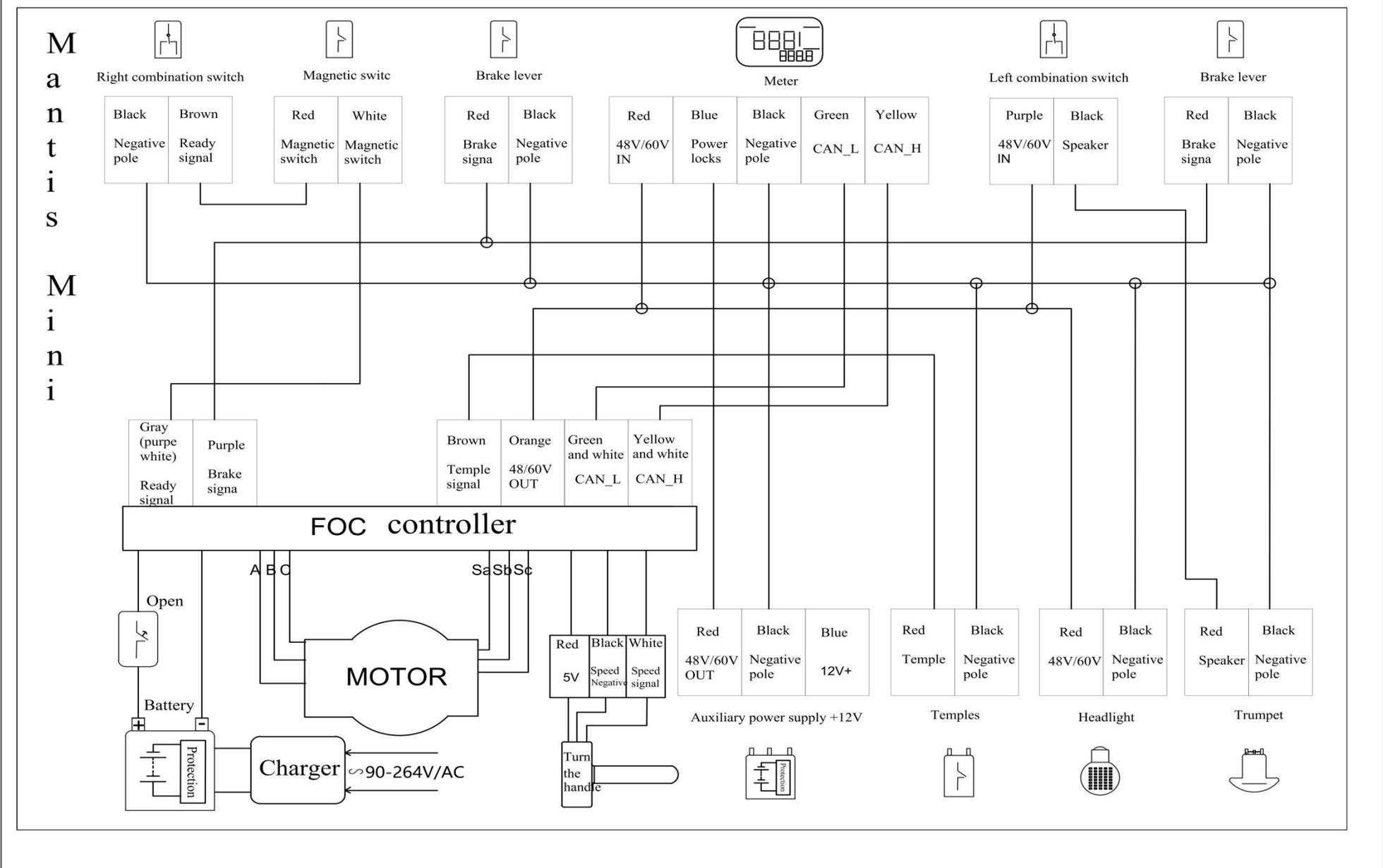


2、 RAWRR is committed to continuously improving product performance. Specifications and manual content may be updated without prior notice. Thank you for your understanding. If there are differences between the illustrations or images in this manual and the actual product, the actual product shall prevail.

3、 Within the limits permitted by law, RAWRR reserves the right to interpret and explain the statements related to this product.

4、 If you decide one day to resell or give away your RAWRR electric dirt bike, please remember to pass this manual along as it is part of the product. If you have any questions or need assistance from RAWRR, we are always happy to help. Thank you again for choosing and trusting our product.

# Attachment: Complete Bike Electrical Schematic Diagram



## Controller Alarm Fault Codes

Alarm Code ( Buzzer Beep)	Fault Name	Protective Measures	Troubleshooting
1 (1 Short)	Software Overcurrent	Shutdown	1. Restart with the key. 2. Replace the controller. 3. Replace the motor.
2 (2 Short)	Motor Overspeed	Shutdown	1. Restart with the key. 2. Replace the controller wiring harness. 3. Replace the controller. 4. Replace the motor.
3 (3 Short)	Battery Overvoltage	Shutdown	1. Restart with the key. 2. Check if the controller/circuit breaker power cable is loose. 3. Replace the battery.
4 (4 Short)	KEY Power Abnormal	Shutdown	1. Restart with the key. 2. Replace the ignition switch. 3. Replace the battery.
5 (5 Short)	Controller 12V Power Abnormal	Shutdown	1. Replace the controller.
6 (6 Short)	Controller 5V Power Abnormal	Shutdown	1. Replace the throttle. 2. Replace the motor encoder. 3. Replace the controller.
7 (7 Short)	Angle Sensor Disconnected	Shutdown	1. Replace the controller Hall sensor wiring harness. 2. Replace the controller. 3. Replace the motor.
8 (8 Short)	Hardware Overcurrent	Shutdown	1. Replace the throttle. 2. Replace the controller. 3. Replace the motor.
9 (9 Short)	Current Closed-Loop Failure	Shutdown	1. Replace the controller.
10 (1 Long)	Battery Undervoltage	Derating	1. Charge the battery. 2. Replace the battery.
11 (1 Long 1 Short)	Controller Overheating	Derating	1. Turn off power and allow the controller to cool down.
12 (1 Long 2 Short)	Motor Overheating	Derating	1. Turn off power and allow motor to cool. 2. Replace controller wiring harness. 3. Replace motor wiring harness.
13 (1 Long 3 Short)	Current Sensor Abnormal	Shutdown	1. Replace the controller.
14 (1 Long 4 Short)	Motor Signal Interference	Shutdown	1. Replace the controller wiring harness. 2. Replace the motor.

15 (1 Long 5 Short)	Throttle No Signal	Shutdown	<ol style="list-style-type: none"> <li>1. Check if the throttle cable connection is fully seated.</li> <li>2. Replace the throttle.</li> <li>3. Replace the main cable.</li> </ol>
16 (1 Long 6 Short)	Throttle Not Reset	Shutdown	<ol style="list-style-type: none"> <li>1. Reset the throttle and restart with the key.</li> <li>2. Replace the throttle.</li> </ol>
17 (1 Long 7 Short)	Motor Stall	Derating	<ol style="list-style-type: none"> <li>1. Check if the controller display is loose or misconnected.</li> <li>2. Check if the drive wheel is jammed.</li> <li>3. Replace the motor.</li> </ol>
18 (1 Long 8 Short)	Battery Communication Disconnected	Shutdown	<ol style="list-style-type: none"> <li>1. The CAN harness is not connected.</li> <li>2. Replace the controller wiring harness.</li> <li>3. Replace the power cable.</li> <li>4. Replace the battery.</li> </ol>
19 (1 Long 9 Short)	Battery Communication Failure	Shutdown	<ol style="list-style-type: none"> <li>1. Replace the battery.</li> </ol>
21 (2 Long 1 Short)	Brake Failure	Shutdown	<ol style="list-style-type: none"> <li>1. Reset the brakes and restart the ignition.</li> <li>2. Replace the brake cut-off wire.</li> </ol>

## 10、 Fault and Troubleshooting

No	Item	Reason	Troubleshooting
1	Power On, Motor not working	<ol style="list-style-type: none"> <li>1. Battery connector loose</li> <li>2. Speed control central connector disconnected</li> <li>3. Motor wiring loose or disconnected</li> <li>4. Brake handle does not return to position or brake switch failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Check if the connection lines are securely connected.</li> <li>2. Repair the plug connection firmly.</li> <li>3. Reconnect and tighten.</li> <li>4. Check the brake handle and brake switch.</li> </ol>
2	Speed control failure or maximum speed is low	<ol style="list-style-type: none"> <li>1. Low battery voltage</li> <li>2. Speed control handle failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Fully charge the battery.</li> <li>2. Replace the speed control handle at the after-sales service center.</li> </ol>
3	Insufficient range per charge	<ol style="list-style-type: none"> <li>1. Tire pressure is insufficient</li> <li>2. Insufficient charging or charger failure</li> <li>3. Improper brake adjustment, excessive driving resistance</li> <li>4. Battery aging or damage</li> <li>5. Multiple uphill climbs, headwinds, frequent acceleration and deceleration, heavy load</li> </ol>	<ol style="list-style-type: none"> <li>1. Inflate the tires to the appropriate pressure.</li> <li>2. Ensure sufficient power or replace the charger.</li> <li>3. Readjust the brakes.</li> <li>4. Replace the battery.</li> <li>5. Decreased range in certain usage environments is considered normal.</li> </ol>
4	Charger not charging	<ol style="list-style-type: none"> <li>1. Charger plug loose or connection loose</li> <li>2. Battery pack connector plug loose</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten the plug or connector, open the seat battery compartment, and secure the plug.</li> <li>2. Open the seat, and secure the plug.</li> </ol>
5	Seat cannot be opened	<ol style="list-style-type: none"> <li>1. Seat lock failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the seat lock at the after-sales service center.</li> </ol>
6	Transmission during driving abnormal	<ol style="list-style-type: none"> <li>1. Chain tension unreasonable</li> <li>2. Tire misalignment</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the chain tension.</li> <li>2. Adjust the left and right friction pads to center the tire.</li> </ol>

	noise		
7	After connecting the power supply, the charger cannot work properly, and at the same time, the battery meter does not display any power	Battery over-discharge protection due to prolonged non-charging or improper battery storage	Connect the charger's output end to the battery charging port, plug the charger's input plug into the mains power supply, wait for the battery power indicator to light up, and the battery will enter normal charging state.
8	Brake not responsive	Brake pads wear	Replace the brake pads.
9	Other faults	<ol style="list-style-type: none"> <li>1. When you encounter a fault that cannot be resolved by the above instructions or cannot be determined</li> <li>2. Motor, controller, charger, battery damage</li> </ol>	If you encounter any of the above situations, please contact the supplier or maintenance station. Do not attempt to open the above components yourself, as this may void the warranty commitment from our company.
10	Stucked at p-gear	<ol style="list-style-type: none"> <li>1. One-touch shutdown switch off.</li> <li>2. Magnetic switch on.</li> <li>3. Kickstand down.</li> </ol>	

# 11、 Maintenance Guidance

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In principle, for normal riding, the first inspection (also known as the initial maintenance) should be conducted between 10 to 30 kilometers.

**Inspection includes:**

- Checking the tightness of the front and rear wheel spokes.
- Verifying if there is any looseness in the steering column bearings.
- Inspecting the tension of the chain.
- Checking the shock for oil leaks, ensuring compression and rebound are in the correct position. (Note: During adjustment, do not turn the adjustment knob to the extreme left or right.)
- Checking the tightness of the screws securing the handlebars.

**Special Attention: Maintenance operations must be performed with the power off.**

**During inspection, safety precautions should be taken:**

1. Choose a wide and flat area to park the bike.
2. When conducting riding inspections, do so in a safe location while being aware of the surrounding environment.
3. If any abnormalities are detected during inspection, resolve them before driving. If unable to resolve on your own, contact after-sales service or designated authorized service centers.

**Notes:**

1. Both front and rear brakes are disc brakes. When brake pads wear, replace the brake pads promptly.
2. Pay attention to the cleanliness of the disc brake system during daily use to avoid prolonged attachment of mud and dirt, especially oil stains.

**Inspection of Operating Components:**

1. **Check the shock for bending, deformation, or damage.**

Inspect the front shock for any faults such as damage or oil leakage. Check for abnormal noises caused by front shock malfunctions when shaking the handlebars up and down. If any

abnormalities are detected in the front shock, please contact the after-sales service or designated authorized service centers.

## **2. Brake System Inspection.**

Inspect the free play of the brake handle to ensure it falls within the specified range (15~30mm). If the measurement does not meet the requirements, adjustments should be made.

## **3. Brake Effectiveness Check.**

Perform a low-speed check on a dry, flat road surface. Test the effectiveness of both front and rear brakes separately.

## **4. Inspection of Tires, Spokes, Tension Wheels, and Chains.**

The tires are in continuous contact with the ground, and foreign objects such as stones, glass, and nails on the road can damage your tires. Therefore, pay attention to the road surface while driving to avoid areas where tire damage may occur. Additionally, regularly check for obvious cracks or damage to the tires, and inspect for embedded stones, glass, or other foreign objects, as well as any abnormal wear and tear.

1. Check tire pressure with a tire pressure gauge while the tires are cold.

2. Inspect for cracks, damage, and abnormal wear and tear on the tires.

3. Check for loose spokes on the wheel rim.

4. Check the tension of the chain. The vertical movement of the chain should be 10~20mm.

5. Tread Depth Inspection.

Inspect the tire wear and check the tread depth. Replace the tire when the wear reaches two-thirds of the block depth. If there are abnormal noises or vibrations from the tires while driving, please contact the after-sales or designated authorized service centers for inspection and repair.

Recommendation: The tightening torque for the rear wheel axle nut is 40N.m, and for the front wheel axle nut, it depends on the front fork.

**Note: If squeezing the brake handle does not achieve the desired braking effect, check the cleanliness and thickness dimensions of the disc brake pads. If the issue persists, please contact the after-sales authorized service center for inspection.**

## **Battery Inspection:**

### 1. Check Battery Capacity.

The bike uses a sealed lithium-ion battery. When checking, the battery should be fully charged, and then the voltage of the positive and negative terminals should be measured using a multimeter.

The voltage when fully charged should be within the range of 66.2~67.2V, which is normal.

### 2. Check Battery Appearance.

Inspect whether the battery is damaged. If there is any damage to the upper or lower sealing covers of the battery or to the battery level indicator, it may lead to the risk of water ingress after sealing failure. Please contact the after-sales or designated authorized service centers.

#### Note:

1. Before installing or removing the battery, close the key switch and air switch, and seal the charging port with the sealing cap.
2. If the battery cannot be inserted into the battery compartment, do not force it. Instead, remove the battery and check if any foreign objects are causing the battery to jam.
3. During winter storage, it is recommended to store the battery indoors at a temperature above 0°C and regularly check its capacity.

## **Battery Charging and Charger Usage:**

1. Only use a charger that matches the original model of the bike for charging. Do not use chargers of other models to avoid damaging the battery or posing a risk.

2. Check whether the input voltage of the charger matches the voltage of the power grid.

3. The charger will automatically shut off when fully charged. However, it is best to avoid leaving the charger connected to the power grid for an extended period. The maximum charging time after reaching full charge should not exceed 6 hours.

4. Users are strictly prohibited from disassembling the battery themselves to avoid damage and danger.

5. When the battery enters over-discharge protection, it needs to be activated by charging with the charger. Refer to section 7 on page 25 (Troubleshooting and Remedies) for activation methods.

## **Use and Maintenance of Electrical Components:**

1. Regularly check whether the motor fixing screws are loose.

2. Regularly check whether the motor and controller connections are loose and the insulation condition.
3. Regularly check whether the air switch connections are loose.
4. Avoid driving in excessively deep water to prevent affecting the lifespan of brake pads and the operation of the motor.

**Note:** When the motor temperature, controller temperature, or battery level is too low, the vehicle will automatically reduce power operation, which is not a malfunction.

## **Maintenance and Care for the Motor**

### **Usage**

1. During operation, if the controller malfunctions and the bike cannot be started directly.
2. During operation, there should be no intermittent or abnormal sounds or vibrations.
3. During operation, if gear oil (add GL-4 85W-90 oil, about 100mL) has not been added, the bike cannot be started directly.

### **Maintenance**

Around 1000 kilometers of travel, the entire bike should do the first maintenance. During the first maintenance, the gear oil in the reducer needs to be replaced, and the iron filings adhered to the oil drain plug need to be cleaned, and the remaining iron filings in the reducer need to be cleaned. Clean the dust and foreign objects around the vent plug to keep it unobstructed. Check the signals of various sensors and the tightness of bolts.

After the first maintenance, maintenance inspections should be carried out on the entire assembly according to the vehicle maintenance requirements, as follows:

- a. Check the sensor signals of the motor. If broken wires or damaged signal lines are found, they should be replaced in time.
- b. Check the suspension of the entire assembly and whether the bolts in various parts are loose. If looseness is found, it must be tightened immediately.
- c. Check the sealing surfaces and oil seals of the entire assembly, and replace damaged oil seals in time to ensure the sealing performance of the entire assembly.

d.Clean the area around the vent plug to keep it clear.

e.According to the bike's riding conditions, the gear oil should be changed every 3 months or every 5000 kilometers traveled (whichever comes first), and iron filings should be cleaned out.

## 12、 After-sales Service and Warranty Coverage

### Rawrr all-terrain off-road ebike after-sales service

In order to better protect your rights and interests, please keep this manual properly. When purchasing the vehicle, please inspect and debug it on the spot, and request the salesperson to provide correct usage methods and maintenance instructions, as well as effective receipts, warranty cards, maintenance addresses, contact numbers, etc.

When you use this bike and find any quality issues, you can bring the purchase invoice and warranty card to our company's authorized maintenance station for repair and maintenance services. The specific warranty items are as follows (repair faults refer to non-human factors):

NO	Name		Fault Factor	Warranty Period	Remarks
1	Motor	Brushless Motor	Wire Harness Damage	12 month (1,000 miles)	Excluding Human Factors  (Ensure the Motor in Its Original Packaging)
			Unable to Operate Normally		
2	Battery	Lithium-ion Battery	Capacity Below 60%	12 month (1,000 miles)	Excluding Human Factors
3	Electric Components	Controller, Charger	Failure Occurs and Cannot Be Repaired	12 month (1,000 miles)	Excluding Human Factors Products Must Remain in Their Original Condition
		Dash, Throttle, Main Wiring Harness	Failure Occurs and Cannot Be Repaired	1 month (100 miles)	
		Function Switches, Horn, Other Connecting Wiring Harnesses	Failure Occurs and Cannot Be Repaired	1 month (100 miles)	
4	Structural Compo	Entire Bike, Rear Shock	Fracture or Shock Failure	1 month (100 miles)	Excluding Human Factors (Brake Parts Excluding Brake Pads)
		Front Shock	Shock Failure	1 month (100 miles)	

	nents	Chain, Sprocket, Wheel	Performance Malfunction	1 month (100 miles)	
		Brake	Oil Leakage or Ineffective Braking	1 month (100 miles)	

During the warranty period, if any of the above components fail and cannot be repaired to normal working condition, they will be replaced free of charge.

The following items are considered consumable parts: tires, brake pads, steering bearings, front and rear mudguards, seat cushions, lights, etc. Except for quality issues, customers can contact the repair station or dealer for paid replacement or repair.

## 13 、 Regular Maintenance Record Card

Scheduled Maintenance Record Card		
Maintenance Period	Maintenance Requirement	Maintenance Person / Unit Seal
300Km / 1 month	Tightening of all vehicle fasteners, inspection of chain, tension wheel adjustment (motor, brakes, spokes, etc.)	
1000Km / 3 month	Inspection of all vehicle safety components, inspection of high-current circuits, inspection of chain and tension wheel adjustment, inspection of brake pads, spokes, etc.	
2000Km / 6 month	Inspection of high-current circuits, inspection of brake oil circuit, inspection of brake pads, inspection of spokes, chain, and tension wheel adjustment	

**Note:**

1. Users must timely perform the mandatory maintenance items specified in the "Scheduled Maintenance Record Card" at designated authorized service centers.
2. Failure by users to adhere to the scheduled maintenance items is considered a waiver of warranty.

Warranty Record Card

Maintenance Date	Warranty Status Record	Maintenance Person /Stamp

