

MANTIS

Electric All-Terrain Bike



RAWTT
MANTIS

INSTRUCTIONS

This manual should be considered a permanent part of the dirt bike (All-Terrain Bike) (All-Terrain Bike) and should remain with the dirt bike (All-Terrain Bike) when it is resold.

This publication includes the latest production information available before printing. Rawrr Inc. reserves the right to make changes at any time without notice and without incurring any obligation.

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The dirt bike (All-Terrain Bike) pictured in this manual may not match your actual dirt bike (All-Terrain Bike).

To ensure your safety and riding pleasure, please

- Read this manual carefully
- Follow all recommendations and procedures contained in this manual.
- Pay close attention to safety messages contained in this manual and on the dirt bike (All-Terrain Bike).

To protect your property, we highly recommend you take responsibility for keeping your dirt bike (All-Terrain Bike) well-serviced and maintained. Also, observe the break-in guidelines and always perform the pre-ride inspection and other periodic checks in this manual.

Your Rawrr dealer knows your dirt bike (All-Terrain Bike) best. It is recommended that you contact Rawrr or an authorized dealer for any questions and concerns regarding the dirt bike (All-Terrain Bike), the manual, and related policies. We are not responsible for any unofficial statements or opinions regarding the dirt bike (All-Terrain Bike), the manual, and related policies.

You may also visit our website at www.riderawrr.com for more information.

Enjoy your dirt bike.

Your safety, and the safety of others, is the top priority. Operating this dirt bike (All-Terrain Bike) safely is an important responsibility.

To ensure the safety of you and others, we have provided operating procedures and other information on safety labels in this manual with potential hazards that could hurt you or others.

Please understand that it is not practical or possible to inform or warn you about all hazards when operating or maintaining the dirt bike (All-Terrain Bike). You must use your own good judgment.

You will find important safety information in a variety of forms, including:

- Safety labels on the dirt bike (All-Terrain Bike)
- Safety Messages preceded by a safety alert

CIRCULATION IS STRICTLY PROHIBITED In public with this dirt bike (All-Terrain Bike).

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

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1、 Safety Notice

Please read this chapter carefully for the safety of your life and property and that of others!

Before riding:

- Do not assemble, unpack, or pack this dirt bike (All-Terrain Bike) alone. Teamwork is required.
- Please use the dirt bike (All-Terrain Bike) in accordance with local regulations.
- You are obliged to know the local laws and use the dirt bike (All-Terrain Bike) in compliance with these laws.
- Carrying this manual and other documentation proving the ownership of the dirt bike (All-Terrain Bike) is recommended.
- Do not overload the dirt bike (All-Terrain Bike): avoid exceeding the weight limitation of this dirt bike (All-Terrain Bike). THIS DIRT BIKE IS NOT ALLOWED FOR ANY PASSENGER OTHER THAN THE RIDER.
- Make sure you are trained for riding a dirt bike (All-Terrain Bike) and know all its control functions.
- Know the abilities, capabilities, and limitations of the dirt bike (All-Terrain Bike). Familiarize yourself with the brake and motor systems to ensure good control of the dirt bike (All-Terrain Bike). Practice using the brake in an unobstructed and open area until you have smooth control of the dirt bike (All-Terrain Bike). The SPORT mode off-road of this dirt bike (All-Terrain Bike) is very powerful. The rider can be hurt seriously without proper knowledge and training.
- Avoid skidding to stop, as it may result in losing control or damaging the tires.
- Modifying the dirt bike (All-Terrain Bike) in any form is not recommended, as it may result in property damage and injury.
- This dirt bike (All-Terrain Bike) is not a children's toy.
- Be sure to use Rawrr's special lithium battery charger. The input AC voltage is 90 ∞ 260 V. Before charging, check the charging port and charger to see if there is moisture or water. Please do not charge if it's wet. When charging, keep away from flammable and explosive, high-temperature objects, high dust, and other special environments; after charging is completed, please disconnect the power in time.
- It is forbidden to charge the lithium battery below 14 F. Otherwise, it will damage the battery. Please wait for the battery temperature to rise before charging.

Perform safety checks every time before you start the motor or ride.

Pre-ride Checklist

Loose Parts

There should be no unusual rattles or sounds from loose parts or broken components.

Ask an authorized dealer to check for you or call customer service if you need help.

Brake

Check the brake for proper function. When you squeeze the lever, the brake should provide positive braking action. When you apply the brake with the speed control on, the brake cut-off switch will stop the motor.

Tire Inflation

Check tire pressure and wear regularly, and inflate or replace tires as needed. Tire pressure must be 29~32psi (200~220Kpa), normal tread pattern and no nails, stones, glass, or other foreign objects embedded.

Frame, Fork, and Handlebars

Check for cracks or broken connections. Although broken frames are rare, it is possible for an aggressive rider to run into a curb or wall and wreck, bend or break the frame. Get in the habit of inspecting your product regularly.

Other parts

- Check whether the reflector is broken or contaminated.
- Check whether the power circuit, lighting, etc. are normal to ensure that the power meets the riding requirements.
- Spoke tightness: keep in sync with the actual spoke tension of the vehicle. Tighten immediately if there is looseness.
- The speed control handlebar is smooth without jamming and rapid return.
- Chain: If the chain is stuck, it is recommended that the mud and sand be cleaned off the chain surface and chain lubricant added; the chain displacement from the lowest to the highest position is 15-20mm under normal circumstances.
- The front and rear shock absorber moving parts are clean and free of dirt.

Safety Gear

Make sure that you are wearing approved personal protective equipment and suitable clothes, including

Approved helmet

Approved helmet with eye protection and high-visibility

Warning: Not wearing an approved helmet properly increases the chance of serious injury or death in an accident.

Gloves

Full-finger leather gloves with high abrasion resistance

Elbow pads and kneepads

Soft elbow pads and kneepads that cover your joints but do not limit your movements

Boots or Riding Shoes

Sturdy boots with non-slip soles and ankle protection

Jacket and Pants

Protective, highly visible, long-sleeved jacket and durable, long pants for riding (or a protective suit)

Additional Off-road Gear

On-road apparel may also be suitable for casual off-road riding. But if you plan on any serious off-road riding, you will need more serious off-road gear. In addition to your helmet and eye protection, we recommend off-road motorcycle boots and gloves,

riding pants with knee and hip pads, a jersey with elbow pads, and a chest/ shoulder protector.

Avoid wearing loose or baggy clothes that could get caught on any part of the dirt bike (All-Terrain Bike).

Do not let anyone else ride your dirt bike (All-Terrain Bike) on their own unless, after carefully reading this manual, they understand the features, functions, capacities, abilities, and risks of this dirt bike (All-Terrain Bike). The safety of new riders is your responsibility. Assist new riders until they are fully capable of operating this dirt bike (All-Terrain Bike). Make sure other riders also wear approved personal protective equipment and suitable clothes.

During transportation:

This dirt bike (All-Terrain Bike) is heavy. When moving the dirt bike (All-Terrain Bike) for riding or service, do not attempt to lift the dirt bike (All-Terrain Bike) alone to avoid any injury or damage to the dirt bike (All-Terrain Bike).

It is recommended to have the proper protection for the dirt bike (All-Terrain Bike) and movers at all times when moving and lifting the dirt bike (All-Terrain Bike).

Stay away from sharp and moving parts of the dirt bike (All-Terrain Bike) when moving the dirt bike (All-Terrain Bike), including but not limited to wheels, handlebars, gears, chains, footpegs, and any other parts that may hurt.

Securely fixing the dirt bike (All-Terrain Bike) during transport reduces the chances of injury and damage to the dirt bike (All-Terrain Bike).

When riding:

- Riding this dirt bike (All-Terrain Bike) on public streets, highways, or pedestrian trails is ILLEGAL. This dirt bike (All-Terrain Bike) is for recreational off-road use on enclosed roads, tracks, and private property.
- Riding this dirt bike (All-Terrain Bike) at full power increases the possibility of an accident regardless of the location. Do not exceed speed limits that jeopardize conductive capacity, and consider the existing climate and terrain conditions to avoid accidents or injuries.
- Take good care and drive at lower speeds considering the weather and road conditions.
- Riding in extreme weather such as snow, storms, or wild winds or riding on wet, muddy, icy, or slippery roads for any reason is not recommended.
- The braking distance will be extended when riding in rain, snow, or on wet roads. When the water on the road exceeds 9 inches, it may affect the normal operation of the brakes.
- Always have both hands on the handlebars and both feet on the footpegs. And pay attention to the road condition and surrounding environment.
- Using cell phones, cameras, headphones, earbuds, or any other mobile device is absolutely forbidden.
- Always consider the safety of other drivers and riders.
- Slow down and avoid pedestrians and vehicles when approaching or passing

through intersections, motorways, turnings, doorways, etc.

- When riding at high speed for a long time, it is recommended to use ECO mode and select the appropriate gear to meet the riding needs; using SPORT mode for a long time will shorten the range and affect the battery life.
- If the vehicle seems abnormal while riding, please stop riding immediately and find the cause of the alarm or malfunction. Wait until the warning is removed and repaired before using the vehicle. Contact the after-sales service for support as needed.

Warning: RIDING OR RIDING UNDER THE INFLUENCE (DUI) IS ILLEGAL.

Riding a dirt bike (All-Terrain Bike) under the influence of alcohol or drugs can reduce your judgment of road conditions and ability to respond to changing conditions. DUI is an absolute no.

People Who Should Not Ride The dirt bike (All-Terrain Bike) Include:

1. Anyone who is under the influence of alcohol or drugs.
2. Anyone who suffers from a disease that puts them at risk if they engage in strenuous physical activity.
3. Anyone whose weight is outside the stated limits (see Specifications). The recommended maximum weight is 100 kg (220 pounds)
4. Anyone who cannot balance a bicycle, motorcycle, and similar bikes.
5. Anyone who is pregnant.
6. Anyone who is restricted by law from driving or riding.
7. Anyone who is unable to engage in strenuous physical activity due to illness.
8. Anyone underage without the supervision of an authorized adult.

If You are Involved in a Crash

Personal safety is your top priority. If you or anyone else gets involved in a crash, take time to assess the severity of the injuries. Call for emergency assistance if necessary. Also, follow applicable laws and regulations if another person or dirt bike (All-Terrain Bike) is involved in the crash.

Lithium-Ion (Li-Ion) Battery

If you notice an unusual smell coming from the lithium-ion battery, immediately park your dirt bike (All-Terrain Bike) in a safe place outside and away from flammable objects. Turn off the motor and have your dirt bike (All-Terrain Bike) inspected by your dealer as soon as possible.

Racing

Racing always contains potential safety hazards, no matter how professional or well-trained a rider is.

Parking

Always park the dirt bike (All-Terrain Bike) on a firm, level, and safe surface with

easy access for the rider.

Parking procedures. To park:

1. Stop the motor.
 2. Step down the side stand.
 3. Slowly lean the dirt bike (All-Terrain Bike) to the side stand until it's firmly stood.
 4. Turn the handlebar fully in the same direction as the side stand.
 5. Lock the dirt bike (All-Terrain Bike) and remove the key.
- If you must park on an uneven or loose surface, park firmly so that the dirt bike (All-Terrain Bike) cannot move or fall.
 - Ensure no flammable materials are near hot parts such as batteries, motors, brakes, etc.
 - Do not touch the motor, battery, brakes, and other parts that may get high temperatures during the ride.
 - Always lock the handlebar and remove the key from the dirt bike (All-Terrain Bike) to reduce the chance of theft or start-up by accident. We recommend you use other anti-theft devices as well.
 - This dirt bike (All-Terrain Bike) is an electric offroad all-terrain bike with many electrical parts. Avoid submerging parts and the bike in water. Also, avoid prolonged exposure of parts and components to water or rain.

When not riding:

- Always turn off the motor when not riding your dirt bike (All-Terrain Bike).
- Keep your dirt bike (All-Terrain Bike) in a safe condition.
- It's important to keep your dirt bike (All-Terrain Bike) properly stored and in safe riding condition.
- Inspect the dirt bike (All-Terrain Bike) thoroughly before every ride to avoid a breakdown when the dirt bike (All-Terrain Bike) is off-road far from your base.
- Turn off the dirt bike (All-Terrain Bike) when not riding to avoid power loss and potential injury to you or anyone else and damage to the dirt bike (All-Terrain Bike).
- Keep unsupervised underaged people away from the dirt bike (All-Terrain Bike) to reduce potential safety risks.
- Storing the dirt bike (All-Terrain Bike), batteries, and cords away from water, open flames, and heat sources can effectively reduce the risk of disasters. Extremely hot or cold conditions may result in damage to the dirt bike (All-Terrain Bike), which could cause an accident when it's being ridden.
- Do not submerge the battery in water (the battery will be damaged, and this will destroy the waterproof performance of the battery); if the battery is submerged in water, it is strictly prohibited to charge the battery again, as it may cause the battery to overheat, potentially catch fire, and create a burning and explosion hazard.
- Battery Temperature: Vehicle operating temperature is between 14 and 113 degrees F. Recommended lithium battery storage temperature is between 32 and

104 degrees F. Do not store batteries or drive outside this range.

- Dirt bike (All-Terrain Bike) washing precautions: Please remove the battery when washing the vehicle, and only use low water pressure. Never clean the dirt bike (All-Terrain Bike) with a hydraulic monitor, which may cause damage to electrical components due to water intake.
- Children should not operate or play with any of the parts or tools of this dirt bike (All-Terrain Bike). No cleaning or maintenance work shall be done by children or any unauthorized adults.

Accessories & Modifications

Adding accessories not designed or authorized by Rawrr for the dirt bike (All-Terrain Bike) is not encouraged. We do not recommend any personal or unauthorized modifications to your dirt bike (All-Terrain Bike). Doing so may break the original design and make the dirt bike (All-Terrain Bike) unsafe.

Carefully inspect the accessories before using them to ensure they do not reduce ground clearance or cornering clearance, limit suspension travel, steering travel or control operation, or obscure lights or reflectors.

Accessories on the handlebar or the front fork area can create instability due to improper weight distribution or aerodynamic changes. If accessories are added to the handlebar or front fork area, they must be as lightweight as possible and should be kept to a minimum.

Heavy accessories may seriously affect the stability of the dirt bike (All-Terrain Bike) due to aerodynamic effects.

Certain accessories impact the riding position of the rider. This improper position and limited movement may affect control ability and cause a crash in which the rider can be seriously hurt or killed.

Modifying your dirt bike (All-Terrain Bike) may also void your warranty and make your dirt bike (All-Terrain Bike) illegal to operate. Before installing accessories on your dirt bike (All-Terrain Bike), ensure any modification is safe and legal.



WARNING

Never carry cargo that would impair the performance of your dirt bike (All-Terrain Bike), pull a trailer with your dirt bike (All-Terrain Bike), or add a sidecar to your dirt bike (All-Terrain Bike). Never attempt to modify the dirt bike (All-Terrain Bike) for carrying another passenger. This dirt bike (All-Terrain Bike) is not designed for ride-sharing and cargo or delivery shipping.

**Warning**

Riding a dirt bike (All-Terrain Bike) on a rainy day will reduce the friction between the tires and the road and reduce braking performance and visibility, substantially increasing the risk.

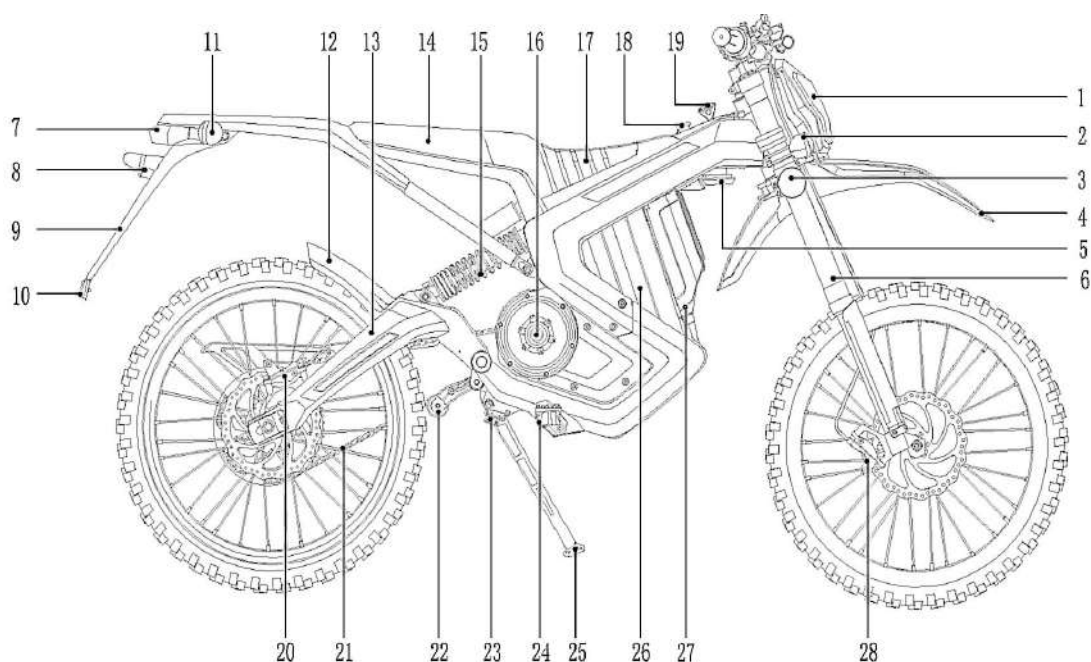
**Special Warning:**

If the dirt bike (All-Terrain Bike) smokes or burns when damaged by external forces, put it out with a dry-chemical fire extinguisher or sandy soil.

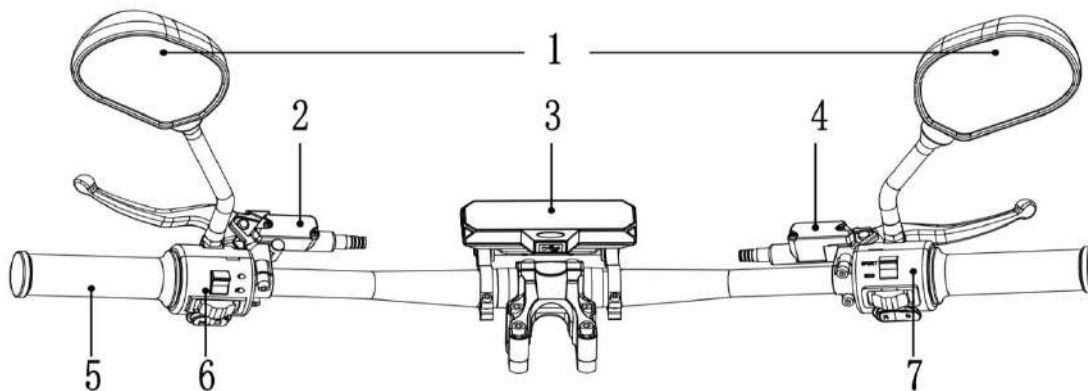
Lithium-Ion batteries may contain various kinds of chemical substances and might harm humans and the environment when broken due to aging or if damaged by external forces. It is strongly suggested to discard it as useless within 36 months from the date of purchase and submit it to a professional company for special treatment.

Disclaimers of Manufacturer a. no responsibility for any damages caused by nonconforming to the requirements in application instruction; b. no responsibility for any damages caused by any unauthorized modification c. no responsibility for any damages caused by force majeure.









2、Function Schematic



1-Headlight	2-Front turn signal (optional)	3-Front reflector (optional)	4-Front mudguard	5-Horn	6-Front fork
7-Rear taillight (optional)	8-License plate light (optional)	9-Tail light bracket (optional)	10-Rear reflector (optional)	11-Rear turn signal (optional)	12-Rear mudguard
13-Rear fork	14-Rear cushion	15-Rear shock	16-Motor	17-Front cushion	18-Charging port
19-Switch lock	20-Rear disc brake	21-Chain	22-Rising wheel	23-Side-support disconnect	24-Pegs
25-Side brace	26-Battery	27-Controller	28-Front disc brake		



1-Mirror 2-Rear brake handle 3-Gauge 4-Front brake handle 5-Left handle set
6-Left combination function switch 7-Right combination function switch



Left switches				
	High and low beam switching (headlights are required to be turned on)	Left and right turn signal switch	Horn switch	Seat cushion lock switch (to be used with power on)
Right switches				
	Driving light/headlight on switch	SPORT and ECO mode change-over switch	Reverse gear (long press to start the reverse mode when power is on)	Forward gear (to be powered up and used in ECO mode, there are three forward gears D1/D2/D3 that can be switched)



KEL-801

Dimension (length, width, height)	127 x 39.3 x 25.9 mm
Screen display size (length, width)	94.6x20.9mm
Screen type	VA(black and white)
	Operating temp -4 - 176 F
Operating voltage	12V
Function	Left and right turn, headlight, ECO/SPORT, speed, mileage, fault
Communication	CAN/UART port
Waterproof level	IPX6

No	Function	Symbol	Note
1	Speed		Current speed display while riding
2	ODO		Total mileage ODO display, metric mileage switchable
3	Single Mileage		Single mileage is re-calculated every time you turn on the power
4	Gear indication		ECO/SPORT mode according to the actual display ECO mode includes 1/2/3 gears
5	Operating status		Working indication, speed off, no speed on
6	Undervoltage indication		Blinking when the battery is under voltage
7	Far light indication		High beam on indicator
8	Steering indication		Left and right turn signal indication
9	P-gear indication	Letter P display	Speed position is displayed in letters
10	Motor fault		Fault display
11	Power percentage		00%~100% - display the current battery level

12	Reverse gear indication		Display in reverse gear
13	Fault code display		Display fault codes (see controller specification for code content)

Recommended torque for installation of important parts

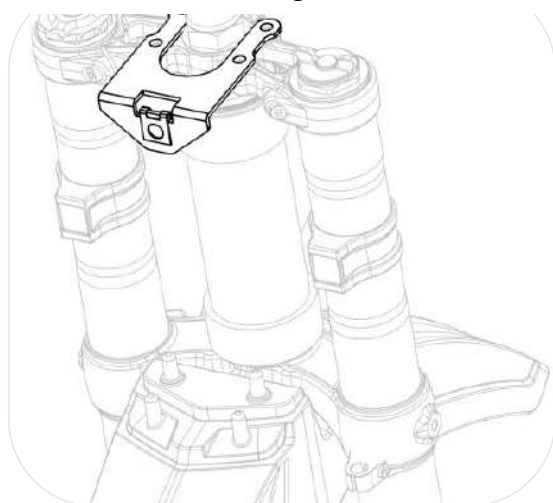
No	Installation Location	Recommended torque
1	Front wheel axle fastening	25-30N.m
2	Switch lock cover fastening	3-5N.m
3	Rear wheel sprocket fastening	18-20N.m
4	Front and rear wheel disc fastening	5-7N.m
5	Front and rear brake caliper fastening	7-9N.m
6	Tension Wheel Fastening	18-20N.m
7	Tension arm fastening	20-22N.m
8	Side support fastening	30-35N.m
9	Motor fixing fastening	20-22N.m
10	Rear fork fastening	55-65N.m
11	Rear Shock Absorber Fastening	40-45N.m
12	Rear tailstock fastening	18-20N.m
13	Rear wheel axle fastening	60-70N.m
14	Handlebar fastening	7-9N.m
15	Steering Column Slotted Nuts	3-5N.m
16	Steering Column Cap Nuts	40-45N.m

3、 Quick Installation Guide

DO NOT ASSEMBLE, UNPACK, OR PACK THIS DIRT BIKE (ALL-TERRAIN BIKE) ALONE. TEAMWORK IS REQUIRED.

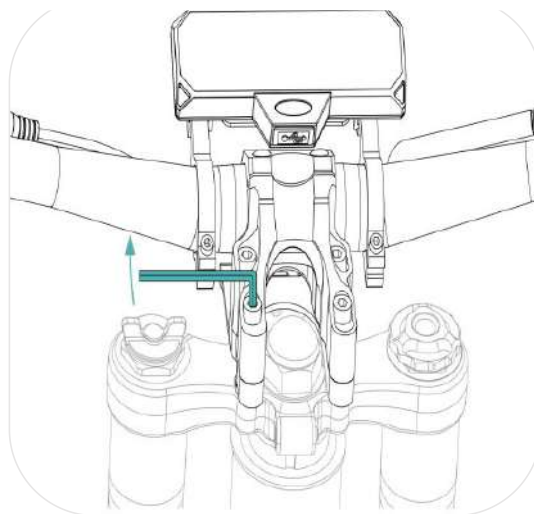
Mounting Handlebars

1、 Place the headlight bracket on the upper coupling plate, align the four 4 holes, and snap the clamp nut in the slot in front of the headlight bracket.



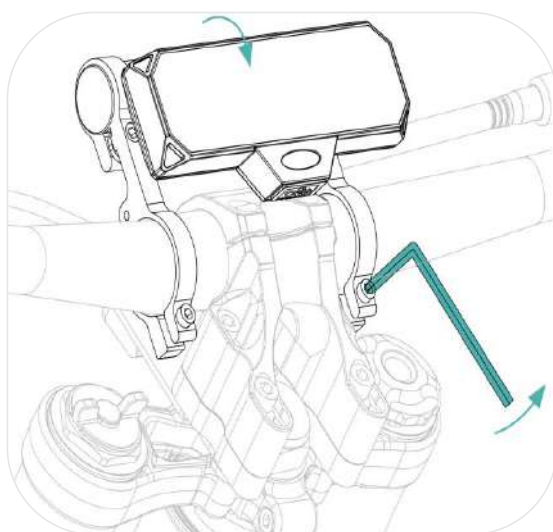
2、 Put the handlebar on the headlight bracket, align the holes, and lock the 4 screws with a 5# Allen wrench.

Note: 4 screws should be added with bullet spacers.



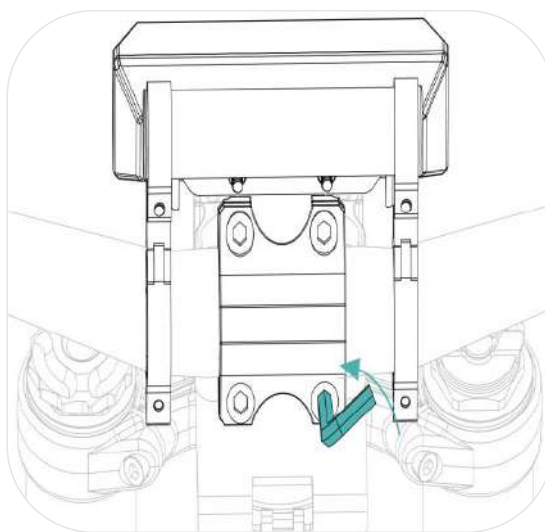
Handlebars Adjustment

1、 Loosen 2 screws with a 3# Allen wrench and rotate the meter at a suitable angle.



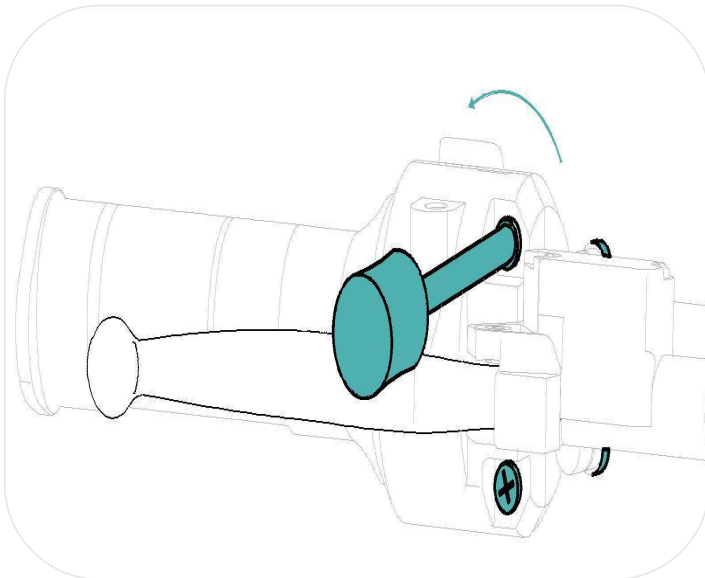
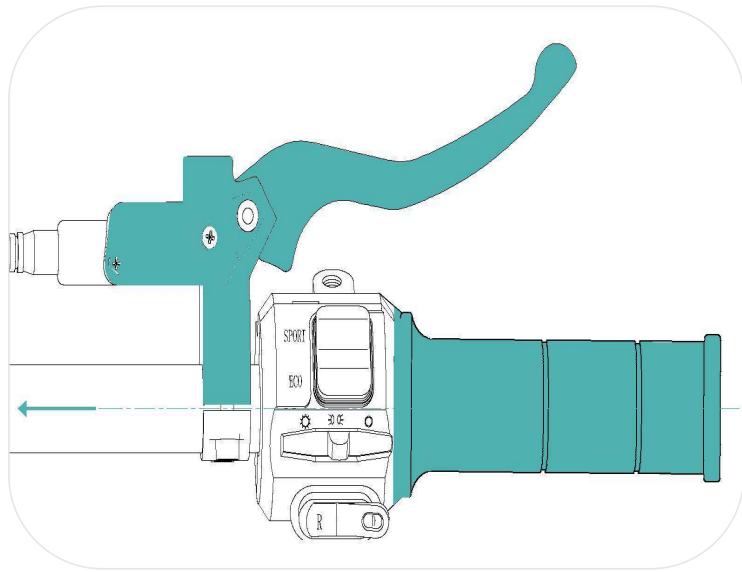
2、 Loosen 4 screws with 5# hexagonal wrench to adjust the handle angle.

Note: Do not lose the screw spring spacer.



Installation of brake handle and speed control handle

1、As shown in the figure, adjust the front brake handle and speed control handle to the right angle.

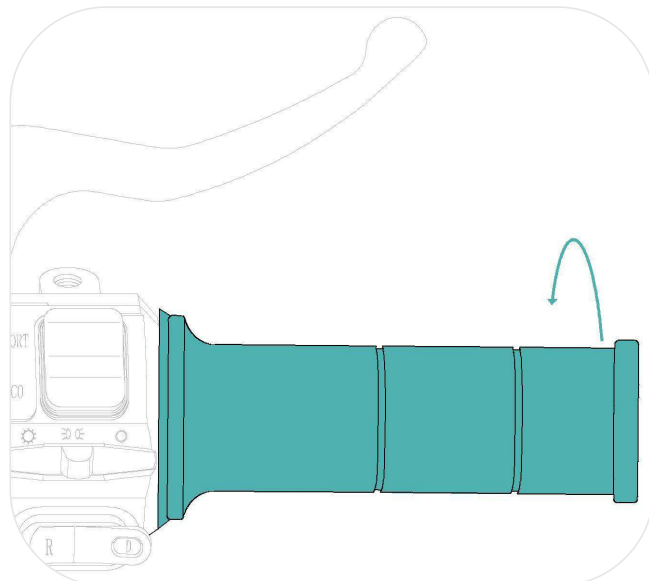


2. Use 4# hexagonal wrench and Phillips screwdriver to lock the speed control handle and front brake handle respectively.

3、Turn the speed control handle to ensure that it can return to the normal position, inward for acceleration.

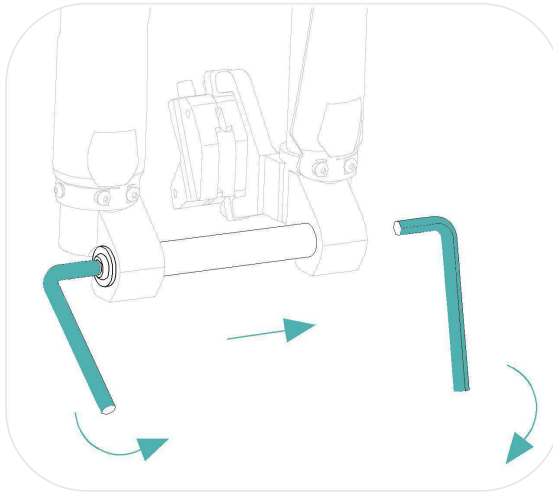
Note: If stuck, check the speed control handle

Note: The rear brake handle and left function switch are installed with the same steps as above.



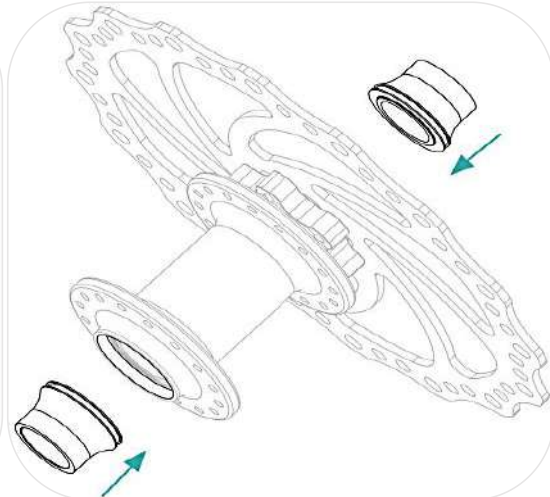
Mounting the front wheel

1. Loosen the front wheel lock nut with two 8# Allen wrenches and take out the shaft and nut.

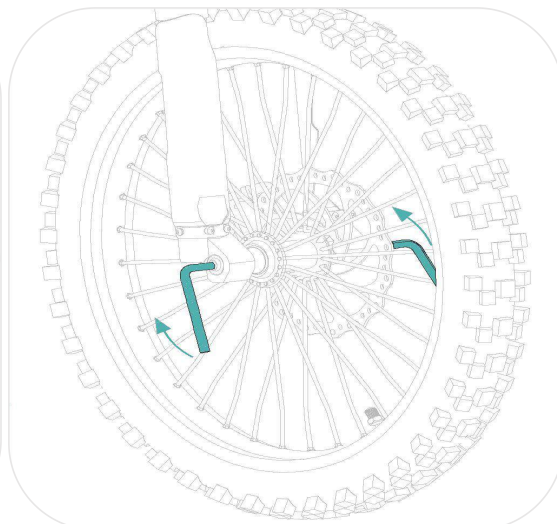
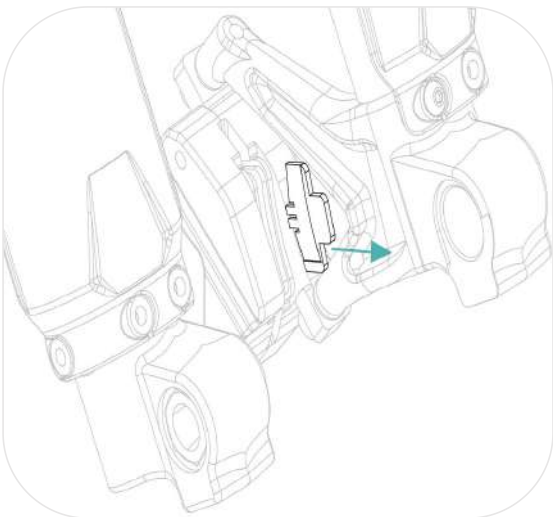


2. Install the front axle bushings on each side

Note: Do not crush the seal.



3. Remove the brake caliper clamping block, place the front wheel inside the fork, install the front axle so that it passes through the fork and the front wheel in turn, and fasten the front axle with two 8# Allen wrenches.



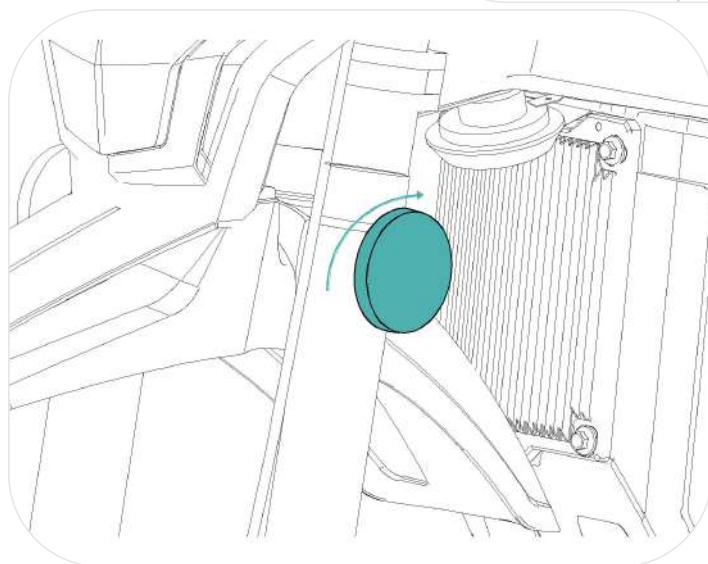
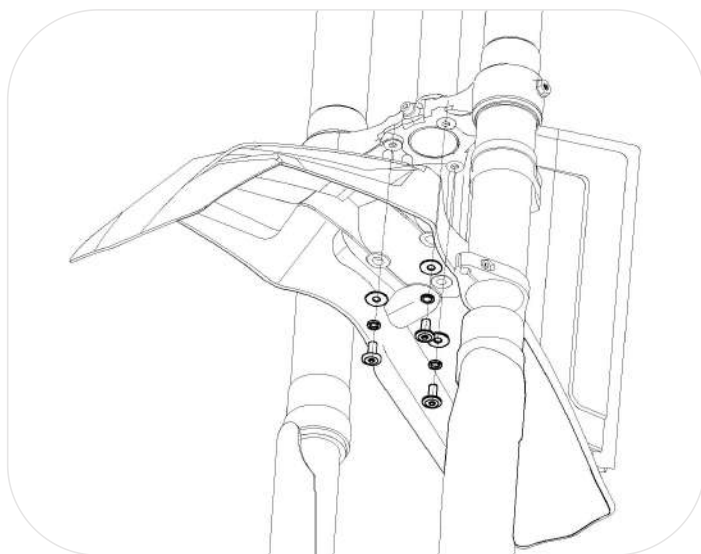
Note: 1. After removing the caliper clamping block, please do not pinch the front brake handle, pinching the front brake handle will cause the brake to clamp and it may be difficult to put the disc brake disc in.

2. When installing the front wheel, you need to pay attention to the fitment of the disc brake disc and caliper. After the installation is completed, make sure the front wheel rotates smoothly and there is no strange noise.

3. When installing the disc brake disc, add anaerobic adhesive to the threaded part (heat the threaded part when disassembling).

Installation of front mud fender

Secure the front fender to the lower coupling plate with 3 screws including flat pad and spring pad lock using 4# Allen wrench.



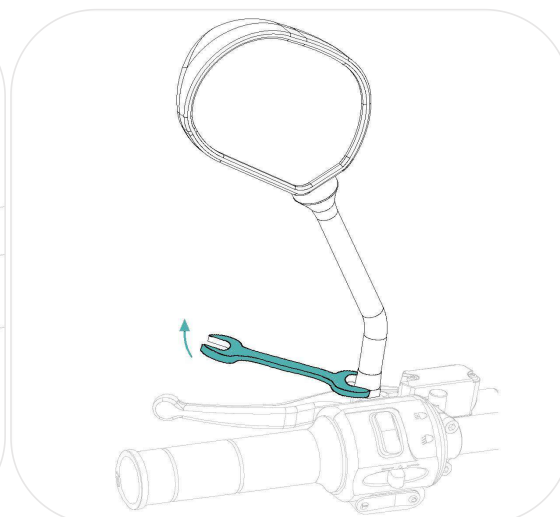
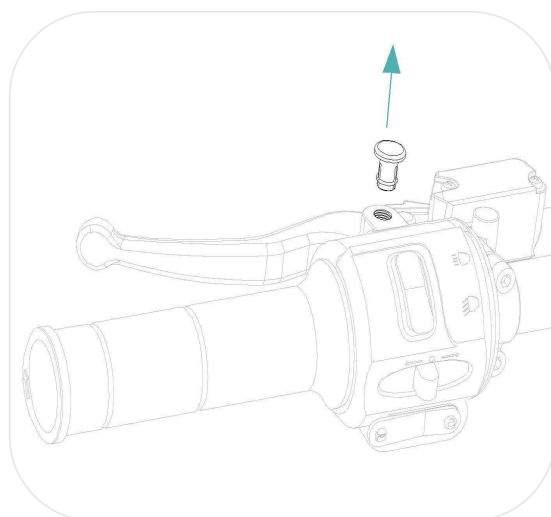
Installation of front reflector

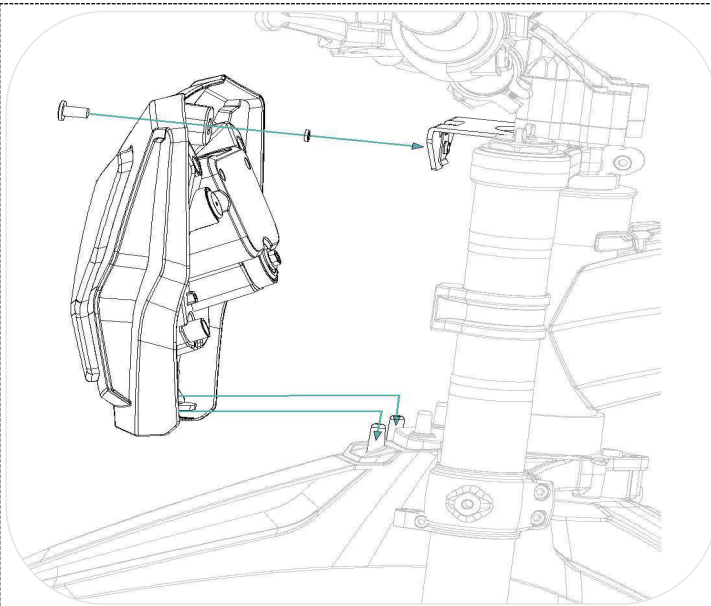
Install the front reflector on each side of the fork by turning clockwise.

Installation of rear view mirror

1. Pull out the plastic plug on the function switch holder.

2. Adjust the rearview mirror to the proper position and lock the nut with 14# open-end wrench.

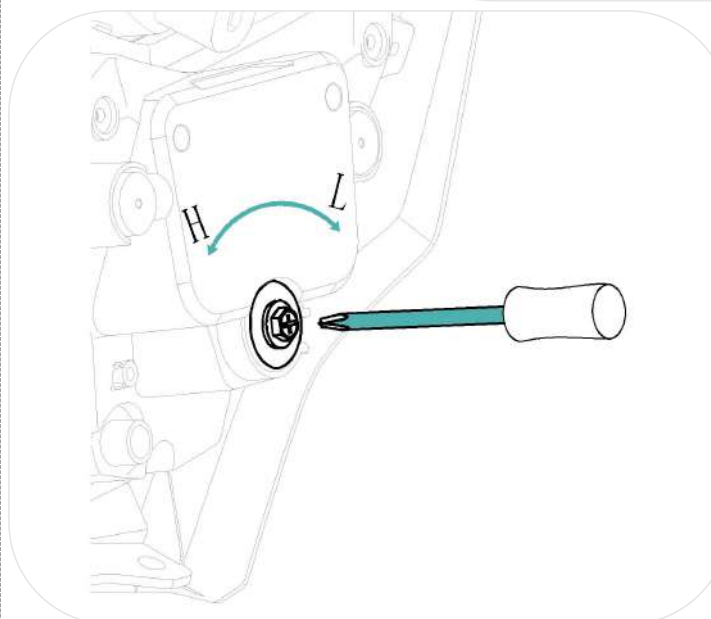
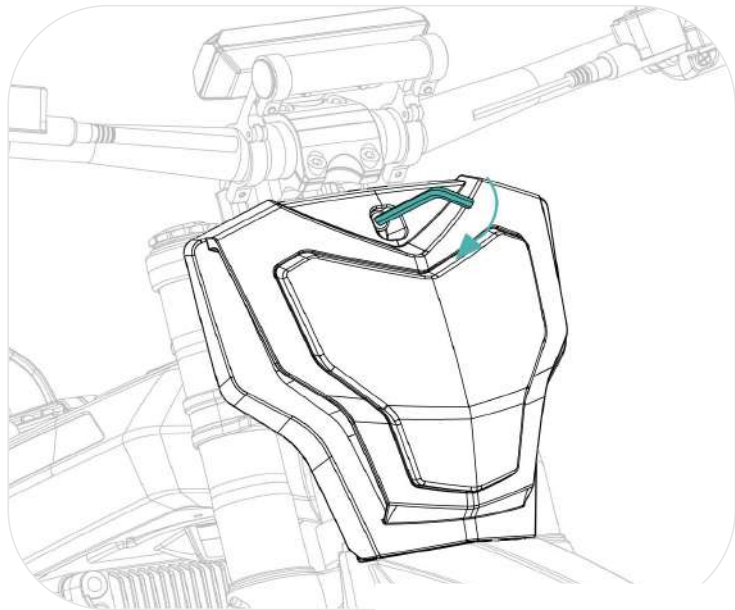




Installation of headlights

1. Place the headlight on the front fender positioning pin and add the adjustment spacer between the headlight and the bracket.

2. Adjust the position and tighten the middle fixing screw with 5# hexagonal wrench.



Headlight adjustment

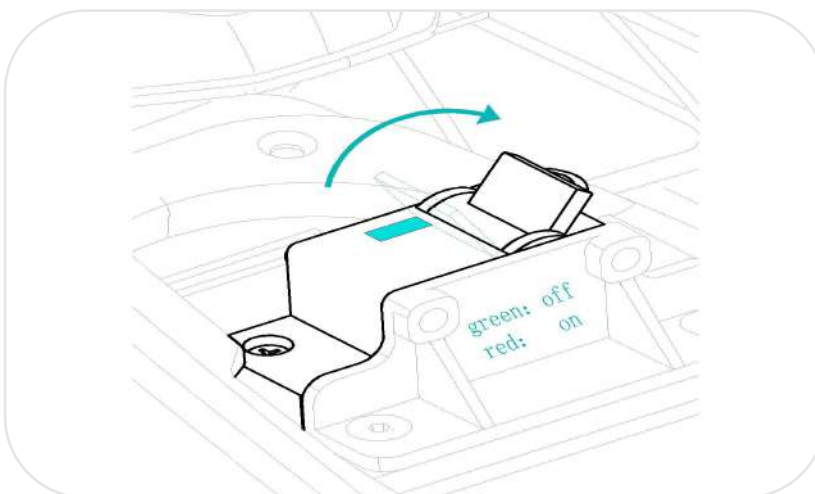
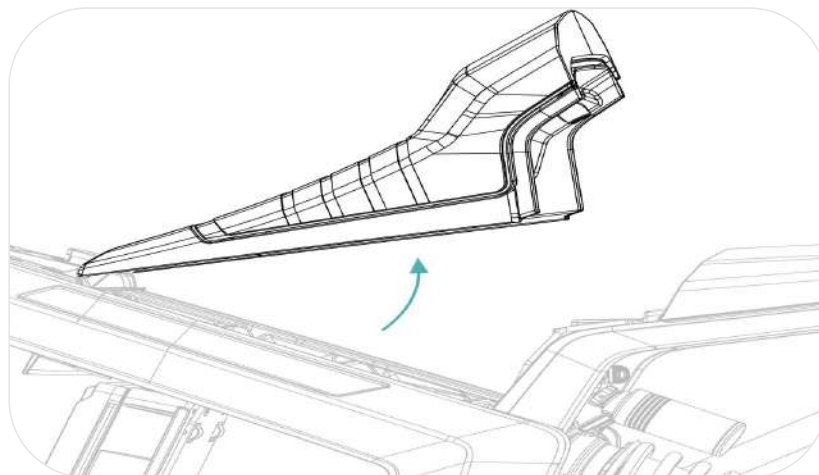
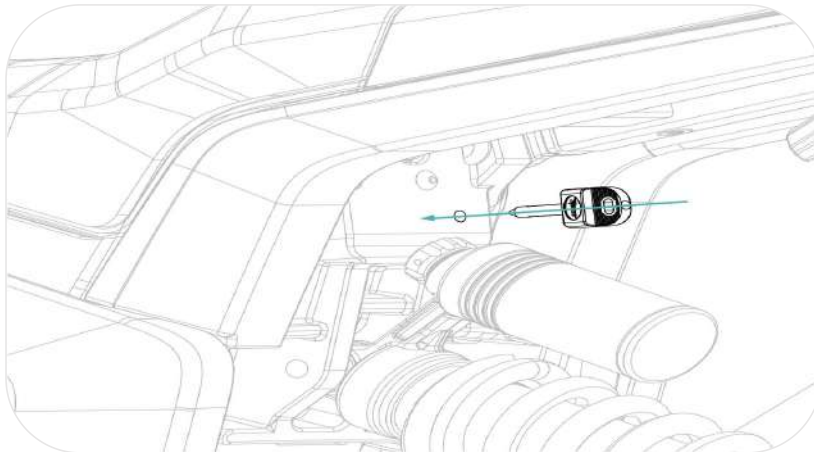
Adjust the light height by twisting the adjusting screw left and right with a Phillips screwdriver.

Note: Tighten the light clockwise to adjust the light lower.

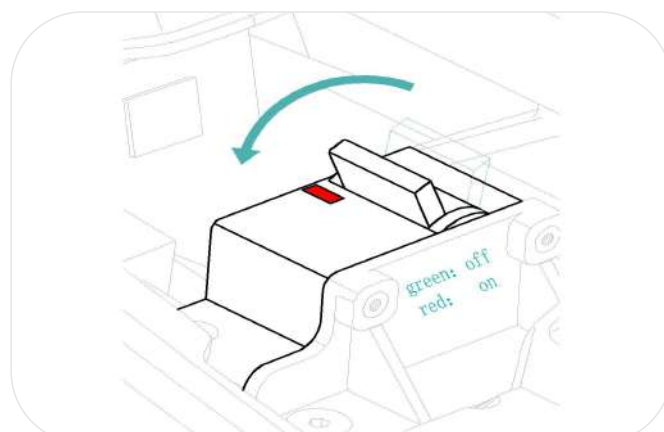
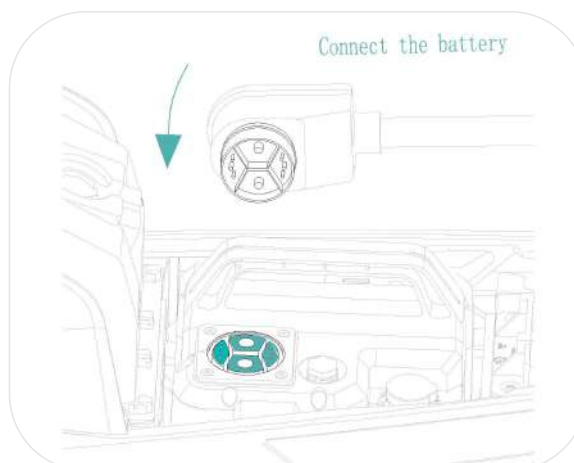
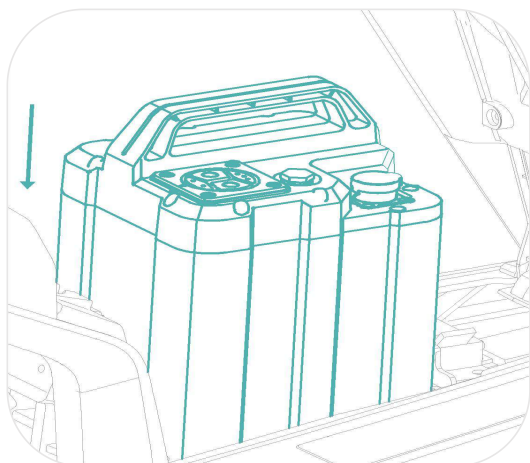
Counterclockwise tighten the light to adjust higher.

Installing the battery

1. Insert the key into the round hole under the rear cushion (this method is in the absence of battery or battery damage when the whole bike cannot be energized, and needs emergency treatment. Under normal circumstances, you only need to open the switch lock to energize the whole bike, press the cushion switch on the handlebar, you can open the cushion), open the front cushion, check the air switch to ensure that it is in the off state.



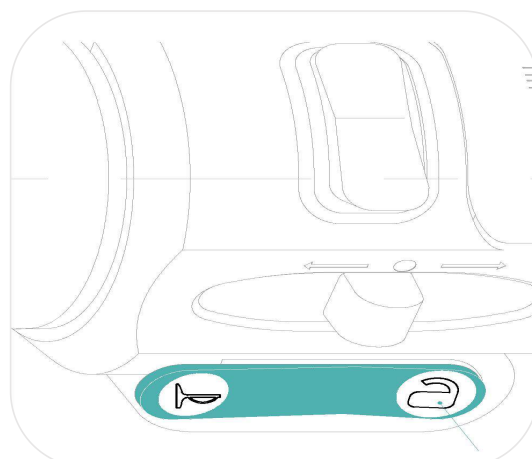
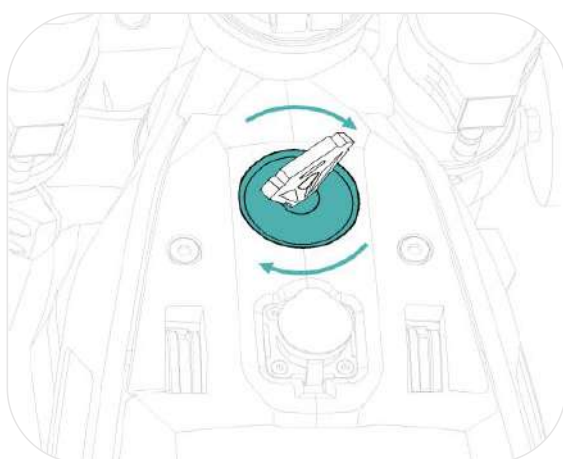
2. Battery charging port towards the right side of the frame, put into the battery compartment; install the discharge plug, open the air switch to the left, close the seat, and close the switch lock to remove the key.



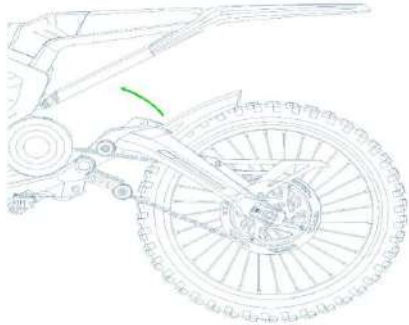
Open the cushion when the whole bike power on

1. Insert the key into the switch lock and turn it clockwise.

2. Press the seat cushion button on the left combination switch to open the seat cushion.

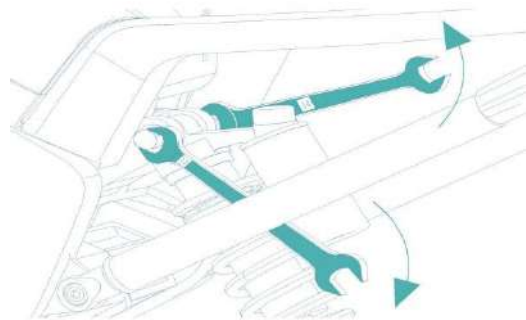


Rear shock mount

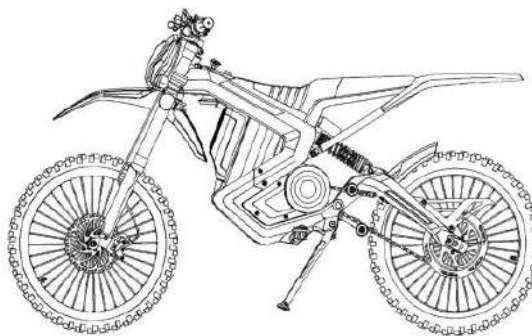


1. Lift the rear tailstock to reach the installation stroke of the rear shock absorber.

2. Align the front end of the shock absorber with the fixing hole slot of the frame, and screw in the fixing bolt from the left side to the bottom.



3. Align the shock absorber with the mounting hole slot of the frame, and the fixing bolt passes through the bottom from the left side. Coat the upper and lower damping nuts with thread sealant. 13 # open-end wrench is used for the left bolt, and 14 # open-end wrench is used for the right nut to lock.



Warning: The fixing nuts of shock absorbers shall be coated with thread sealant, and the bolts and nuts shall be locked with a tightening torque of 40-45N. m.

4、 Ride Preparation

Please ensure you have carefully read all the items in Chapter P01 (Safety Instructions) of this manual before riding and focus on the following items.

Check the front and rear tires:

1. Tires are in good condition, with no abnormalities.
2. Normal tire pressure is 200 ∞ 220Kpa. If the tire pressure is not enough, it will be abnormal wear, steering, low riding speed, short range; tire pressure is too high will lead to tire tread local abnormal wear, tire adhesion is reduced, riding comfort is reduced, and even a blowout, causing safety risks.

Check the LCD meter, horn, and brake:

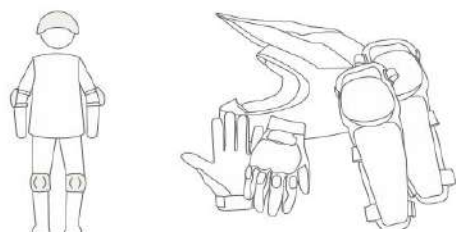
1. Check whether the function display of each part of the instrument is normal.
- 2、 Check whether the horn is working normally.
- 3、 Hold the front, and rear brake handles respectively, and check whether the front and rear brakes are braking normally and whether the front and rear wheels are working normally.

Check the handlebars:

The handlebars need to be tightened without wobbling, flexible steering, no interference, and no strange noise.

Shock absorber adjustment:

Shock absorber adjustment: Please adjust the front and rear shock absorbers to meet your riding needs according to the actual situation.



Warning: Please make sure to wear a helmet and other protective gear. For your safety, please choose a full-covered off-road helmet and off-road protective equipment.

The pictures are for reference only. Please take full safety precautions.

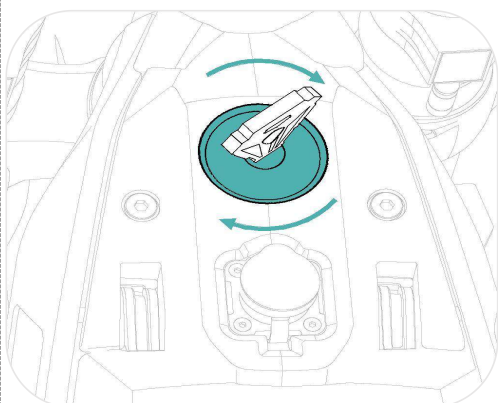
Please do not let other people who are not familiar with the dirt bike (All-Terrain Bike) ride.

It is dangerous to ride with one hand or with no hand. Riding after drinking or using drugs is extremely dangerous.

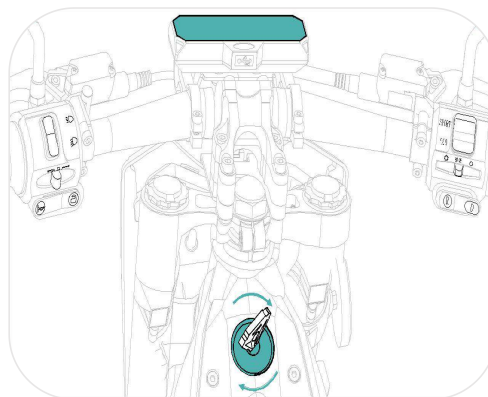
5、 Learn to Ride

Start

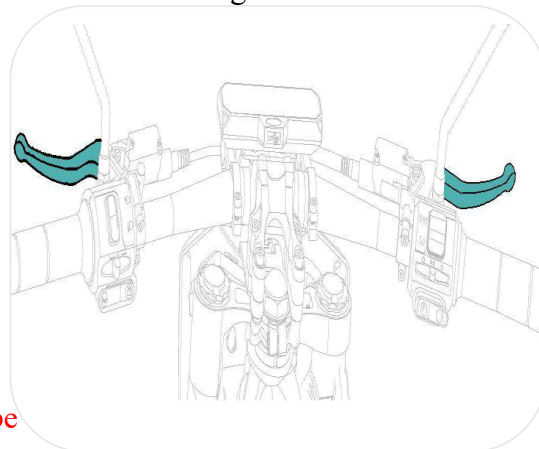
1. Insert the key into the electric lock hole and rotate clockwise to power it



2. Check whether the switches, instruments, horn, front and rear brakes are working properly.



3. Hold the front (rear) brake handle and release the P-gear bike function.



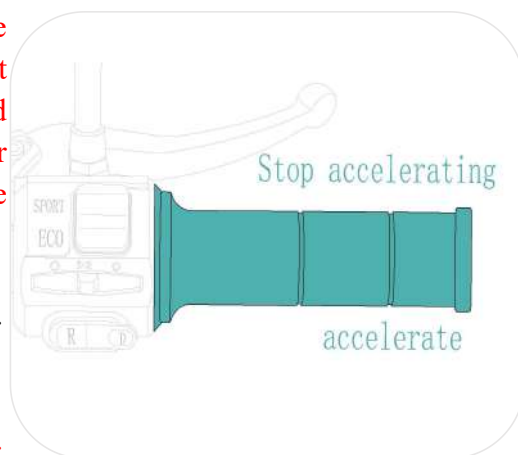
4. Before the vehicle starts: get on the bike and sit firmly, collect the side bracket.



Warning: Acceleration must be smooth and gentle. Do not over operate to avoid danger or damage to the dirt bike. Make sure first time riders use ECO mode. And only use SPORT mode after becoming fully familiar with the dirt bike.

5. Turn the speed control handle slowly, inward for acceleration, outward for stopping acceleration.

Note: You need to release the brake handle when accelerating, otherwise it will trigger the brake power-off function.





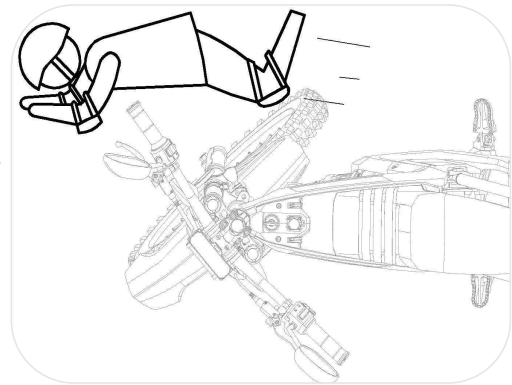
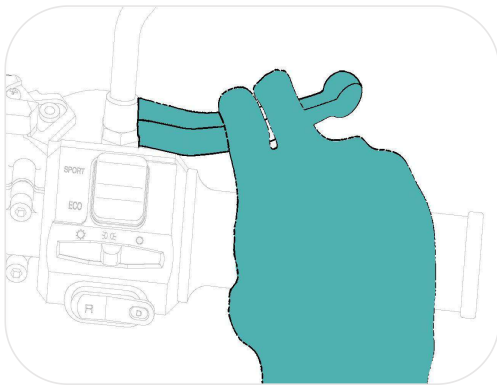
Warning: Please operate the brake handle according to the actual situation and gradually increase the force.

To prevent the wheel from locking and slipping and resulting in injury, do not grip it suddenly.

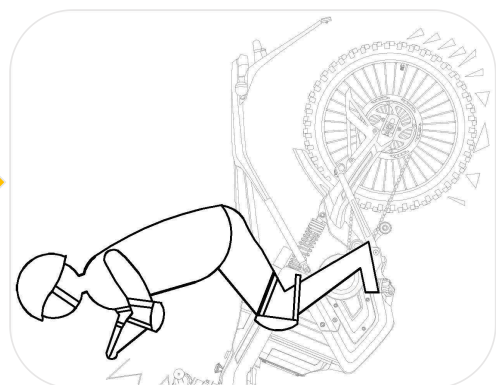
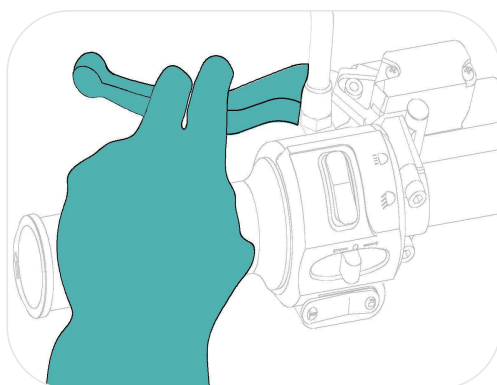
Try to prejudge and avoid sharp braking, hard steering, and other operations that can easily cause side slips and falls.

It is especially dangerous when the road is slippery in the rain.

Sudden squeezing of the front brake by the right hand while riding may lead to rollover.

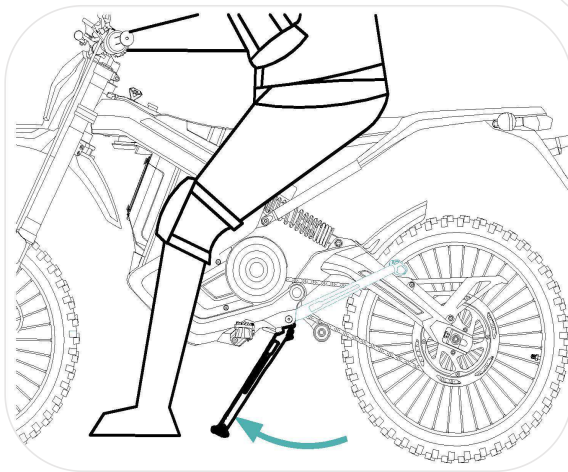
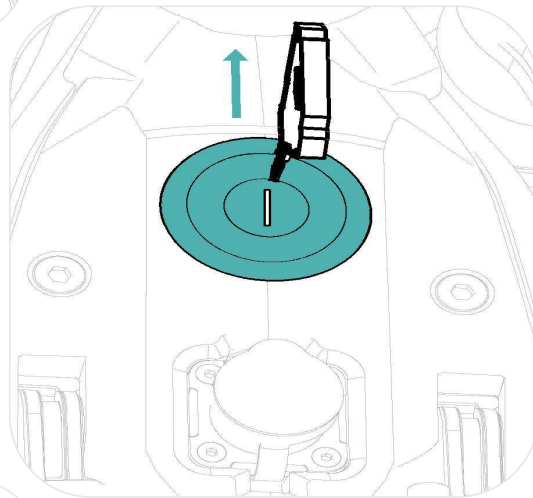
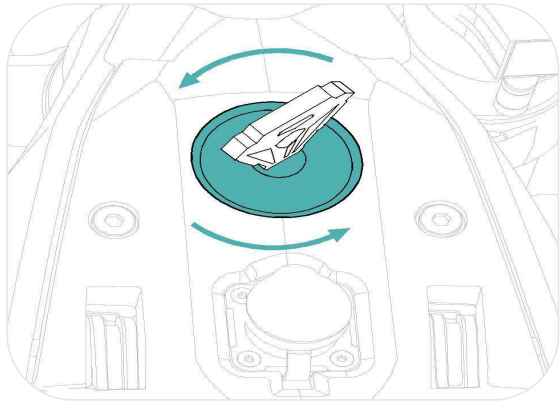


Sudden squeezing of the front brake by the right hand while riding may lead to rollover.



Parking

Pay attention to the road conditions and slow down to approach the parking place. After the body is stable, close the switch lock, and remove the key. Put the side bracket down to fix the vehicle.



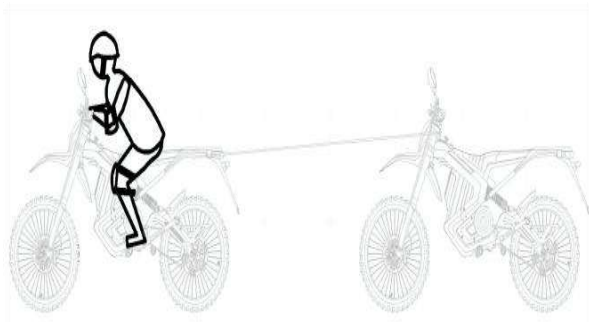
Warning: when parking (before leaving the dirt bike), please make sure to stand the side bracket, enter the P-gear parking function, and ensure the dirt bike has lost power to avoid touching the speed control handle and causing accidents.



Please do not attach or tow other vehicles or bikes.



Do not use cell phones, cameras, headphones, ear plugs, etc. when riding.



Ride slowly and carefully in complicated road conditions.



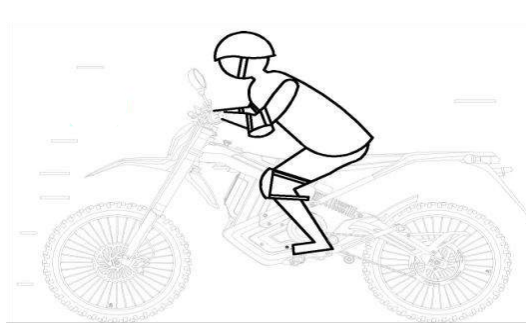
Do not drive in bad weather or when extremely tired. And do not wade deeply into the water, otherwise the battery will be damaged or cause personal injury.



Be sure to slow down before a sharp turn.



Please hold the handlebars with both hands and no speeding.



Safety hazards: pay attention to avoid them.
Do not use dangerous behaviors.
Do not ride after drinking.

6、 Vehicle use instructions

● P-gear parking function

- 1、 Enter P-gear parking at power-on.
- 2、 Automatically enter P-gear parking after the vehicle is stationary for 10 seconds.
- 3、 Enter P-gear parking when the side bracket is supported.

Note: Make sure the side bracket is open before you pinch the brake to lift the P-gear parking function!

● Vehicle "power off" (power on but lose power)

1. Brake power off: pinch the brake handle, and turn the speed control handle, which will have no power output.
2. Motor overheating protection.
3. Controller overheating protection.
4. Battery overheating and power reaches the under-voltage protection point.

● Vehicle power reduction

1. Controller overheating (when the working temperature exceeds 85 °C, begins to enter the derating process; each 1°increase will derate by 10%. If it continues overheating down to 20% of the rating, the power output will be cut off. It can be used again after the controller has cooled).
2. Motor overheating (when the working temperature exceeds 110°C, it starts to enter the derating process, each increase of 1°will increase derating by 10%. If continued overheating, down to 20% of the rating power output will be cut off. Wait for the motor to cool down, and then it can be used).
3. Voltage from 53V to start linear derating processing, each lower 1V, reduces the amount of 20%, the minimum drop to 15% of the rated.
4. When the power is zero, stop the power output. (If it is not charged in time to continue to be used, the battery may enter over-discharge protection.)

Note: After over-discharge protection, the battery needs to be charged and activated with the charger. For the activation method, see the P35 fault phenomenon, Article 7.

● About the environment during use

1. Using the sports gear is not recommended if the temperature is lower than 0°C ~ -20°C, the battery is equivalent to 80% of room temperature.
2. It is recommended not to ride at full power for a long time when the temperature is higher than 50°C.

● About water wading

The dirt bike (All-Terrain Bike) can occasionally wade (not more than 24cm / 9inches depth) but cannot spend too long soaking in water, especially if the motor is in a high-temperature state because the cooling of the water and internal air contraction, will lead to water being absorbed by the oil seal and cable position causing internal damage.

The following is the waterproof level of each component.

Battery: IP55

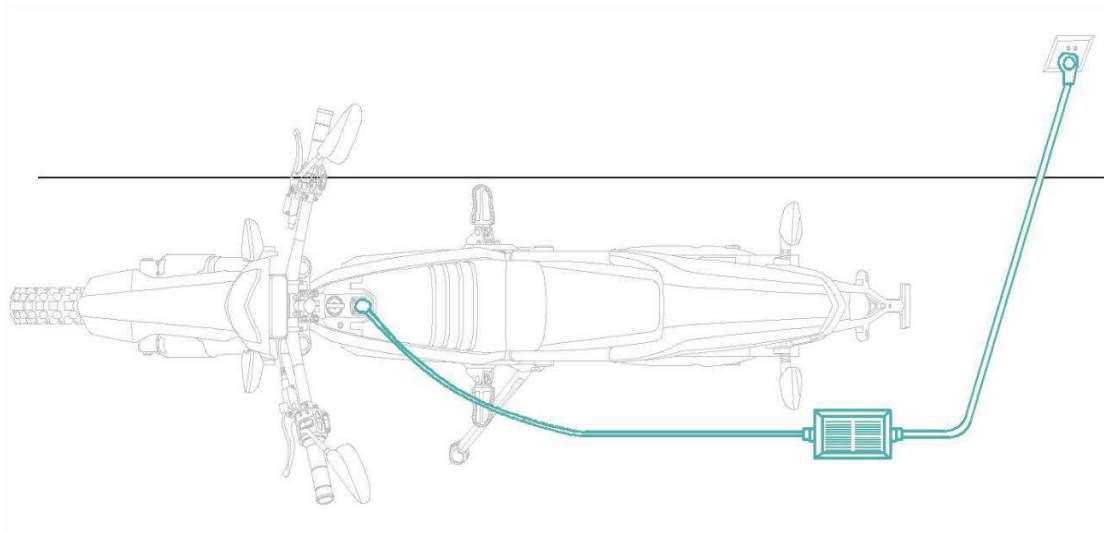
Motor, controller: IP67

Full vehicle connector: IP55

7、 How to Charge

Charging the whole dirt bike (All-Terrain Bike)

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



Warning: do not charge the battery below 31F, otherwise the battery will be damaged. Please wait for the battery temperature to rise before charging.

The correct use and maintenance of lithium batteries: abandoned lithium batteries must not be dismantled without permission. Abandoned batteries should be recycled in a relevant place.

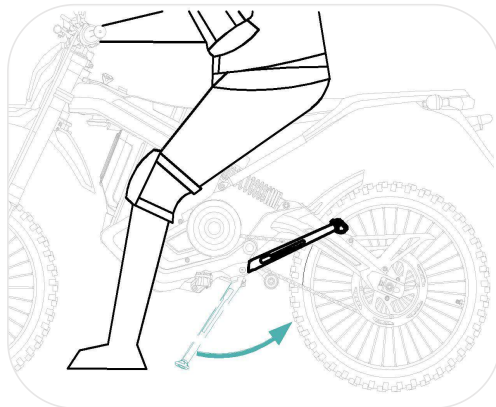
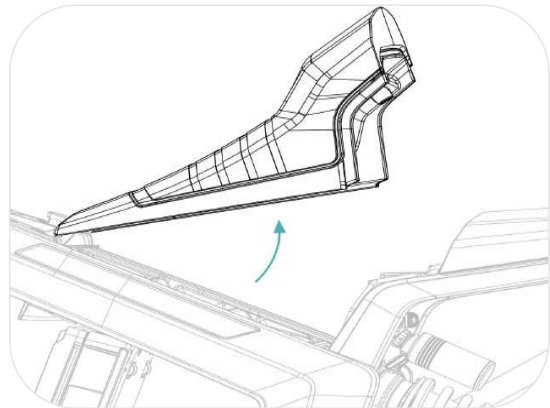
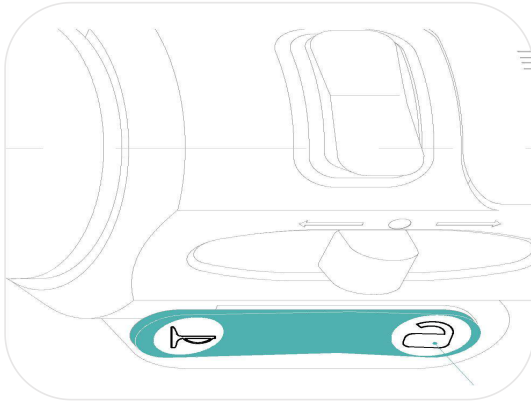
Turn off the air switch or unplug the charger when not using the dirt bike for over one month. Keep the battery fully charged.

When not charging, please fasten the charging sealing rubber cap.

Portable Charging

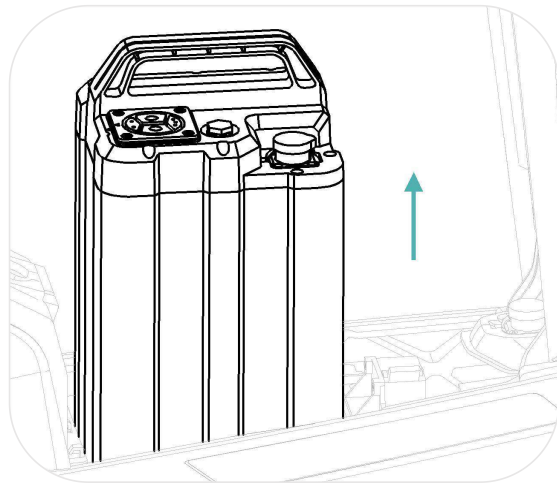
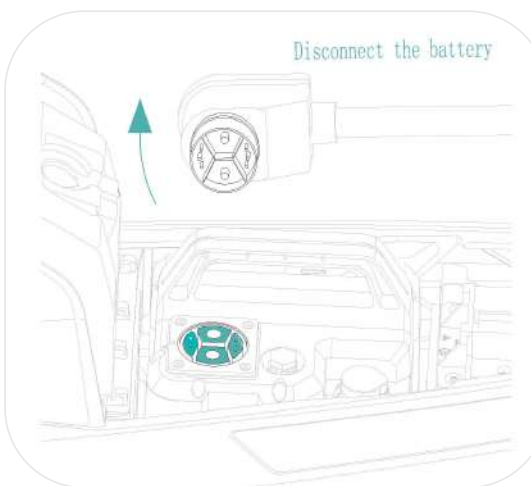
1、 Remove the battery

(1) Make sure the switch lock is in the open state, press the left combination function switch unlock button, open the seat and close the air switch.



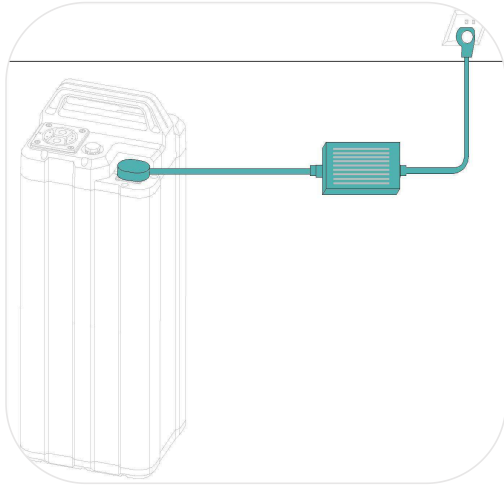
The picture is only a reference schematic, the actual product appearance and function may differ.

(2) Remove the discharge plug on the battery and pull upward to remove the battery.

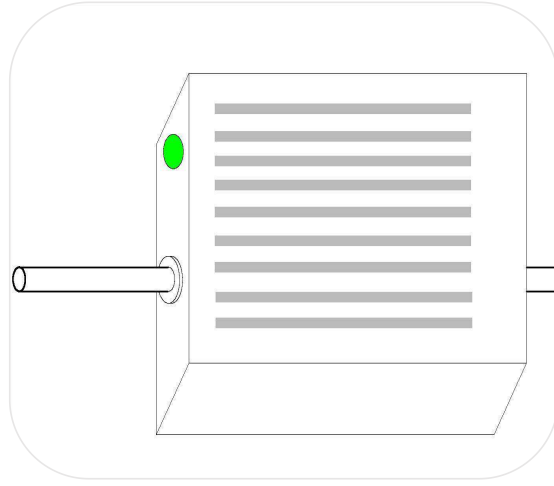


2、 Battery Charging

(1) Connect the output of the charger to the Li-ion battery charging port first, and then connect the other end to the power supply.



(2) The charger indicator flashes red to indicate that it is charging. When the power is full, the green light is always on; when the power is full, please power off in time.



About Charging

- Charge the electric dirt bike away from children.
- Do not place any objects on the charger. Use the charger in a dry and well-ventilated environment.
- If you smell an odor or find the temperature is too high during charging, please stop charging immediately, or if it still does not show full for a long time, please send it to the repair office for servicing.



Warning: Please be sure to use the authorized lithium battery charger for this dirt bike. When replacing the charger, please use an OEM charger.

Turn off the motor and switch before installing or removing the battery. Plugging in with the electricity on will affect the life of the battery.

There is a risk of ignition when the battery plug is not inserted with the switch open, which can easily lead to damage to the plug or

8、Dirt bike (All-Terrain Bike) Parameters Table

	Item	Parameter	
Basic Information	Brand	RAWRR	
	Overall vehicle size (L*W*H)	1935*795*1200mm	
	Overall vehicle weight (including battery weight)	60V/74Kg	72V/76Kg
	Maximum load capacity	100Kg	
Major Parameters of the Dirt Bike	Wheelbase	1290mm	
	Seat height	850mm	
	Min. ground clearance	310mm	
	Max. speed	80Km/h	
	Max. power	7.5Kw	
	Full charge range	60V Average Speed 25Km/h \geq 120km	72V Average Speed 25Km/h \geq 144km
	Protection class	IP65	
Body System	Body type	Double-beam forged aluminum alloy	
	Wheel type	Spoke rim-aluminum alloy 19*1.6	
	Front tire type	Off-road tire 70/100-19	
	Rear tire type	Off-road tire 80/100-19	
	Drivetrain	428H chain 108 links	
	Front brakes	203mm 4-piston hydraulic disc type	
	Rear brakes	203mm 4-piston hydraulic disc type	
	Suspension system	Double-shoulder front fork-travel 220mm Adjustable external airbag hydraulic shock absorber-travel 75mm	
Motor	Rated power	3800W	
	Rated torque	10N.m	
	Rated speed	3800r/min	
	Climbing angle	100% slope	
	Cooling method	Natural cooling	
Controller	Control scheme	FOC sine wave vector control	
	Rated input voltage	60V	72V
	Rated output current	85AH	71Ah
	Operating ambient temperature	-20~+65	
	Undervoltage protection value	49V	59V

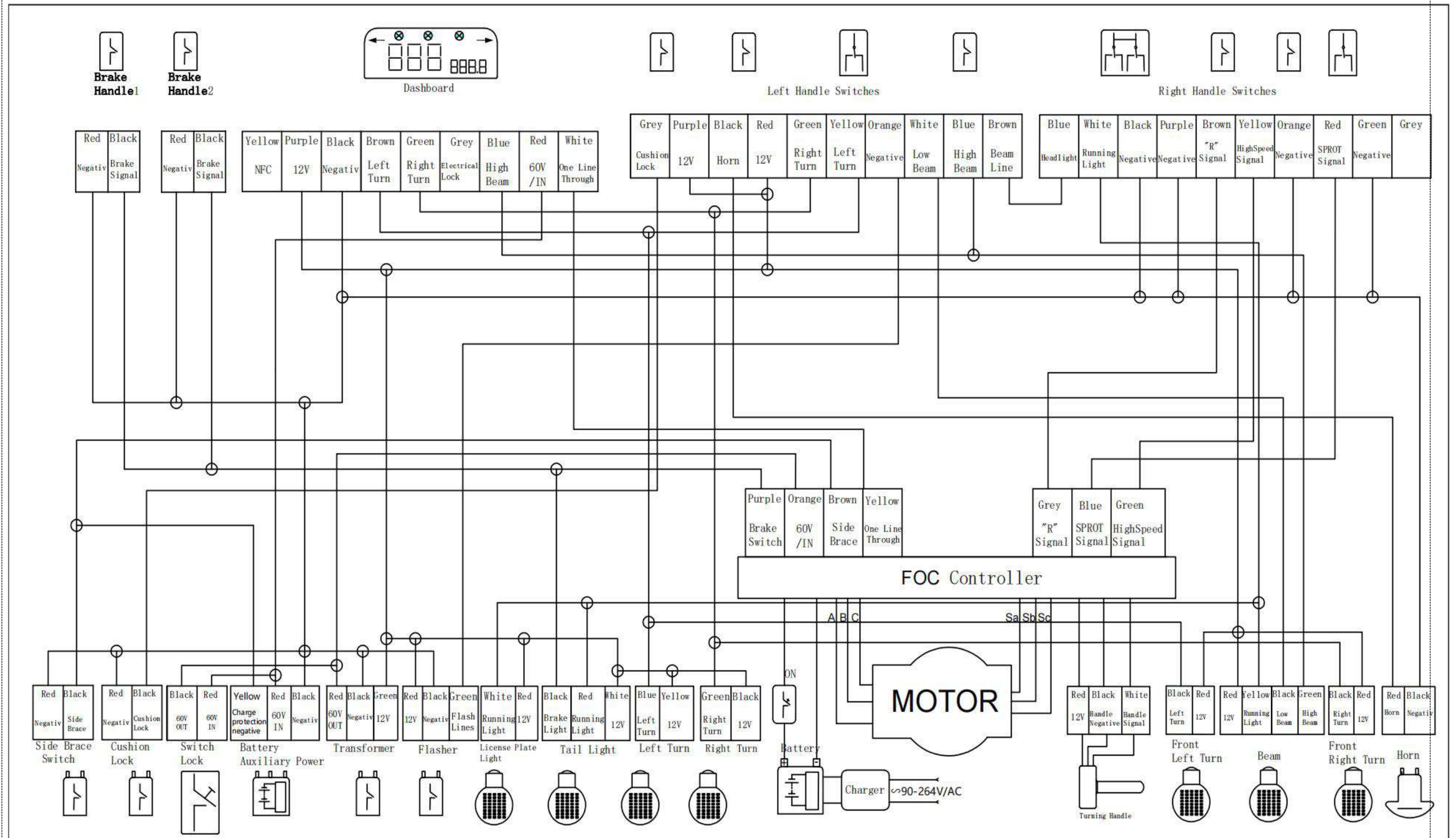
Charger	Charger type	Lithium charger	
	Rated output voltage	60V	72V
	Input voltage	100~264VAC 50/60HZ	100~264VAC 50/60HZ
	Output voltage	67.2V	84V
	Output current	6A	6A
Other	Handlebar specifications	Φ22~Φ32 reducer goose handle	
	Communication port	CAN / One line through	
	Lamp system	LED	
	Instrument type	VA black and white	
	Cell phone charging port	USB-5V standard interface 1000mA	

Note: The range may vary greatly depending on the testing environment. The data is measured with the cyclist weighing 220lbs and ambient temperature 80 F.

9、 Other Notes

1. RAWRR is committed to continuously improving the performance of its products, and product specifications and manual content may change without notice. Please understand! If there is any difference between the icons and pictures in the manual and the actual product, please refer to the actual product.
2. RAWRR reserves the right to interpret and explain this product statement to the extent permitted by law.
3. If you ever want to resell or transfer your RAWRR dirt bike, please do not forget to forward this manual with it, as it is part of the product. If you have any questions about RAWRR, we will be glad to serve you at any time. Thank you again for your choice and trust in this product.

Annexes (Dirt Bike Electrical Schematic)



Electrical Schematic

Controller Alarm Code List

Alarm Code (Buzzer Beep)	Fault Name	Protective Action	Reason
1 (1 short)	Software overcurrent	Shutdown	Current exceeds predetermined limit
2 (2 short)	Motor over speed	Shutdown	Motor speed exceeds predetermined limit
3 (3 short)	Battery over-voltage	Shutdown	Battery cell exceeds predetermined limit
4 (4 short)	KEY power abnormality	Shutdown	Key voltage exceeds the set range
4 (5 short)	12V power supply abnormality	Shutdown	Auxiliary current output exceeds the set range
6 (6 short)	5V power supply abnormality	Shutdown	5V voltage out of setting range
7 (7 short)	Angle sensor disconnection	Shutdown	Motor angle sensor signal abnormal
8 (8 short)	Hardware overcurrent	Shutdown	Current exceeds the hardware protection range
9 (9 short)	Current closed loop failure	Shutdown	Motor phase wire not connected or controller damaged
10 (1 long)	Battery undervoltage	Frequency reduction	Battery voltage is below the predetermined range
11 (1 long 1 short)	Controller over temperature	Frequency reduction	Controller temperature exceeds predetermined limit
12 (1 long 2 short)	Motor overtemperature	Frequency reduction	Motor temperature exceeds predetermined range
13 (1 long 3 short)	Current sensor abnormal	Shutdown	Current sensor signal interfered with
14 (1 long 4 short)	Angle signal interference	Shutdown	Angle sensor signal is disturbed
15 (1 long 5 short)	Turnbuckle signal over limit	Shutdown	Toggle signal input exceeds predetermined limit
16 (1 long 6 short)	Turnbuckle not reset	Shutdown	Power-on toggle not in zero position
17 (1 long 7 short)	Motor blocking	Frequency reduction	Motor blockage exceeds predetermined protection time
18 (1 long 8 short)	BMS failure	Shutdown	Battery internal abnormality
19 (1 long 9 short)	BMS communication disconnection	Shutdown	BMS communication is not connected

10、 Fault phenomena and solutions

No	Item	Cause of failure	Troubleshooting method
1	Turn on the power and the motor does not work	1. Battery connection wire is loose 2. The speed control connector is off 3. Motor wiring is loose or disconnected 4. Brake handle does not return, or brake switch failure	1. Check whether the connection line is connected firmly 2. Repair the plug to connect firmly 3. Reconnect and tighten the repair place 4. Check the brake handle and brake switch
2	The speed regulation is not working, or the maximum speed is low	1. Battery voltage is too low 2. Speed control handle failure	1. Fully charge the battery 2. Replace the speed control at the maintenance service
3	The range of one charge is not enough	1. Insufficient tire pressure 2. Insufficient charging or charger failure 3. Improper brake adjustment, riding resistance is too high 4. Battery aging or damaged 5. Uphill more headwind frequent acceleration and deceleration load	1. Tires inflated to the appropriate air pressure 2. Charge enough or check the charger plug contact 3. Readjust the brake 4. Replace the battery 5. The use of the environment to reduce the range of the normal phenomenon
4	Charger does not charge	1. Charger plug off or loose connection 2. Battery pack connection cable plug loose	1. Insert the plug or plug-in to open the battery compartment of the seat cushion and insert the plug tightly 2. Open the battery of the seat cushion, and insert the plug tightly
5	Cushion does not open	1、 No battery or battery damage. The whole bike cannot be powered on the case 2、 Cushion lock failure	1. Use the Emergency key to open the lock 2. Repair the aftermarket to replace the cushion lock

6	Abnormal rattling from dirt bike (All-Terrain Bike) body during riding	1.Unreasonable chain tightness 2.Tire deflection	1.Adjust the chain tightness 2.Adjust the left and right jacks to center the tires
7	After connecting the power supply, the charger does not work normally, and the power meter does not show the power level	Battery over-discharge protection due to a long time without charging, or improper battery storage	Connect the charger's output to the battery charging port, connect the input plug of the charger to the utility grid, then long-press the battery power meter button for 1S. Then the battery will enter the forced activation charging mode after the battery power meter lights up, the battery will enter the normal charging state
8	The brake does not work	Friction pads worn	Replace friction pads
9	Other faults	1. When you encounter a fault that you cannot eliminate by yourself under the above guidance or a fault that cannot be determined 2. Motor, controller, charger, battery damage	Please contact the supplier or repair station if you encounter the above situation. Do not open the above parts without permission. Otherwise, you will lose the company's warranty commitment

11、Maintenance Guide

In principle, with normal riding, you can do the first check at 10~30Km (can also be understood as the first warranty).

Inspection content.

1. front and rear wheel wire spokes tightness.
2. whether there is a gap in the front steering column bearing.
3. chain tightness check.
4. Tension wheel check (whether the chain is in the tension wheel guide groove).
5. Check whether the shock absorber is leaking oil and whether the compression and rebounds are in the correct position; (Note: Do not screw the adjustment knob to the left or right in the adjustment process).
6. Check the tightness of the screws fixing the handlebars.

Special Note: Be sure to turn the power off before starting any maintenance.

Pay full attention to safety when checking.

1. choose a wide and flat place and park the vehicle.
2. when it is necessary to drive for the inspection, do it in a safe place while paying attention to the surrounding environment and situation.
3. If the inspection finds any abnormality, please only drive after eliminating the abnormality, and if you cannot solve the problem by yourself, please contact the after-sales service or designated authorized service outlet.

Note

1. front and rear brakes are disc brakes. The brake friction pad should be replaced before it becomes seriously worn.
2. Pay attention to the cleanliness of the disc brake system in daily use to avoid prolonged adhesion of mud and sand, especially to avoid oil pollution.

Inspection of operating parts

1. Check if the shock absorber is bent, deformed, or damaged.

If the front shock absorber is damaged or leaking oil, shake the handlebar up and down to check if the front shock absorber causes any abnormal sound.

2. Brake inspection

Check whether the free gap of the brake handle is within the specified range (15~30mm), and adjust it if it does not meet the requirement after measurement.

3. Inspection of braking effect

Please check the braking effect by riding at low speed on a dry and flat road, and use the front and rear brakes separately.

4. Inspection of tires, spokes, tensioning wheels, and chains

The tires of your dirt bike (All-Terrain Bike) are in contact with the ground for a long time, and foreign objects such as stones, glass, and nails on the ground can cause damage to your tires, so you should pay attention to the road when riding and avoid riding in places that may damage your tires. In addition, you should always check whether the tires have obvious cracks and other damage, whether they are embedded with stones, glass, and other foreign objects, and whether there is unreasonable and abnormal wear.

1. check the air pressure with a tire pressure gauge while the tires are cool.

5. check for cracks, damage, and abnormal wear.

6. check whether the wheel rim spokes are loose.

7. Check the tension of the chain. Chain up and down range 10~20mm;

8. Check the depth of tire grooves

Check the tire wear, check the groove depth, and replace the tire when the wear amount reaches 2/3 of the bump. When there is a strange noise or fluttering in the tire ride, please contact the aftermarket or designated authorized outlets to check and repair.

Recommended: rear axle nut locking torque 40N.m, front axle nut locking torque depends on the front fork.

Note: Hold the brake handle tightly. If it still cannot give the ideal braking effect, check the disc brake pad cleanliness and thickness size. If it still cannot be solved, please contact the authorized service outlet for after-sales inspection.

Battery check

1. Check the power

The bike uses a sealed ternary lithium battery. Check the battery needs to be full, and then use a multimeter to measure the positive and negative voltage of the electric port. The full voltage should be between 66.2 ~ 67.2V for normal operation.

2. Check the appearance of the battery

Check if it is damaged. For example, if the battery's upper and lower sealing covers and power indicator break, it will lead to the risk of water after the seal failure. Then please contact the aftermarket or designated authorized service outlets.

Note.

1. close the switch lock and air switch before taking and installing the battery, cover the charging port sealing rubber cap.
2. If you find that the battery cannot be put into the battery compartment, please do not force it in. Remove the battery to check whether the battery is stuck due to foreign objects.
3. winter battery storage, it is recommended that the battery is stored indoors, with temperature conditions above 0 °C. Also, regularly check the power.

Battery charging and charger use

1. The dirt bike must be charged with the original model compatible charger. Do not use other models that do not match the charger so as not to damage the battery or be dangerous.
2. Check whether the charger input voltage is consistent with the grid voltage.
3. The charger will automatically turn off when it is fully charged, but try to avoid

connecting the charger to the grid for a long time. The maximum time after a full charge should not exceed 6 hours.

4. It is strictly forbidden for users to disassemble the battery to avoid damage and danger.
5. When the battery over-discharged protection has occurred, it needs to be activated by charging with the charger. The activation method is described in P35 (fault phenomenon and troubleshooting method), Article 7.
6. Use and maintenance of electrical appliances
 - 1) regularly check the motor fixing screws for looseness.
 - 2) regularly check the motor and controller wiring for looseness and insulation condition.
 - 3) periodically check whether the air switch wiring is loose.
 - 4) Do not drive in water that is too deep so as not to affect the brake friction life and motor working

Note: When the motor temperature or controller temperature is too high, or the battery power is too low, the dirt bike (All-Terrain Bike) will automatically reduce power operation, which is not a fault.

Maintenance and repair of motor

Use

1. During operation, if the controller does not work properly, the dirt bike (All-Terrain Bike) cannot be started directly.
2. During operation, there should be no intermittent or abnormal sound or vibration.
3. During operation, if the gear oil is not filled (fill GL-4 85W-90 oil, about 100mL), the dirt bike (All-Terrain Bike) should not be started directly.

Maintenance

The first maintenance is performed on the assembly when the new dirt bike has ridden about 1000 km. During the first maintenance, the gear oil of the reducer should be replaced. Iron chips adsorbed on the oil drain screw plug should be cleaned up, and the residual iron chips in the reducer should be cleaned up. The dust and foreign matter around the ventilation plug should be cleaned up and kept clear. Then the signals and bolts of the sensors should be checked for tightening.

After the first maintenance, implement maintenance inspection on the assembly according to the maintenance requirements of the whole dirt bike (All-Terrain Bike), as follows.

- a. Check the motor sensor signals, and replace them in time if broken or damaged signal lines are found.
- b. Check the suspension of the assembly and whether the fastening bolts of each part are loose. If they are loose, they should be tightened immediately.
- c. Check the assembly's sealing surface and oil seal, and replace the damaged oil seal in time to ensure the sealing performance of the assembly.
- d. Clean the foreign matter around the vent plug and keep the vent plug open.
- e. Replace the gear oil every three months or 5,000 km (whichever comes first) according to the riding conditions of the dirt bike (All-Terrain Bike), and clean up the iron filings.

12、 Warranty Policy

RAWRR dirt bike after-sales service

Specific services are as follows:

Warranty rules.

One-year warranty for the entire dirt bike (All-Terrain Bike): including motor, controller, battery and charger, and other difficult-to-damage parts; non-human damage performance failure, can enjoy free repair. Refer to this manual.

If there is no quality problem, do not support the return of goods for exchange. If the occurrence of functional failure or commodity quality problems, the company designated authorized service outlets to test and confirm that the issue belongs to the quality of non-human caused by the commodity quality problems. Can choose to return or have the goods exchanged.

Warranty start date.

Offline purchase users to the invoice date purchase voucher date shall prevail (calculated from the date of the first occurrence); online purchase users to the date of the sign-off sheet shall prevail (calculated from the date of the customer sign-off raw). The delivery sign-off sheet and purchase invoice are valid vouchers. If there is no voucher or a scribbled voucher is unclear, the system record of the date of sale shall prevail.

13、Regular Maintenance Record Card

Regular Maintenance Record Card		
Maintenance period	Maintenance requirements	Maintenance Person/unit seal
300Km/1 month	Whole dirt bike (All-Terrain Bike) fasteners, check chain, tension wheel tensioning check (motor, brake, spokes, etc.)	
1000Km/3 months after the first warranty	Whole dirt bike (All-Terrain Bike) safety parts fastening inspection, high current circuit inspection, chain and tension wheel tensioning degree inspection motor, brake, spokes, etc.	
2000Km/6 months	High-current circuit check, brake oil circuit check, brake pad check, spoke chain and tensioner wheel tensioning course magnetic check	

Note:


1. The user must process the mandatory maintenance projects described in the "Regular Maintenance Record Card" in the designated authorized service outlets on time.
2. Failure to carry out maintenance on time may result in voiding the warranty.

Maintenance Record Card

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