

Please read this operation manual carefully.
Do not use the vehicle until you have a full
understanding of its performance.
Please keep the operation manual properly.

DH-24 (IFOX) Model User Manual First Edition 2022

Thank you for using the DH-24 Vehicle, it is the crystallization of the rich experience of "Doohan" in sports, tourism, and intelligent performance. It represents a high degree of technology and reliability, but also makes Doohan Vehicle being the pioneers in this field.

Driving safely is the most important point that Doohan considers. For your and others' safety, please read this product manual carefully before driving.

This manual will explain to you: how to operate, inspect and maintain the DH-24 Vehicle. If you have any questions about the operation or maintenance of this Vehicle, please consult Doohan dealers.

**If you are Doohan Dealers, you should inform users of the following:
vehicles are monorail, and driving such vehicles requires certain driving skills
and relevant locomotive knowledge.**

Drivers should know:

- Proficient in the control of various parts of electric vehicles.
- Pay attention to the warning and maintenance related information in the manual.
- Through the manual, you can solve some simple basic problems of vehicle.

Caution:

- **This manual should be regarded as a permanent part of this vehicle and should be kept for a long time.**
- **Doohan seeks continuous improvement in product design and quality. Although this manual contains the latest product information, there may be some slight differences between your vehicle and this manual. If you have any questions about this manual, please consult Doohan dealers.**

Warning:

- **Please read this manual carefully and operate your vehicle until you already have proper riding skills.**
- **Please check and maintain regularly, and having good riding skills will ensure that you can safely control the vehicle.**

DH-24 (IFOX)

User Manual

First Edition 2022

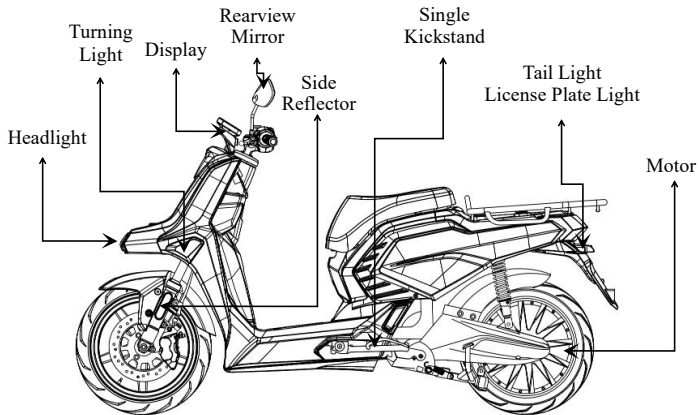
CONTENTS

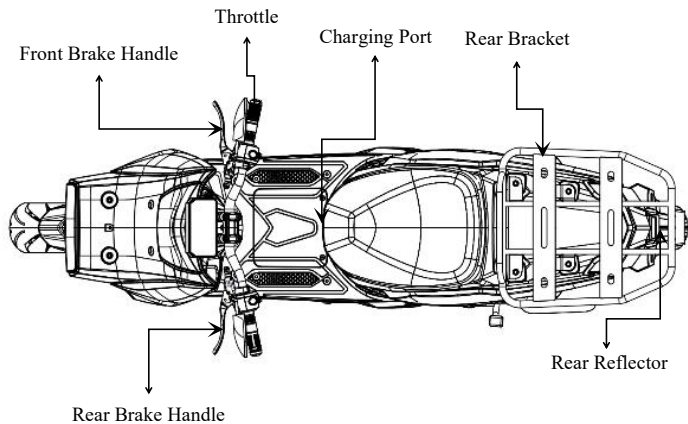
Instructions.....	1-1
Description of Parts.....	2-2
Vehicle Identification.....	3-1
Main Technical Parameters.....	4-3
Instructions for Use.....	5-22
Daily Inspection and Adjustment.....	6-6
Maintenance and Repair.....	7-4
Common Faults and Troubleshooting Methods.....	8-3
Vehicle Storage.....	9-2
Wiring Diagram.....	10-1

1. Instructions

- When the front and rear tire pressure of the vehicle is normal (225KPa), the maximum total mass of the vehicle is 229KG (including the weight of sundries and goods carried by the vehicle and the weight of the driver and the passenger) which can limit load two people.
- The storage facilities such as toolboxes, storage boxes and hooks of the vehicle can only place light items. All objects installed on the vehicle should be fastened first to prevent them from loosening and falling during driving.
- The vehicle should be driven on the flat road. Although it can be driven normally in rainy and snowy weather, it should not wade. When the water level reaches the pedal, it may cause water ingress or failure of the motor, battery, or other components.
- Based on safety considerations, you should slow down when driving to rainy and snowy days and slippery roads; pay attention to increasing the braking distance when braking to ensure your own safety.
- Please do not disassemble the vehicle parts by yourself, Doohan will not be responsible for the resulting losses.

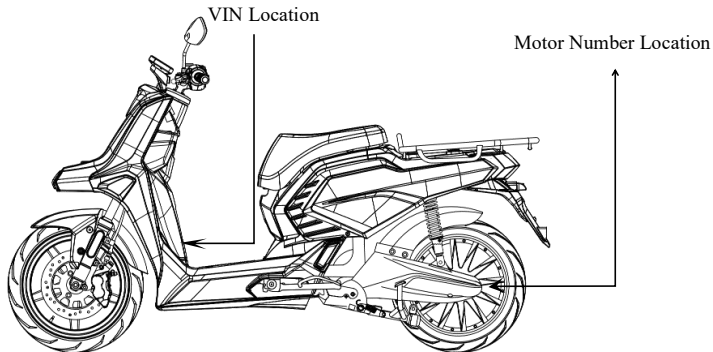
2. Description of Parts





3. Vehicle Identification

When registering or obtaining a driving license and annual inspection of a vehicle, it is necessary to report the Vehicle Identification Number(VIN) and the Motor Number. The above number is also required for warranty services, so the above number should be prepared for reference. Product name plate rivets are on the right side mounting plate of the vehicle.



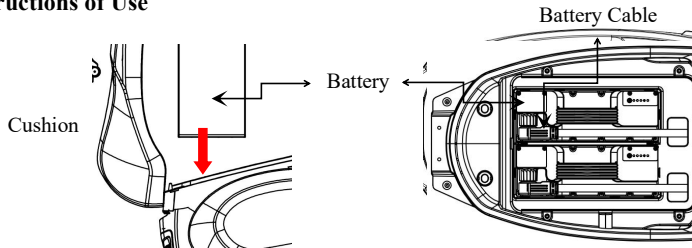
4. Main Technical Parameters

Main Size			
Length	1950mm	Width	730mm
Height	1100mm	Wheelbase	1400mm
Main Performance			
Type	45km/h	Total Mass (kg)	229
Curb Weight (kg)	83 (without battery)	Number of Rider	1 people
Rated Voltage (V)	72	Climbing ability	12°
Max Speed (km/h)	45	Design Range (km)	83
Frame			
Front Shock	Straight cylinder, hydraulic damping type		
Rear Shock	Outer spring, hydraulic damping type		
Front Tire Size	90/90-12		
Rear Tire Size	120/70-12		
Front Brake	220mm disc		
Rear Brake	190mm disc		

Seat Height	855mm crotch position		
Battery System			
Type	45km/h	Standard Charging Current	10A
Battery Type	18650 lithium battery	Max Discontinuous Discharge Current	75A
Voltage	72V	Standard Charging Time	3H
Capacity	29AH	Battery Weight (kg)	12
Charge and Discharge Times	600 times		
Battery Temperature Range	-20°C to 60°C		
Battery Storage Temperature Range	-20°C to 60°C		

Battery Charging Temperature Range	0°C to 45°C
Battery Protection System	Over-discharge protection, short-circuit protection, temperature protection, over-charge protection, over-current protection, battery balance protection
Battery Compartment Cover Material	Aluminum Plate
Other Items	
Headlight	LED
USB Charging Port	5V, 1A

5. Instructions of Use



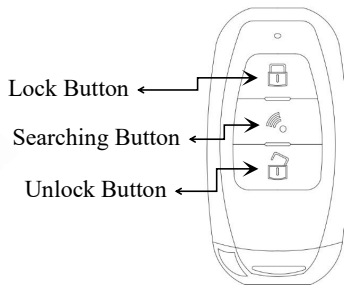
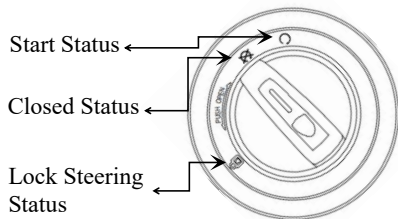
● **Cushion Open Operation:**

First, insert the key into the ignition lock on the right side of the vehicle storage function area, and turn it counterclockwise until you hear a "pop" sound, which means that the seat cushion is opened successfully, and you can see the battery compartment after opening.

● **Install Battery Operation:**

After opening the seat cushion, lift the battery and put it into the battery compartment, insert the battery cable in the compartment into the battery socket. Close the cushion again after installation is complete.

- **Power Switch, Remote Control Function Introduction and Vehicle Driving Operation:**



- **Start**

First press the remote control unlock button“”, unlocked successfully.

Then hold the handlebars with both hands, step up from the left side of the vehicle and sit on the cushion, with driver's left foot on the ground. Turn the power switch to the "start status" with the key, and the vehicle will start immediately. After the system self-test is completed, it enters the standby status. Hold the brake handle, lift the single kickstand, and release the brake to drive normally. Note that the handlebar should be turned slightly towards driver's body to avoid sudden increase to the maximum.

Caution:

When the vehicle front and rear wheels on the ground, the rider is not sitting in the cushion and not ready to ride, do not turn on the power, turn the handlebar, to prevent the vehicle suddenly forward, causing safety accidents.

● Safe riding

- Before driving the vehicle, carefully read the "Inspection Before Driving". Please check the vehicle first, so as to prevent accidents.
- This motorcycle can only carry two people, including the driver and one passenger.
- Due to the small size of the motorcycle, accidents often occur between the motorcycle and the car due to the line of sight. Many of these accidents are caused by the fact that the driver did not find the motorcycle. Therefore, the driver makes the motorcycle more conspicuous, which will reduce the probability of such accidents.

Therefore:

- Wear bright clothes and qualified helmets; The driver wears special motorcycle clothing and protective equipment, and the passengers wear neat and compact clothes.
- When you cross the intersection, please pay special attention to other cars in these accident prone places to ensure that the driver can see you.

- When riding, please ensure that you are within the vision of other drivers and avoid being in the blind spot of other drivers.
- Do not get too close to other motor vehicles, use the turn signal, horn and other signal devices correctly, do not compete for the road, and strictly abide by the traffic rules.



Dress to match



Dress does not match



Dressing does not match

● Parking

After the vehicle arrives at the destination, turn the handle back, pinch the front and rear brake handles until the vehicle stops, support the right foot first, support the single support to the ground, turn the vehicle key to the "off" state of the power switch, and the vehicle will be powered off. At this time, neither the motor nor the lights can be turned on. Then

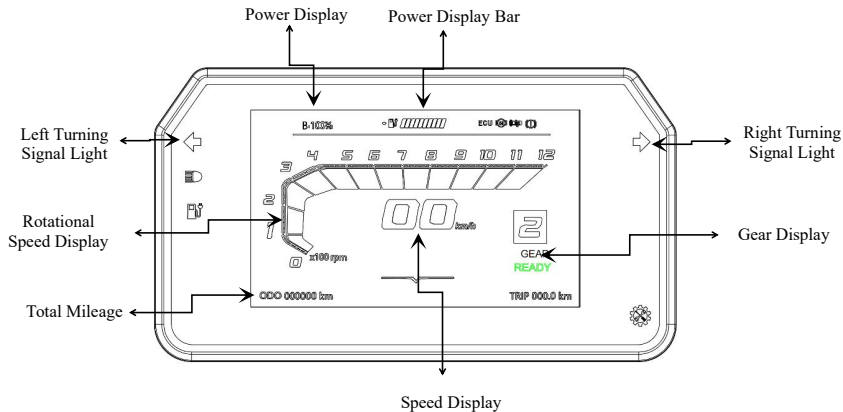
turn the single kickstand to the parking state, tilt the vehicle to the left, and support the vehicle through the side brace.

● **Locking Vehicle**

Locking operation is only allowed when the power is off. After the car stops stably, turn the steering handle to the left and use the car key to turn the switch to the "Lock the steering handle" position. At this time, the steering handle is locked and cannot be turned. Then press the lock key "  " with the remote control within the effective distance, and the turn signal will be on for several seconds, which means the lock is successful. At this time, moving the vehicle again will sound a harsh alarm.

Display and icon description

① Display



② Icons

Icon	name	function
	Left turning indicator	Left turning signal light comes on
	Right turning indicator	Right turn signal light comes on
	high beam indicator	High beam light on
	Gear display	Display the current drive gear
READY	Ready to start indicator	The vehicle is in the energy on state
	Battery display bar	Current power value, each grid represents 10% of power
	Real time speed	The reading is the current riding speed

	Battery Percentage	Display battery charge percentage
	Rotational speed display	Display real-time rotational speed
	Handle fault prompt	The handlebar of the car may have some faults that need to be eliminated
	Motor fault prompt	The motor of this vehicle may have some faults that need to be eliminated
	Controller fault prompt	The controller of the vehicle may have some faults that need to be eliminated
	Total mileage	Total mileage of the vehicle
	Charging prompt	Prompt whether the charger is connected successfully

● Left Combination Switch:

① High and Low Beam Switching Button:

Press "☰" button, it is high beam; Press the "☷" button, it is the low beam light.

② Turning Light Button:

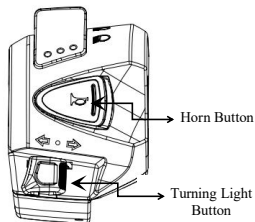
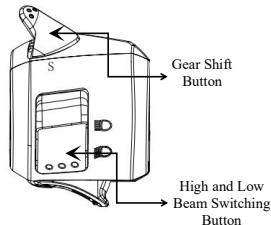
When this switch button is at the "↶" mark position, it means to turn left, and the left turning light is on at the same time. If the button is at the "↷" mark position, it means to turn right, and the right turning light is on at the same time. Press it to turn off the signal light.

③ Horn Button:

When this switch button is pressed, the horn will sound.

④ Gear Shift Button:

Press this button to switch the gears of the entire vehicle.



● Right Combination Switch:

① Forward/Reverse Switch Button:

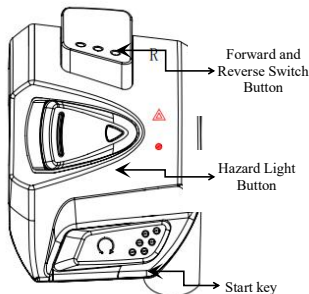
Dial up “R” to reverse, and dial down D to move forward.

② Hazard Light Button:

Press to turn on the hazard light and press again to turn off the hazard light.

③ Start Button:

After unlocking the vehicle, lightly press the start button to enter the "power on state" of the vehicle, and then press twice to shut down the vehicle.



Warning: USB interface cannot be used for any operation other than cell phone charging. Doohan will not be responsible for any damage to the parts caused by incorrect operation of the owner

● **Precautions for Brake System Operation**

① Speed control: When it is necessary to reduce the speed, please control the opening degree of the handle as required and operate it together with the front and rear brakes, which is particularly important.

※ **Attention: When the road is soft or wet, please drive carefully during braking, acceleration or steering.**

② Simultaneous operation of the front and rear brakes.

Caution:

- 1. When descending to the slope, turn the handle back completely, and use the brakes of the front and rear wheels to reduce the speed. At the same time, continuous operation of the brake shall be avoided. If the brake is operated continuously, it will overheat the brake, thus reducing its braking efficiency.**
- 2. When driving at medium and high speeds, do not use the front brake or rear brake alone, but use the front brake and rear brake at the same time to avoid side slip and accidents.**

● **Precautions for Vehicle Use**

- ① Speed shall be accelerated evenly during startup, and the speed shall not be increased instantaneously. This will not only ensure driving safety, but also help protect the motor and battery;

- ② When encountering uphill, upwind, heavy or muddy road sections, you should slow down or get off to push, which can avoid excessive current discharge of the battery, improve the driving range and extend the service life of the battery;
- ③ After riding, please turn the power on, take down the key and store it properly;
- ④ Please develop the habit of pushing the brake handle back to its original position when braking; when the brake handle is released, if the handle is still in the original acceleration position, the motor will immediately get current to run, which is not safe;
- ⑤ Although the car has good rain proof performance, please try to avoid exposure to the sun and rain to prevent the car body and parts from rusting. Note that the accumulated water shall not be higher than the centerline of the hub shaft in rainy days to prevent the motor from being damaged due to water ingress;
- ⑥ Please regularly wipe the vehicle, timely remove the dirt on the surface of the motor and other parts, and do not directly flush the electrical components and drive components with water;

- ⑦ Try to avoid parking the vehicle in direct sunlight, high temperature and humidity and outdoor parking in rainy days. Be sure to protect the throttle, battery box and control box. If the above situation has occurred, please try to spin in place before riding, and then ride after the test is normal;
- ⑧ The front axle, rear axle and other lubricating parts shall be lubricated regularly (grease is recommended) and maintained at least once a year to ensure flexible movement.

● **Precautions for the Best Driving Range:**

- ① Under the condition of ensuring safety, the number of braking and starting shall be reduced as far as possible;
- ② Accelerate evenly during startup; When riding, it is necessary to control the speed at a low speed within 20km/h. When braking, the handle will return automatically;
- ③ In case of muddy or upwind road sections, please pay attention to driving safety, and get off the vehicle when appropriate;

- ④ Do not drive with overload;
- ⑤ The vehicle has passed the commissioning and inspection before delivery, and it is strictly prohibited to refit without permission. The factory will not be responsible for any major problems caused by refitting without permission.

● **Precautions Against Theft:**

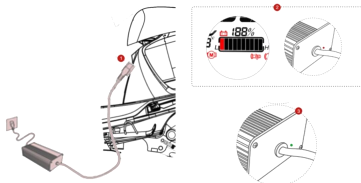
- ① Lock the handlebars in time, and never leave the car key in the lock hole of the ignition switch;
- ② If possible, it is better to park the car in a locked garage;
- ③ High quality additional anti-theft devices are recommended.

● **Precautions for Use of Motor and Controller:**

- ① Do not accelerate sharply when driving on zero start, uphill, muddy or upwind roads to avoid loss of motor and battery during acceleration;

- ② Keep the surfaces of the motor and controller clean for a long time, but do not wash them directly with water;
- ③ Do not disassemble the motor and controller by yourself. If there is a need for repair and replacement, please go to the local dealer or designated maintenance point for repair and replacement.

● Charging Precautions



Vehicle Charging:

- ① First open the body charging port by rotating, insert the charging plug into the charging socket, and ensure that the charging plug is correctly connected with the charging socket;

② Then, connect the input plug of the charger to the room electricity. When the indicator light of the charger turns from green to red, it indicates that charging is started; When the indicator light of the charger changes from red to green, it indicates that the charging is completed;

External Charging:

① Open the battery compartment (refer to the illustration above for specific operation method);

② Lift the battery out of the vehicle body;

③ First insert the charging plug into the charging socket, and then connect the input of the charger to the room electricity after confirming that the charger is connected to the charging socket. The indicator light of the charger turns from green to red to start charging. When the charging indicator is green, it indicates that charging is completed.



● **Precautions for Use of Charger**

① Please charge the battery within the ambient temperature of 0°C~35°C;

② The charging time should not exceed 10 hours. Overcharging will shorten the battery life;

③ The charger of this product uses a special charger attached to the vehicle. When charging, first insert the output plug of the charger into the vehicle charging socket, confirm that the charging plug and the socket are connected, and then insert the input plug of the charger into the AC power supply. When unplugging the charger, pull out the input plug first, and then the output plug, without dislocation.

④ During charging, it is forbidden to cover the charger and battery box with other objects for ventilation and heat dissipation;

⑤ The charger shall be stored in a dry and ventilated place for standby. When carrying, it shall not be violently bumped or collided, otherwise it may be damaged.

⑥ In areas with unstable voltage, it is recommended to use low power AC voltage regulators. Otherwise, it is easy to cause insufficient charging of battery by charger or charger failure;

⑦ Do not disassemble the charger by yourself. If it needs to be replaced, please go to the local dealer or the designated maintenance station for replacement.

Notice:

① **When using this vehicle, the battery plug must be reliably connected with the battery, otherwise it is very likely to have poor contact, which will affect the riding.**

② **The charging function below 0 °C is turned off. Please charge the battery in an environment above 0°C.**

※ **Warning:** The use of a non original charger may cause the battery to leak, heat, smoke, fire or explosion.

● **Precautions for Battery Use**

- ① Please use the battery within the ambient temperature of $-10^{\circ}\text{C}\sim 45^{\circ}\text{C}$;
- ② Avoid water ingress, beverages, corrosive liquids, etc., which may cause leakage, heat, smoke, fire or explosion of the battery;
- ③ Avoid putting the battery close to heat source, open fire, flammable and explosive gas and liquid, which may cause leakage, heating, smoking, fire or explosion of the battery;
- ④ If metal foreign matters enter the battery box, they may cause leakage, heat, smoke, fire or explosion of the battery;
- ⑤ If the battery has peculiar smell, heat and deformation, please stop using it immediately, stay away from the battery and contact the after-sales department.

Attention:

- ① If the batteries cannot be fully charged after more than 10 hours charging, please stop charge and contact the after sales department for maintenance.

② Please do not store the batteries to the place with temperature of 40°C above which may lead irreversible capacity fading.

③ The lithium battery capacity may cause fading inordinately at low temperatures. Specific reference degrees: available capacity are 70% at -10°C, 85% at -0°C and 100% at 25°C.

④ The most suitable electric quantity for battery storage is 30%-50%. Long-term storage with electric quantity of less than 10% may lead irreversible capacity fading. In case of long-term battery storage, please maintain the batteries are in -10°C~30°C and conduct a complete charge-discharge cycling every two months which could reduce the storage attenuation at the most extent.

⑤ Avoid store the batteries to the places where are in risk of falling, provided that battery falling could lead uncontrolled damage inside batteries and result in batteries leaking, heating, and smoking, even fire disaster or explosion.

Warning:

Batteries are not belongs to the assembly units which users can repair by their selves, in case of fault, please contact the after sales department for maintenance, disassemble batteries without approval may cause batteries leaking, heating, and smoking, even fire disaster or explosion.

6. Daily Inspection and Adjustment

● Inspection Before Driving:

Before driving, the driver should do a routine inspection of the vehicle. The following are all inspection items.

Check items	Check points
Handlebar	1) Stable 2) Smooth turn 3) No axial float and loosening
Brake system	1) 10-20mm free stroke of the brake handles
Tyre	1) Normal tire pressure 2) Tyre wear 3) No cracks or wound 4) Front and rear tyre pressure 225 ± 20 KPa

Electric Quantity	Enough electric quantity to support your driving based on travel planning
Lights	Operate all lights: High beam, low beam, brake light, turn light
Horn	Check whether the horn is normal working

① Braking

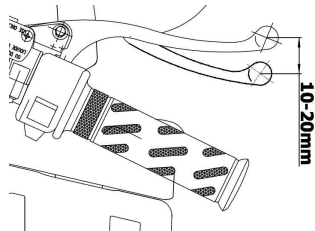
(1) Brake handle free stroke

Appropriate free stroke is necessary for the brake handles, and whose normal free stroke should be the range of 10 to 20 mm. Free stroke means the distance from initial lever position to the contact point of pad.

(2) Fluid pressure type brake system

Brake fluid inspection:

(1) Straighten the handle, and check brake fluid in the



oil storage tank. The brake fluid must remain between the upper and lower limit markings.

(2) Check the brake pads wear when brake fluid declines to the label mark of the lower limit.

(3) If the wear of the brake pad does not exceed the specified limit, it usually means that there is oil leakage, please go to the service station for repair

(4) Brake oil: DOT3 or DOT4

Notice: Once you need to maintain brakes, drivers should ask for the handy special maintenance department who is responsible for the maintenance and inspection of vehicles. All special maintenance departments have trained technical personnel responsible for maintenance and repair. The vehicle parts can only be changed with real original parts of the company.

② Tires

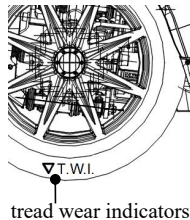
The tire pressure should be inspected and adjusted routinely.

(1) Check the tire pressure only after cooling tires. Normal tire pressure: $225 \pm 20 \text{ KPa}$

(2) Check often whether there are punctures in tires, especially tires need to be repaired immediately when tire air leakage occurs.

(3) Check whether there are shear marks, implant iron nails or other sharp objects in tire surfaces. Check whether or not the indentation, indenture or distortion of rims exists. If any damage has been caused, please contact the maintenance departments to check.

(4) If the tire tread patterns are worn to the sharp corner of the tread wear mark '▽', new tires should be required for changing.



Warning:

- (1) Substandard tire pressure would make the tire treads suffer a serious abrasion and may cause accidents because of that. While much lower tire pressure would cause tire slip or pulling away from rims.
- (2) It is extremely dangerous to use seriously worn tires, which would impact the adhesive forces between tires and the road surface, and make difficulties for driving and even cause accidents. If the tire tread patterns are worn to to the sharp corner of the tread wear mark ‘▽’, new tires should be required for changing.

③ Left turning light, right-turning light, and the tail light

Left-turning light, right-turning light, and the tail light can normally work or not. If not, it should be replaced in time.

④ **Horn**

The horn can normally beep or not, if not, it should be timely adjusted or replaced.

⑤ **Accelerator Throttle**

Speed regulation of accelerator throttle is effective and even or not and can automatically return or not.

7. Maintenance and Repair

In order to extend the service life of Vehicle, to safe and comfortable driving. Please regularly checking and maintenance the vehicle. If the vehicles disused with long time, also need to regular checking.

● Regular maintenance

The first maintenance should be implemented after one month or 500km based on sales date. After that, complete inspection and maintenance should be implemented with every six months or 3000km.

Adhering to maintenance and repairs will keep your car in the best possible condition, ensuring the safety of riders and vehicles.

Regular maintenance and inspection items			
Routine safety and performance	Brake	Structural inspection	Wheel bearings
	Light		Shock absorbers
	Horn		Single kickstand

checking	Electric parts	Important parts	Steering bearing
	Fuse		Battery
	Tyre		Main harness
Structural inspection	lubrication		Control system

Attention:

- ① In case of full load, over load, high speed driving or ride on bumpy road, uphill or downhill usage states, please cut down the maintenance period.
- ② Please use original parts in case of maintenance, which are produced with good materials and have passed the strict examination with guarantee of quality and service life, can ensure the vehicle in best state and your traffic safety, as well as normal after service.

③ During routine maintenance, if any abnormality is found during inspection and maintenance, it needs to be cleaned, overhauled or replaced in time. You can refer to the simple maintenance, or send the vehicle back to the Doohan dealer for overhaul.

Attention:

For your own safety, in the event that you cannot repair or adjust the vehicle, please send back to dealer for maintenance.

Please repair and adjust the vehicle on a flat road with kickstand set up, if it is necessary to check while riding, pay attention to traffic safety.

● **Vehicle Cleaning**

Please clean the e-scooter with water joined neutral detergent and scrub it with soft cloth avoid dry rub, which could cause a scratch ..

Warning:

- ① When cleaning, please ensure turn power off and remove the key prior to pull the plug;
- ② Please do not directly wash the sides and inside of the battery box with a high-pressure water gun. Do not flush the parts such as the charger and the controller in the side cover above the rear wheel directly to avoid water damage.
- ③ There is AC high voltage in the charger, if the vehicle dumps when cleaning, the water may flow into the charger, to avoid electric shock, and please do not charge directly until it is dry. It is advised to go to the maintenance points for checking and drive after the confirmation.

8. Common Faults and Troubleshooting Methods

Regular maintenance and inspection items		
Problem	Cause	Solution
Turn on the power supply, but no power output	1.The battery plug is not well connected 2.Key switch damaged 3.Dead battery 4.Battery damaged 5.Fuse blown	1.Turn off, re plug 2.Replace electric door lock 3.Battery charging 4.Replace battery 5.Replace fuse
Turn the power on and twist the accelerator, engine is not start	1.Battery voltage is too low 2.Half grip brake handle lead to start the power-off switch 3.Vehicle does not start 4.Stand support is not pulled	1.Battery charging 2.Do not hold the brake handle when starting 3.Refer to the “Startup Operation” section of the manual 4.Pull up the stand support

	up 5.Accelerator handle is not restoration 6.Display fault indicator flashing	5.Handle restoration 6.According to the fault code to solve
Slow speed or short range	1.Low battery 2.Insufficient tire pressure 3.Frequent brake to start 4.Aging or normal decay of batteries 5.The ambient temperature is too low, and the charge-discharge of the battery capacity is weaken	1.Charger damaged 2.Check the tire pressure before use 3.Develop good driving habits 4.Replace the battery 5.It is normal
The battery is not	1.Poor contact between	1.Check whether the plug is loose

charged	charger plug and battery socket 2.Charger damaged 3.The charging wires are connected in the wrong order	2.Replace the charger 3.Plug again in correct order
Stop during driving	Run out of battery	Battery charging

9. Vehicle Storage

● Short period storage:

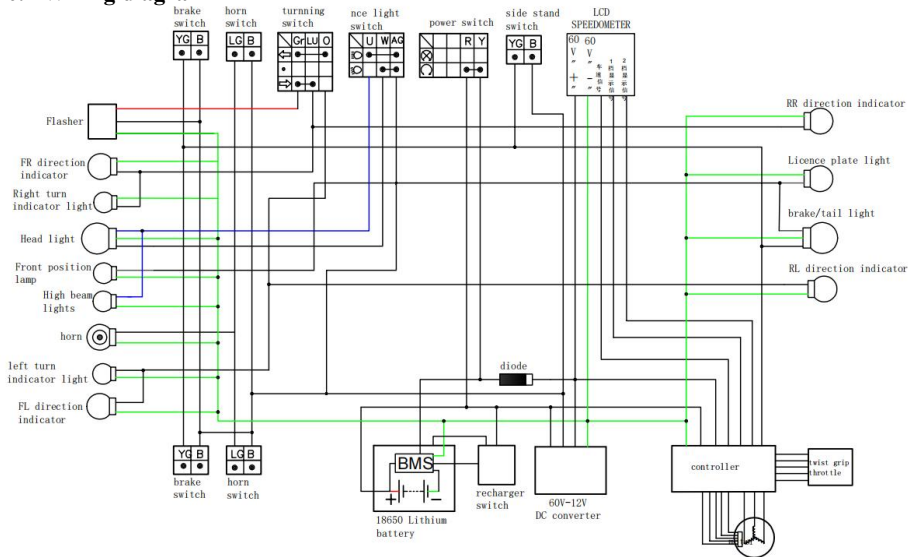
- 1) Store the vehicle in the flat and stable position where it is a well-ventilated and dry location;
- 2) The battery should charge to 50% when storage in order to ensure the battery life;
- 3) Try to avoid vehicles exposed to sun and rain in order to avoid parts damage or aging;
- 4) After long-term storage, please fully charge the battery before use;
- 5) When the battery is installed and store in the room, the exhibition hall, the warehouse and other safe place, or transport with the freight vehicle in short distance, please turn off and pull out the key, then pull out the battery plug in order to eliminate electrical troubles.

● Long-term storage:

- 1) For long-term storage, please turn off and pull out the key, and then pull out the battery plug, disconnect the battery power supply circuit to prevent the battery over discharge;

- 2) For long-term storage, the battery should do a complete charge and discharge cycle every two months, and charge the battery to 50% electric quantity to ensure the battery life;
- 3) After long-term storage, please fully charge the battery before using.
- 4) Before driving, please check all the parts, if any abnormal, please return to the dealer for maintenance or repair.

10. Wiring diagram



Note : Without written consent of Zhejiang Doohan Technology Co.,Ltd. Shall not be printed any part of the" User' s manual" .The final interpretation right is owned by Zhejiang Doohan Technology Co., Ltd.