

## PREFACE

Dear user:

Sincerely thank you for choosing the BENDA Napoleonbob 250 two wheeled motorcycle designed and produced by our company! This model is independently developed and produced by our company based on advanced technology and avant-garde design concepts at home and abroad. We hope it can bring you a safe driving process and a comfortable driving experience!

**Before driving a motorcycle, please read the regulations and requirements outlined in this manual thoroughly! This manual provides an overview of the repair and maintenance of this motorcycle. Please follow the various procedures outlined in this manual for operation!**

**Our company has specialized technical maintenance personnel and maintenance departments, which can provide you with excellent technical maintenance service support!**

The company has always adhered to the service tenet of "making consumers more satisfied" and continuously improves product quality and performance. Any changes in appearance, color, and structure that may result from this may be inconsistent with this manual. We apologize for any inconvenience caused. The pictures in this manual are for reference only, and the actual product shall prevail.

Thank you again for your attention and trust in our company!

**Hangzhou Saturn Power Technology Co., Ltd**

## Important precautions

Please follow the instructions in this user manual when operating and driving the vehicle, strictly comply with national and local traffic laws and regulations, and always pay attention to personal safety!

**This user and maintenance manual is one of the essential accessories for this vehicle. When the vehicle is resold to others, please attach it with the vehicle.**

The copyright of this user maintenance manual belongs to Hangzhou Saturn Power Co., Ltd. Reprint is not allowed without the written consent of our company. Violators will be held accountable.

The writing of this user manual complies with the provisions of GB/T9969-2008 and GB/T19678-2005 standards.

### **Danger/Warning/Caution**

Please read the contents of this manual and remember the key points inside.

#### **Danger**

**The matter indicated by this word involves the personal safety of drivers, and ignoring this may result in injury.**

#### **Warning:**

**The item indicated by this word refers to operational precautions to avoid damaging the motorcycle.**

#### **Be careful:**

**The item indicated by this word is a specialized explanation designed to facilitate maintenance or make important explanations more clear.**

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# I. User Notice

## 1.1 Safety Notice for Driver

For the safety of your personal and vehicle, please comply with the following six regulations:

① Wear various protective equipment correctly

Cycling protective equipment includes safety helmets, goggles, knee pads, elbow pads, and gloves. Wearing protective equipment can greatly reduce the harm to the body in case of accidental falls, and can maximize the protection of your personal safety.

② Familiar with vehicle structure

The driver's driving skills and understanding of the vehicle are the foundation of safe driving. Before officially riding a bike on the road, it is necessary to practice in an open area without other vehicles and fully familiarize oneself with the vehicle and its operation methods.

③ Understand the limits of one's own safe speed

The driving speed depends on the ground conditions, your own skills, and the weather. Drive at a safe speed and within your skill range at all times. Understanding this limit will prevent accidents from occurring.

④ Wear appropriate clothing

Loose and peculiar clothing can make you uncomfortable and unsafe while driving. Wearing well fitted clothing on the seat will allow you to move your hands, feet, and body freely. Therefore, try to choose high-quality tight fitting clothing.

⑤ Pre driving inspection

Please carefully read the instructions in the "Pre driving Inspection" section of this manual. Driving according to the rules can ensure the safety of you and your passengers.

⑥ Pay extra attention to safety when driving on rainy days

Pay extra attention on rainy days and remember that the braking distance is twice as long as on sunny days. When driving, stay off man-hole covers, paint, and oil stains on the road surface to avoid slipping.

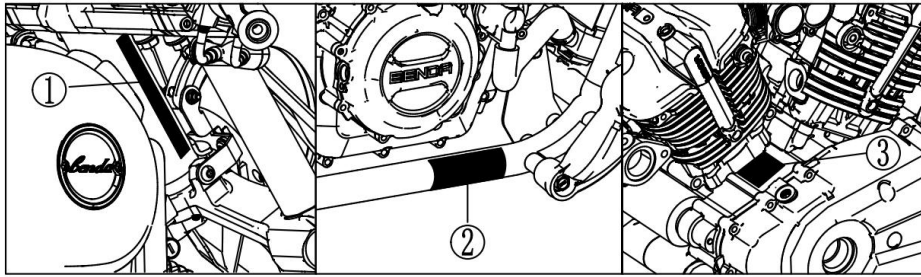
## 1.2. Number Position (Figure 1)

1 VIN: On the right side of the frame main tube;



② Nameplate: On the right side of the frame main tube;

③ Engine number: Above the left box.



**Figure 1 Location of nameplate, VIN code, and engine number**

Please fill in the frame and engine code below for future reference:

Frame number code	
Engine code	

## **II. Introduction to BENDA Two-Wheel Motorcycle**

The BENDA two wheel motorcycle has a compact structure and a unique and innovative appearance. Comfortable riding, good driving stability, using electronic fuel injection system, more environmentally friendly, low fuel consumption and emissions, meeting national emission requirements.

The BENDA two wheeled motorcycle will bring you an unprecedented driving experience!

### **2.1 Scope of application of BENDA two wheeled motorcycles**

Napoleonbob 250 BD250-30 is a two wheeled motorcycle independently developed by BENDA, which is suitable for both urban and rural roads.

### **2.2 Characteristics of BENDA Two Wheel Motorcycle**

- 1. Strong power and high load.**
- 2. High torque and strong climbing ability.**
- 3. Adopting electronic fuel injection system.**
- 4. We have adopted domestically advanced and professional water-cooled engines.**
- 5. We have adopted a 'full DC power supply system'.**

### **2.3 Load limitation**

Number of passengers: 1 person.

Maximum allowable load capacity: 75kg.

### **2.4 Fuel**

Fuel grade: 95 #/ E5 and above unleaded gasoline.

Due to the high flammability of gasoline, if the fuel tank, fuel filter, fuel delivery pipe, throttle valve body and other parts of the vehicle leak oil due to damage or aging, they must be repaired in a timely manner before use.

Unleaded gasoline can extend the service life of spark plugs, mufflers, and other components.

## 2.5 Electrical appliances

You are not allowed to install or change the wiring of this vehicle on your own, nor can you increase or add electrical equipment on your own. Otherwise, it will overload the electrical system, causing overheating of the circuit, melting fuses or short circuiting the circuit, and even generating sparks that can cause danger such as burning the car.

### **danger**

**If any consequences arise from the installation or modification of the vehicle's wiring, or the increase or addition of electrical equipment, our company shall not be held responsible.**

## 2.6 Inspection

You should strictly follow the requirements in the "maintenance cycle table" to maintain the listed components.

## III. Safe Driving Rules

This motorcycle is a two wheeled motor vehicle that can bring convenience and speed to the rider. In order to ensure the best performance of your motorcycle, you must perform proper maintenance and upkeep on the motorcycle. When using a motorcycle, it must be safe and functioning properly; When driving or riding this motorcycle, your body must be healthy in order to control the vehicle at its best condition.

### **Danger**

**Driving a motorcycle must comply with traffic regulations; Before driving, the vehicle must be carefully inspected.**

## 3.1 Safety Driving Rules

1. Before starting the motorcycle, it is necessary to carefully inspect the vehicle to confirm that it is safe and functioning properly. This can prevent accidents and damage to components.

2. Motorcycle drivers must pass the traffic management department's examination and obtain a "motorcycle driver's license"; It is not allowed to lend motorcycles to people without a "motorcycle driver's license" for use.

3. To avoid causing harm, you should do the following:

- Wear eye-catching clothing.

- Do not drive too close to other motor vehicles and use signals such as turn signals, horns, and brake lights correctly.

- Please do not drive in blind spots of other drivers' sight.

4. Strictly abide by traffic regulations.

Speeding is the main factor leading to motorcycle accidents. If encountering rainy or snowy weather, gravel roads, intersections and other road conditions, it is necessary to drive at low speed or slow down carefully.

When turning or changing lanes, signal devices such as turn signals must be turned on to attract the attention of other drivers.

5. The driver should tightly grip the steering handle with both hands and place both feet on the front pedals; Passengers should tightly grip the armrest or hold the driver's waist with both hands, and step on the back pedals with both feet.

### 3.2 Safety protective equipment

1. Most of the injured in motorcycle traffic accidents are head injuries. Therefore, drivers and passengers must wear helmets that meet safety and quality standards, as well as protective equipment such as dust goggles and gloves.
2. When driving, the temperature of the exhaust muffler is high. To avoid contact burns, both the driver and passengers should wear long boots and other equipment.
3. Do not wear loose clothing to prevent hooking onto steering handles, clutch levers, pedals, or nearby vehicles, which may cause accidents.

### 3.3 Vehicle modification

#### **Warning:**

1. **It is illegal to modify motorcycles or replace the original equipment without ensuring the safety of motorcycle operation. You must comply with the traffic management department's regulations on the use of vehicles.**
2. **To ensure that the exhaust emissions meet the national emission requirements, you are not allowed to modify or remove the following components without authorization.**
  - 1) **Cannot adjust idle speed arbitrarily;**
  - 2) **Due to the installation of optimization catalyst on the exhaust muffler, if the exhaust muffler is damaged, please go to the designated repair unit for repair or replacement.**
3. **If you have any good modification suggestions, please inform our company by letter. After confirmation, our company will be responsible for implementing them. Our company is not responsible for any adverse consequences caused by unauthorized modifications.**

#### **Danger**

**We are not responsible for any dangerous consequences such as short circuits in wires, blown fuses, electrical appliances exceeding their rated power, or sparks causing the motorcycle to burn due to self modification of cables and appliances.**

#### **Be careful:**

**Improper or overweight loading of motorcycle cargo can damage the performance of the vehicle and affect its driving stability.**

#### **When loading goods:**

1. The center of gravity of the goods should be located at a lower point and close to the center of the vehicle.
2. Adjust tire pressure based on the load capacity and driving conditions.
3. All goods must be securely fixed to the vehicle to ensure stable handling.
4. Do not attach large or heavy objects to the steering handle, front shock absorber, or front fender, otherwise it may cause unstable driving or poor steering.
5. It is strictly prohibited to exceed the maximum load requirement of the vehicle (75kg).

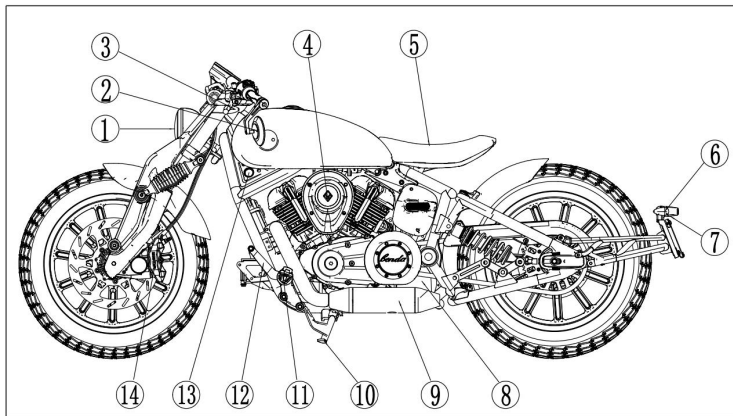
### 3.4 Accessories

The original accessories of this vehicle have been tested by the company. Therefore, our company is not responsible for any adverse consequences caused by installing non original accessories.

After installing non original accessories, you must carefully inspect: visual obstruction, ground clearance, side tilt angle, steering flexibility of the control mechanism, ease of operation, and performance of accessory usage. If the above problems exist, the accessories should be canceled before using this vehicle.

## IV. Instructions

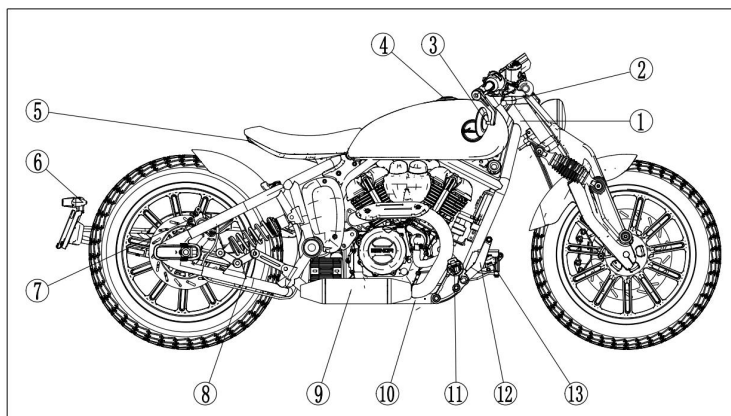
### 4.1. Position of Parts



**Figure 2**

#### 1. Left vehicle body (Figure 2)

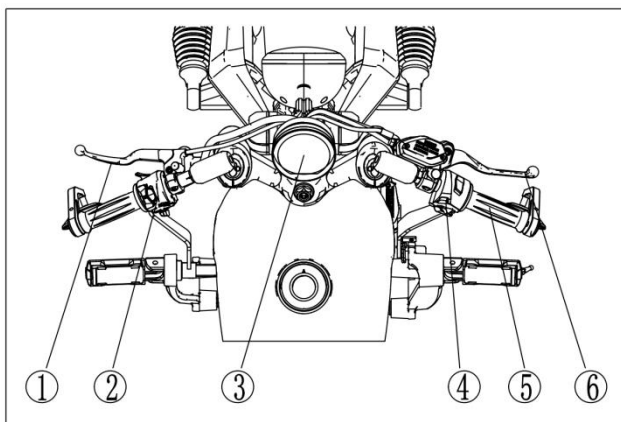
- |                              |                            |
|------------------------------|----------------------------|
| (1) Headlight                | (8) Battery (inside cover) |
| (2) Left rear view mirror    | (9) left exhaust muffler   |
| (3) Left front turning light | (10) Side brace            |
| (4) Air filter               | (11) Front left footrest   |
| (5) Seat cushion             | (12) Gear shift lever      |
| (6) Left rear turning light  | (13) Electric door lock    |
| (7) Rear license plate light | (14) Front brake caliper   |



**Figure 3**

#### 2. Right vehicle body (Figure 3)

- |                               |                           |
|-------------------------------|---------------------------|
| (1) Vehicle VIN code          | (8) Rear shock absorber   |
| (2) Right front turning light | (9) Right exhaust muffler |
| (3) Right rear view mirror    | (10) Vehicle nameplate    |
| (4) Fuel tank cap             | (11) Right front footrest |
| (5) Rear taillight            | (12) Brake pedal          |
| (6) Right rear turning light  | (13) Rear brake master    |
| (7) Rear brake caliper        |                           |



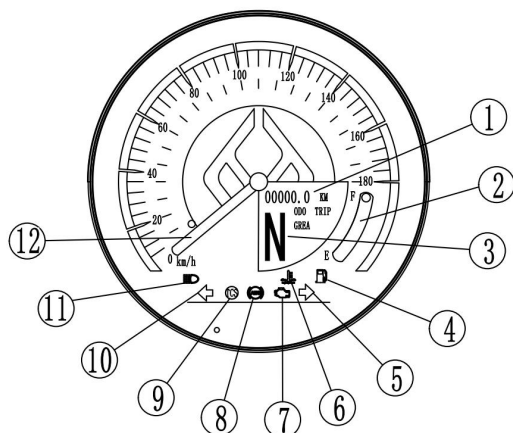
**Figure 4**

#### 3. Front body (Figure 4)

- |                             |                              |
|-----------------------------|------------------------------|
| (1) Clutch handle           | (4) Right switch combination |
| (2) Left switch combination | (5) Throttle lever cover     |
| (3) Instrument panel        | (6) Front brake lever        |

## 4.2 Speedometer

Please refer to Table 1 for the names and functions of indicator light symbols.



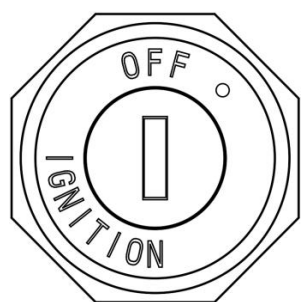
**Figure 5**

Serial No.	Name	Function
1	Mileage indicator	The total mileage traveled by the vehicle
2	Fuel capacity indicator	Display the remaining fuel level in the fuel tank
3	Gear indicator	Display the gear position of the engine
4	Fuel capacity alarm indicator	Insufficient gasoline in the fuel tank, indicating the need to refuel
5	Right turn indicator	The front and rear right turn signals flash, and when lit, they display green
6	Water temperature alarm indicator	Illuminate and display red: coolant overheating, cooling system malfunction
7	EFI malfunction indicator	After the engine is running, the light will turn off. If there is a fault, it will display yellow light and flash
8	ABS indicator	Display ABS status
9	TCS indicator	Display TCS status
10	Left turn indicator	The front and rear left turn signals flash, and when lit, they display green
11	High beam indicator	The high beam lights up and displays blue when illuminated
12	Speed indicator	Instantaneous speed of vehicle travel

**Table 1**

## 4.3. Ignition switch lock

The ignition switch lock (Figure 6) is set in front of the handlebar, and the ignition switch must be turned on before starting the motorcycle. The key position and function are shown in Table 2.



**Figure 6**

Key position	Function	Key status
Turn off "OFF"	Circuit disconnected, engine cannot start	Can be pulled out
Open it "○"	Circuit closed, engine can start	Cannot be pulled out

**⚠ Be careful:**

**When the vehicle is not in use, turn the key to the "OFF" position and remove the key.**

**Table 2**

The front lock (Figure 7) is installed at the lower connecting plate of the vehicle. Lock the steering mechanism when not in use for parking.

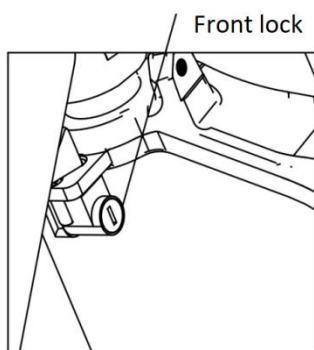


Figure 7

**⚠ Be careful:**

**Before locking the steering mechanism, the vehicle must be parked properly. After locking, the motorcycle cannot be pushed, because it will difficult to maintain balance and prone to rollover.**

4.4 Right switch combination (Figure 8)

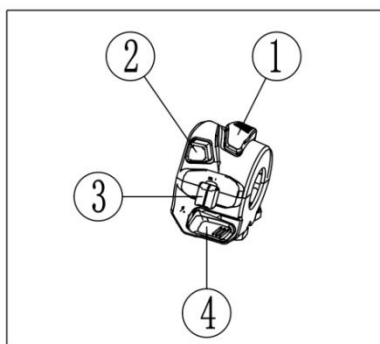


Figure 8

- ① Shutdown preset switch
- ② Warning switch
- ③ Headlight and position light switch
- ④ Electric start button

1. Shutdown preset switch

The shutdown switch is located on the right side of the steering wheel, and the shutdown preset switch has two positions: "⊗" and "↻".

Close "⊗"	Turn off the ignition switch - At this position, the ignition circuit is disconnected, the running engine is turned off, and the engine cannot be started.
Open "↻"	The shutdown switch is turned on - it needs to be switched to this position when running, and the ignition circuit is closed.

2. Headlight and position light switch

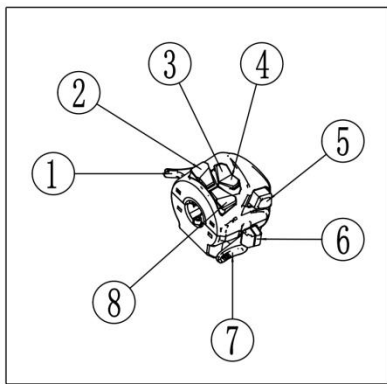
The headlight and position light switches have three states: "☀" "☞☞☞" "●"

Headlights "☀"	When the switch is turned to this position, the headlights, position lights, and taillights light up.
Position light "☞☞☞"	When the switch is turned to this position, the position light and tail light are on.
Close "●"	When the switch is turned to this position, the headlights, position lights, and taillights turn off.

3. Electric start button

The operation method is as follows: After completing the preparation work for starting (see page 12), press the electric start button "Ⓜ", and if necessary, turn the throttle handle to add oil appropriately to start the engine.

#### 4.5. Left switch combination (Figure 9)



- ① Passing light button
- ② SET button
- ③ ABS switch
- ④ TCS switch
- ⑤ High/Low beam switch
- ⑥ Turning light switch
- ⑦ Horn button
- ⑧ MODE button

**Figure 9**

##### 1. Passing light switch

When the 'passing light button' is pressed, the override light will turn on;

When the 'passing light button' is released, the override light does not turn on.

**⚠ Be careful:**

When the headlights are in high beam mode, the passing lights do not work.

##### 2. ABS switch

When the vehicle is stationary, press and hold the switch for three seconds before releasing it to take effect.

At this time, the fault light will flash at a frequency of 1HZ, indicating that the ABS function has been turned off.

If the switch is continuously pressed for more than ten seconds, the ABS function will remain on; After the vehicle is powered on again, the ABS function will also be restored.

After the function is turned off, press the switch again, and the ABS will return to on.

① When ABS is not initialized or malfunctions, the ABS indicator light remains on.

② When the ABS function is turned off: the ABS indicator light flashes.

③ When the ABS function is turned on: the ABS indicator light goes out.

Initialization condition: The vehicle speed is over 5Km/h after starting.

##### 3. TCS switch

After vehicle is powered on, the TCS function is turned on by default.

When the switch is long pressed for more than two seconds, the TCS indicator light will flash at a frequency of 2HZ, indicating that it can be released.

Release the switch at this time, the TCS will turn on normally and the TCS function will be turned off.

Press the switch again, and the TCS function will resume activation.

① Before initialization is complete: The TCS indicator light remains on.

② After initialization, the TCS indicator light will turn off.

③ When TCS is working: The TCS indicator light will flash at a frequency of 2HZ.

The initialization conditions are: engine start, vehicle speed greater than 1km/h, and no current faults.

**⚠ Warning:**

**TCS means “traction control system” that its purpose is to prevent the driving wheel from slipping during starting and accelerating, in order to maintain the stability of the vehicle’ s driving direction. When TCS turn off, the vehicle may slip or roll over, please operate with caution!**

#### 4. Front headlight beam switch

The headlight switch has two operating states: when the ignition switch lock is turned on and the headlight, position light switch is turned to the "☀" position

Low beam ☀	Turn the headlight beam switch to the "☀" position for low beam mode
High beam ☹	Turn the headlight beam switch to the "☹" position for high beam mode.

**⚠ Warning:**  
**Please properly change the status of the high and low beam lights according to the road conditions. If there are oncoming vehicles, please turn the light to the low beam light status to avoid dazzling lights affecting the driving status of oncoming drivers and causing traffic accidents.**

#### 5. Turning light switch

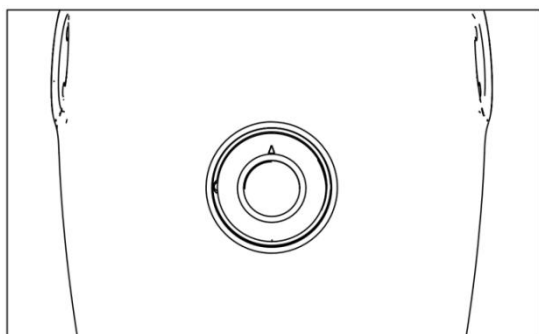
When turning left, turn the turning light switch" to the "↶" position; The left front and rear turning lights on the left, as well as the left turn indicator light in the speedometer are on.

When turning right, turn the turning light switch" to the "↷" position; The front and rear turning lights on the right side, as well as the right turn indicator light on the speedometer are on.

Turn the "turning light switch" to the "center" position; The left and right turning lights and indicator lights will not light up.

**⚠ Warning:**  
**When turning or changing lanes, the turning light switch must be turned on until the turn or lane change is completed before the turn signal switch can be turned off.**

#### 4.6. Opening method of fuel tank cap (Figure 10)



**Figure 10**

Rotate and open the small cover that covers the keyhole, insert the key into the fuel tank lock hole, and turn clockwise to open the fuel tank lock; When closing, turn the key clockwise to insert the lock into the fuel port, release the key, and press firmly with the "△" facing straight ahead until you hear a "click" sound. Finally, cover the keyhole with a small lid.

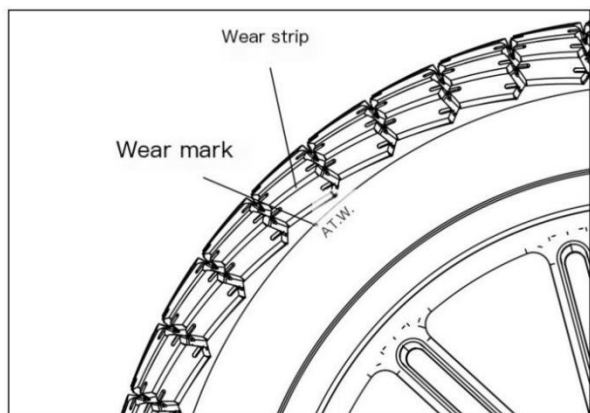
#### 4.7 Tires

The correct tire pressure will ensure stable driving, comfortable driving, and durable tires. The tire pressure should be checked when the tire is cold.

Tire specifications and tire pressure refer to Table 3:

Tire pressure in cold state	Single person riding		
	kPa	kgf/cm2	psi
front wheel	225	2.25	33
rear wheel	225	2.25	33

Table 3



**Figure 11**

Check the condition of the tires, incorrect tire specifications can affect the operation performance of the motorcycle. Damaged and scratched tires can cause tire failure and cause the vehicle to lose control. Overly worn tires can cause tire punctures and cause the vehicle to lose control. Tire wear also affects tire shape and handling performance.

Check the condition and air pressure of the tires before use every day. If there are many obvious damages on the tire, such as breakage, scratches, or tire wear to the extreme position, the tire must be replaced.

**⚠ Be careful:**

- 1. When feeling a decrease in tire pressure, check for nails, small holes, and damage to the side of the wheel rim. When tubeless tires have small holes, they will gradually deflate.**
- 2. Incorrect tire pressure can cause abnormal tread wear and even lead to safety accidents.**
- 3. Insufficient tire pressure can cause tire damage or detachment from the wheel rim.**

**⚠ Warning:**

- 1. The triangle mark indicates the position of the wear strip. If the wear strip comes into contact with the ground, it indicates that the tire has reached its limit of wear. The tire must be replaced.**
- 2. When replacing tires, the size and model of the replacement tire should comply with the content of the "Main Technical Parameters Table" on page 36. If tires of different sizes or models are replaced, it will affect the handling performance of the motorcycle and may cause the motorcycle to lose control.**
- 3. After repairing or replacing tires, balance the wheels. Correctly balancing the wheels is very important to avoid uneven contact between the tires and the road surface, as well as uneven wear of the tires.**

**⚠ Danger**

- 1. Tubeless tires are sealed at the contact area between the wheel rim and the tire lip. To avoid air leakage, special tools are required to protect the wheel rim and lip of tubeless tires during disassembly and installation, using a specialized tire disassembly machine.**
- 2. To repair the small holes in tubeless tires, it is necessary to remove the tire and apply a patch on the inside of the tire. Do not use external repair methods, as the centrifugal force of the tire during turning can loosen the repaired area. Within 24 hours after repairing the tire, the vehicle speed should not exceed 80 kilometers per hour, and thereafter, the vehicle speed should not exceed 130 Km/h. If speeding occurs, the heat generation of the tires will increase sharply, which will cause repair failure and lead to tire leakage. If the tire is damaged on the side or if the damaged area is greater than 6 mm, the tire cannot be repaired and used.**

#### 4.8. Headlamp pitch angle adjustment (Figure 12)

Due to differences in user height and observation habits, there are different lighting requirements for nighttime driving. Users can adjust according to their own needs. The adjustment method is as follows:

Step 1: Use a 10 # open-end wrench and a 5 # hex wrench to loosen the upper and lower fixing screws that secure the headlight.

Step 2: After loosening the screws, gently rotate the headlight up and down with the following fixing screws as the axis, adjust to the appropriate position, and tighten the screws.

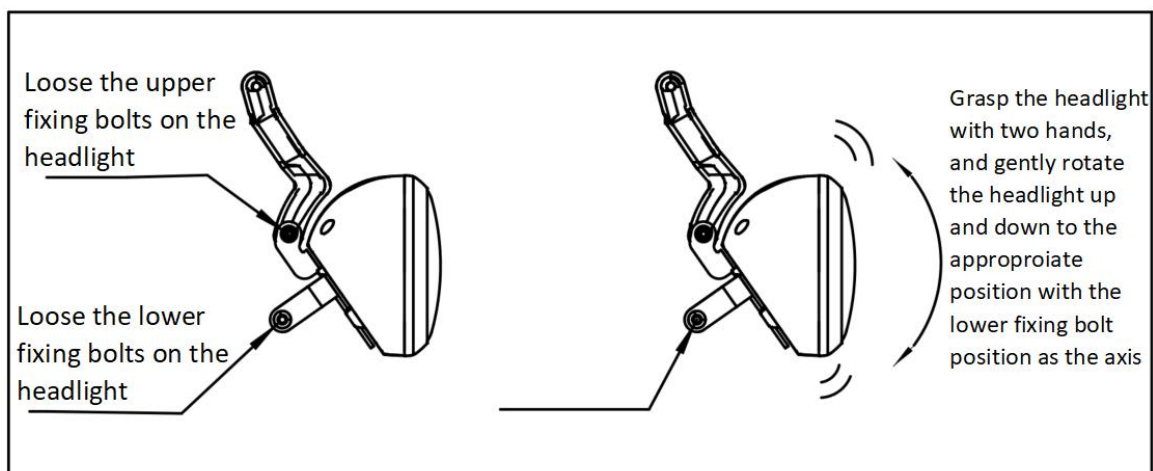


Figure 12

**⚠ Be careful:**

**The maximum rotation angle of the headlight is about 5 degrees.**

## V. Operation guidance

### 5.1. New vehicle running in

The running in period refers to a treatment method carried out during the initial use of a new vehicle to ensure that the joint surface between parts is in the best joint state. The correct running in operation can maximize the lifespan of the vehicle.

New vehicle running in mileage: 1500km.

1. During the running in period, it is necessary to avoid fully opening the throttle and ensure that the maximum engine speed does not exceed 6500 rpm(as indicated by speedometer). Control the vehicle speed within the following range:

0-300km break in:

Avoid opening the throttle handle beyond half of the maximum opening; Vehicle speed within 50km/h.

300-600km break in:

Avoid opening the throttle handle beyond 2/3 of the maximum opening; Vehicle speed within 60km/h.

600-1500km break in:

The throttle lever should not be opened beyond 3/4 of the maximum opening; Vehicle speed within 70km/h.

2. Avoid continuous low speed: When the engine runs at a certain low speed (light load), it will cause the parts to grind smoothly and break in poorly.

3. Reasonably use each gear: Do not drive continuously at a fixed engine speed. You can adjust the vehicle speed appropriately to allow all engine components to "bear" pressure, which can improve the engine running in.

4. Before driving, circulate the engine oil: After starting the hot or cold engine and before running it under load, allow the engine to idle for sufficient time. This can lubricate all important components of the engine, reduce wear, extend service life, and also preheat the engine well.

5. Running in of new tires: Tires also need to be run in. Before running in of new tires, gradually increase your turning tilt angle within 160 km, but avoid sudden braking, acceleration, and turning.

** Danger**

**Poor tire running in can lead to tire skidding or loss of control. Special care should be taken when using new tires, and the tires should be run in within the first 160 KM (100 miles).**

6. Break in period maintenance: Please conduct vehicle maintenance after driving the new vehicle for 1000 km. During the break in period, other parts have already engaged. At this point, all components should be adjusted properly. Then change the engine oil.

** Be careful:**

**When the vehicle is in poor condition, it needs to be inspected before 1000 KM.**

## 5.2 Pre driving inspection

To ensure driving safety, please carefully inspect your motorcycle before each use; If there are any abnormal phenomena during inspection, they must be repaired and resolved before use.

**The inspection can follow the following procedure:**

1. Check the lubricating oil inside the engine (see page 21) and ensure that there are no leaks;
2. Check if the fuel is sufficient;
3. Check if the coolant in the cooling system is sufficient and ensure there are no leaks;
4. Check the front and rear brakes: free travel (5-10mm front, 10-20mm rear), smooth operation;
5. Check the front and rear tires for air pressure, wear depth of tread patterns, and cracks (see page 13);
6. Check the transmission chain: suitable tightness, no defects or damage;
7. Check the throttle handle: free clearance (2-6 mm), whether refueling or refueling is easy to operate;
8. Check the lighting and signal lights: ensure that the headlights, taillights, brake lights, turn signals, indicator lights, and speakers are in good condition;
9. Check the steering device: it should be stable, rotate flexibly, without looseness or axial movement;
10. Check the clutch handle: free clearance (5-10mm), smooth operation;
11. Tighten bolts and nuts: front and rear shock absorbers, fork axles, front and rear wheel axles, engine suspension, steering system, steering handle, front and rear brakes, clutch, rear suspension system, electrical components, etc.

** Warning:**

**Not checking and properly repairing the motorcycle before riding can leave safety hazards. Checking and repairing the motorcycle before riding can eliminate safety hazards.**

### 5.3. Motorcycle Start (Figure 13)

1. Turn on the ignition switch lock and set the shutdown preset switch to the "↻" position.
2. Shift the gear to low or neutral.
3. Fully grip the clutch handle with your left hand (when not in neutral, disengage the clutch).
4. Press the electric start button (⚡), and if necessary, turn the throttle handle to add fuel appropriately to start the engine.

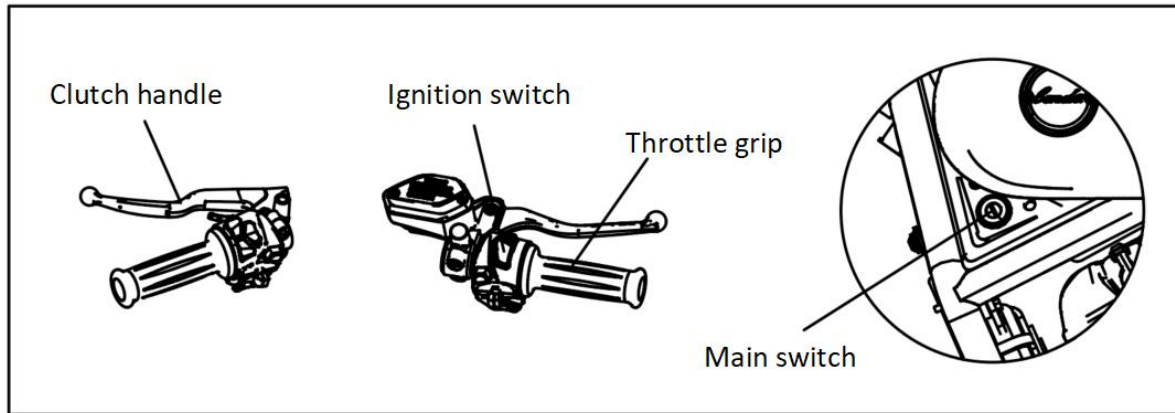


Figure 13

#### **⚠ Danger**

1. To avoid mistakes and potential danger when starting, shift to neutral and do not add fuel to the door.
2. When not driving, the engine speed should not be too high and the idle time should not be too long, otherwise it may cause the engine to overheat and damage internal components, and cause the exhaust pipe muffler to change color.

#### **⚠ Danger**

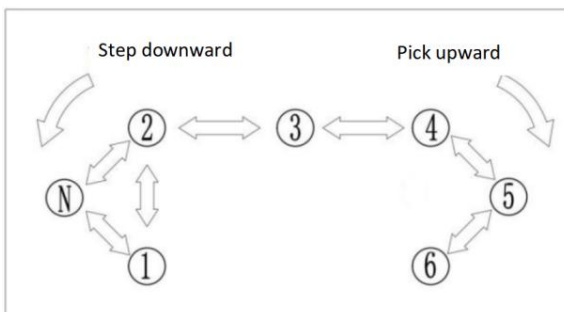
1. If you are driving this type of vehicle for the first time, we recommend that you practice on a non-public road until you are familiar with the control and operation methods of the vehicle.
2. One handed driving is the most dangerous. You should firmly grasp the steering handle with both hands and drive with both feet on the pedals. Under no circumstances should you drive with your hands off the handle.
3. Reduce the speed to a safe speed before turning.
4. The road surface is wet and smooth, the tire friction is low, and the braking and turning abilities naturally decrease, so it is necessary to slow down in advance.
5. Crosswinds are usually most likely to occur at tunnel exits, valleys, or when large vehicles overtake from behind. You must be careful and calm, slow down while driving.
6. Comply with traffic rules and limit speed.

**⚠ Be careful:**

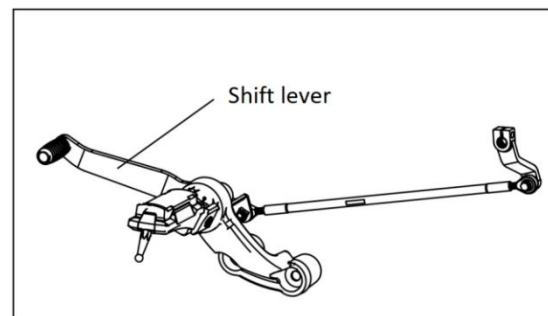
1. After starting, it should be preheated for 2-3 minutes before driving on the road. An engine with insufficient preheating temperature will exacerbate the wear of components such as cylinders, piston rings, rocker arms, etc. during driving.
2. When using the electric start button (⚡), it should be released immediately within 3-5 seconds of each run. Otherwise, it is easy to cause the battery to discharge too quickly and affect the service life of the battery.
3. After starting the engine, the electric start button should be released immediately (⚡); During engine operation, it is not allowed to press the electric start button again (⚡), otherwise it may damage the engine.
4. Ensure that the single support is fully retracted to avoid driving obstruction and control failure when turning left.
5. After starting or driving, it is necessary to smoothly refuel (turn the throttle handle).
6. Do not start the motorcycle in a small space to avoid the risk of poisoning caused by the exhaust gas being difficult to spread.
7. If the clutch switch fails, it should be replaced in a timely manner.
8. It is strictly prohibited to start the engine before disengaging the clutch, otherwise it may cause damage to components or safety accidents.
9. Do not start the motorcycle when there is a lack of fuel or oil.

## 5.4 Motorcycle Driving

### 5.4.1 Shifting operation (Figure 14, Figure 15)



**Figure 14**



**Figure 15**

This vehicle is in sixth gear with constant engagement. The ①②gears are low speed, ③④gears are medium speed, ⑤⑥ gears are high speed. Shifting gears can refer to the following operations:

- 1) Neutral shift to ①gear: Use your right hand to return the accelerator, quickly grip the clutch lever with your left hand, step down on the gear lever with your left foot once to shift the transmission into ①gear, gradually release the clutch lever with your left hand, and gradually turn the throttle with your right hand. Actions coordinate well to ensure smooth operation of the motorcycle in ①gear.
- 2) ①Gear shift to ②gear: Use your right hand to return the accelerator, quickly grip the clutch lever with your left hand, pick upward the gear lever with your left foot once to shift the transmission into ②gear, gradually release the clutch lever with your left hand, and gradually turn the throttle with your right hand. Actions coordinate well to ensure smooth operation of the motorcycle in ②gear.
- 3) The method of shifting to ③④⑤⑥gears are same as the method of shift to ②gear from ①gear.
- 4) The method of downshifting is same as the method of shift to ①gear from Neutral.

**⚠ Warning:**

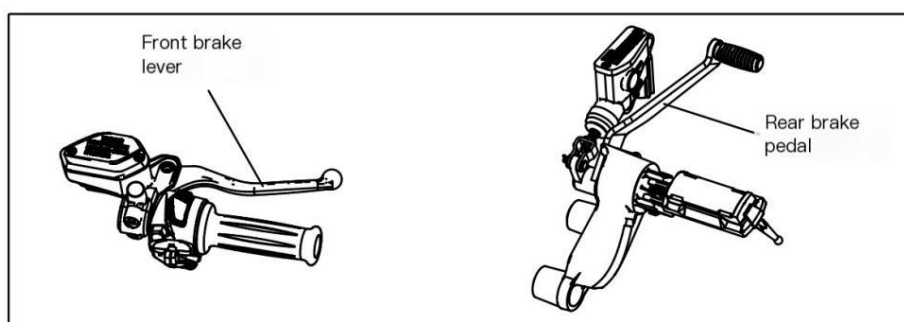
1. It is strictly prohibited to shift gears without returning the throttle or gripping the clutch lever tightly, otherwise it may cause damage to the engine and transmission system and lead to safety accidents.
2. When shifting gears, please confirm that the gear lever is pressed in place before releasing the clutch lever.
3. During the period of gripping the clutch handle tightly when shifting gears, the clutch disengages and the motorcycle relies on inertia to travel. Therefore, it is necessary to shorten the shifting time as much as possible.
4. When driving at high speed, suddenly reducing the gear or rapidly returning the throttle will result in a lower engine speed and a higher rear wheel speed. When the clutch lever is released, the friction and engagement of the clutch plates will slow down, causing the rear wheels to brake and lose control, leading to accidents. Therefore, when changing from high-speed to low-speed driving, it is necessary to use the brake to slow down and then lower the gear.
5. It is strictly prohibited to drive at low speeds in low gears and at low speeds in high gears, otherwise it may cause engine damage.
6. Before accelerating, the gear must be raised to ensure that the engine operates within the normal speed range. No gear should cause the engine speed to be too high.

**⚠ Be careful:**

1. Reduce the vehicle speed or increase the engine speed before shifting to a lower gear. Before shifting into high gear, increase the vehicle speed or decrease the engine speed. This can prevent unnecessary wear of transmission system components and rear tires.
2. When the gear is in neutral and the neutral indicator light is on, it is best to slowly release the clutch lever to confirm whether it has truly entered the neutral position.

#### 5.4.2 Climbing or Turning Driving (Figure 16)

- 1) When driving uphill, there may be a deceleration phenomenon where the gear is too high and the power is insufficient. Therefore, it is necessary to quickly downshift before driving uphill.
- 2) When driving on a long slope, it is necessary to lower the gear and intermittently use the front and rear brakes. If the front and rear brakes are used continuously for a long time, it can cause the brakes to overheat and reduce braking effectiveness, posing a danger.
- 3) It is not allowed to turn off the ignition switch or turn off the engine shutdown switch while sliding downhill, otherwise it will reduce the life of the catalyst in the exhaust muffler.
- 4) Before turning, you must first use the brake to reduce the vehicle speed and then lower the gear. Otherwise, if the vehicle speed is too fast during turning and rushes out of the curve, or if the brake is used during turning, it may cause dangerous accidents.



**Figure 16**