

# 650GT

L3e-A2

CF650-8F  
OWNER'S MANUAL

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EXPERIENCE MORE TOGETHER

## FOREWORD

Thank you very much for choosing a CFMOTO vehicle.

Welcome to join our worldwide family of CFMOTO owners. We proudly produce exciting products such as sports vehicle, utility vehicle, and recreational vehicle.

- All terrain vehicles (ATVs)
- Utility vehicles (Patrol, forest protecting and hunting)
- Motorcycles
- Traveling motorcycles
- Vehicles for government purpose

CFMOTO, a company which is specialized in production of liquid-cooled engine, is the top-level manufacturer in China. Compared to other air-cooled engines of same displacement, CFMOTO engines' cooling effect is better; oil temperature can be adjusted more freely; vehicle is more powerful with lower fuel consumption and longer engine service life.

Please read this manual before riding, you will have a more comprehensive understanding of the vehicle's characteristics and how to drive it after reading owner's manual. For your convenience, please keep this manual in your vehicle. This manual contains important safety information, which provides some special tips and necessary skills for driving this motorcycle, and it also contains basic maintenance and inspection procedure. If you have more questions about driving and maintaining this vehicle, please contact CFMOTO authorized dealer.

Before every driving, please make some inspection. And make sure to finish regular maintenance, this are the basic driving requirement for motorcycle. Please take this manual as one permanent part of the motorcycle, even when transferring the vehicle to others, please also transfer this manual together.

**This motorcycle is subject to standard: Q/CFD 013.**

**This manual's compiling is accordance with standard: GB/T9969-2008 and GB/T19678-2005.**

**Zhejiang CFMOTO power Co., Ltd reserves the final explanation rights of the owner's manual.**

## Important attention Information

The following warning signs appear in many places of this manual, please follow with the safe driving and maintenance procedure when you see the following warning signs.

### **Danger**

This security warning indicates a possible hazard that could lead to serious injury or death.

### **Warning**

This signal means “Vehicle could be Damaged if you don’t follow instructions”.

### **Note**

This signal means “More efficient and convenient driving skills”.

 <b>Danger</b>
<p>This motorcycle can only be used by eligible riders with proper way. At the same time, please pay attention to the following instructions.</p> <p>Do not make any modification on this motorcycle without CFMOTO approval.</p> <p>Be sure to follow your local traffic rules and laws when riding.</p> <p>Any modification for configuration or electric components will cause potential side effect on performance, emission and noise control.</p>

Information in this publication is based on the latest production available at the time of approval for printing.

CFMOTO reserves the right to make changes at any time without notice and without incurring any obligation.

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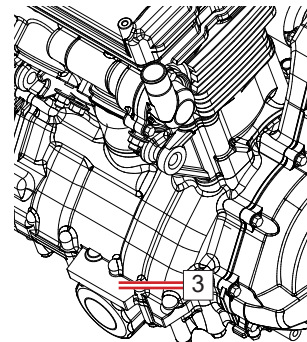
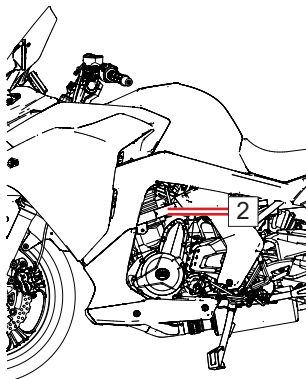
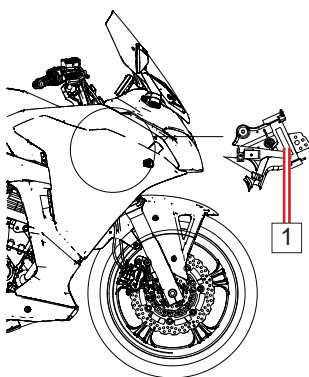
## VIN and Engine Serial Number

Be sure to record below VIN number, engine serial number and name plate number for your maintenance purposes. At the same time, keep spare key in a safe place. If two keys are missing, then you have to replace lock assembly.

1 Vehicle identification number: \_\_\_\_\_

2 Name plate: \_\_\_\_\_

3 Engine serial number: \_\_\_\_\_

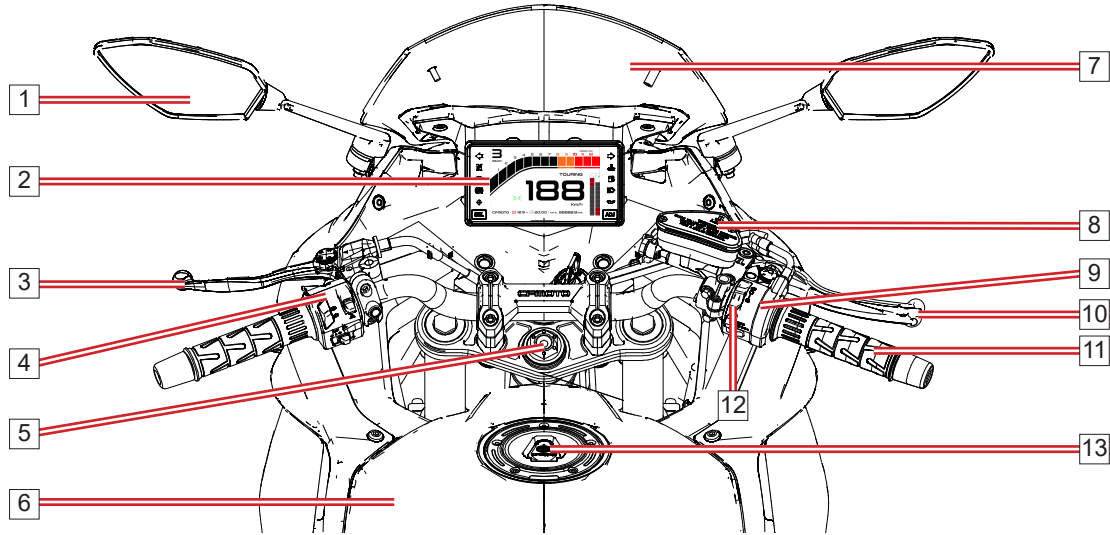


## Specification

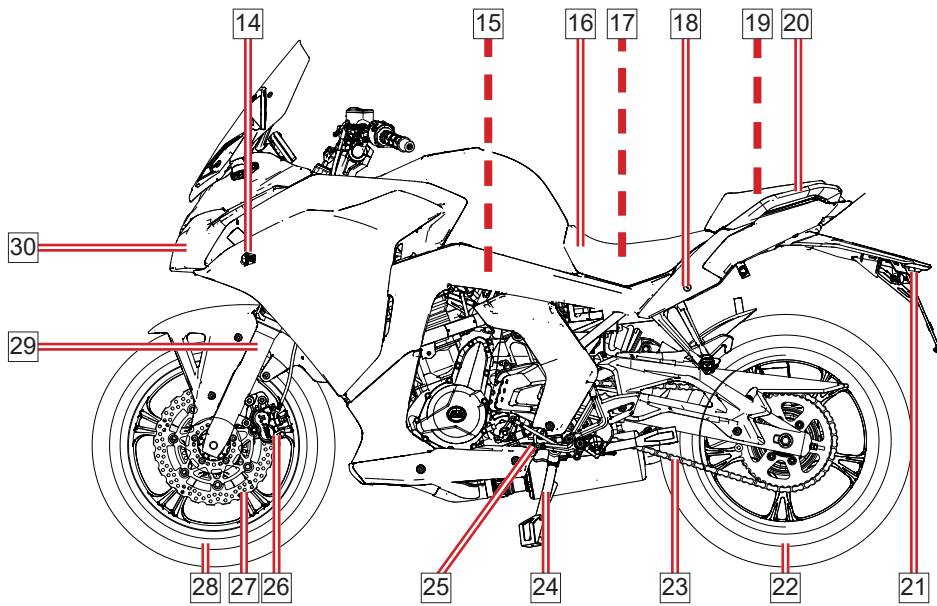
<b>Performance</b>		<b>L3e-A2</b>
Max. Power		33kW 9000r/min
Max. Torque		50N•m 5750r/min
Min. turn radius		2.8m
Top speed		160km/h
<b>Size</b>		
Length		2100mm
Width		784mm
Hight		1340mm
Wheelbase		1425mm
Seat hight		840mm
Min. ground clearance		150mm
Curb weight		226kg
<b>Engine</b>		
Type		Cylinder in-line, two cylinder, four stroke, liquid cooled
Displacement		649mL
Bore×Stoke		83mm×60mm
Compression ratio		11.3±0.5:1
Starting system		Electric starter
Fuel supply		EFI
Ignition control		ECU ignition 1-2
Lubricating system		Pressure splash lubrication
Engine oil type		SAE10W/40 SJ Class
Coolant capacity		1580mL+245mL

<b>Transmission</b>		<b>L3e-A2</b>
Transmission type	6-speed, international standard gear	
Clutch type	Wet, multi disc, manually	
Driving system	Chain drive	
Primary reduction ratio	2.095	
Final reduction ratio	3.067	
Gear ratio	1 <sup>st</sup>	2.353
	2 <sup>nd</sup>	1.714
	3 <sup>rd</sup>	1.333
	4 <sup>th</sup>	1.111
	5 <sup>th</sup>	0.966
	6 <sup>th</sup>	0.852
<b>Chassis</b>		
Tire size	Front wheel	120/70 ZR17
	Rear wheel	160/60 ZR17
Rim size	Front wheel	MT 3.50×17
	Rear wheel	MT 4.50×17
Fuel tank capacity	19L	
Fuel consumption per 100km	5.4L/100km	
<b>Electric components</b>		
Battery	12V10AH	
Headlight	LED	
Tail light/brake light	LED	

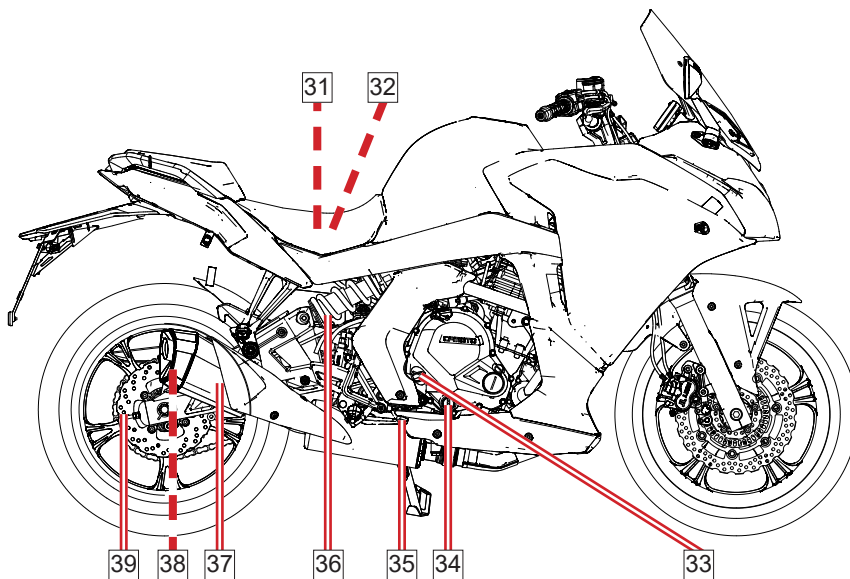
## Location of Parts



1	Rear mirror	4	Handlebar switch,LH	7	Windshield	10	Brake lever	13	Fuel tank lock
2	Instrument	5	Lock	8	Front brake fluid reservoir	11	Throttle grip		
3	Clutch lever	6	Fuel tank	9	Handlebar switch,RH	12	Ignition and stop switch		



14	Turn signal	18	Seat lock	22	Rear wheel	26	Front brake caliper	30	Headlight
15	Air filter	19	Tools	23	Chain	27	Front brake disc		
16	Front seat	20	Rear seat	24	Side stand	28	Front wheel		
17	Battery	21	License light	25	Gear shift pedal	29	Front absorber		



31	Fuse box	33	Oil cap	35	Rear brake pedal	37	Exhaust pipe	39	Rear brake disc
32	Rear brake fluid reservoir	34	Oil level inspection window	36	Rear absorber	38	Rear brake caliper		

## Load and Accessories Information

### WARNING

Following operation may result in an unsafe riding condition:

Improper loading;

Improper modification;

Improper installation of accessories;

Improper maintenance.

Before driving, make sure that follow these instruction and motorcycle is not overloaded.

Always use CFMOTO genuine parts and the accessories that approved by CFMOTO. Non-genuine parts, improper installation or use of accessories, can negatively affect performance and even be illegal. Be attention that you are personally responsible for your own safety and the safety of person involved.

### NOTE

CFMOTO parts and accessories have been specially designed for CFMOTO motorcycles. CFMOTO strongly recommends our customers to use CFMOTO genuine parts and the accessories that approved by CFMOTO.

Motorcycle is sensitive to the changes in weight and aerodynamic forces; you must take extreme care in carrying cargoes, passengers and/or in fitting of additional accessories.



## Important Information

### Important Information before Ride

1. Any driver and/or passenger should be completely familiar with motorcycle operation. The passenger can affect control of motorcycle by improper positioning during turning corner or sudden movements. So it's important for passenger to sit still while the motorcycle is in motion and not interfere with the operation of motorcycle. Do not carry animals on the motorcycle.
2. All baggage should be carried as low as possible to reduce the effect on the motorcycle gravity. Baggage weight should also be distributed equally on both sides of motorcycle. Avoid carrying baggage that extends beyond the rear of the motorcycle.
3. All baggage should be fixed on the motorcycle safely, make sure the baggage can not move before riding. When feel motorcycle is not stable during riding, should inspect again if the baggage is steady, adjust when necessary.
4. Do not carry heavy or bulky items on a luggage rack. They are designed for light items, and overloading can affect handling due to changes of weight distribution and aerodynamic forces.
5. Do not install accessories or carry baggage that impairs the performance of motorcycle. Make sure that you have not adversely affected any lighting components, road clearance, banking capability (i.e., lean angle), control operation, wheel travel, front fork movement, or any other aspect of motorcycle's operation.
6. Weight attached to handlebar or front fork will increase the mass of steering and can result in unsafe riding condition.
7. Fairings, windshield, backrest and any other large items have the capability of adversely affecting stability and handling of the motorcycle. Not only because of their weight, but also aerodynamic forces acting on these surfaces while motorcycle is in operation. Poorly designed or installed items can result in unsafe riding condition.

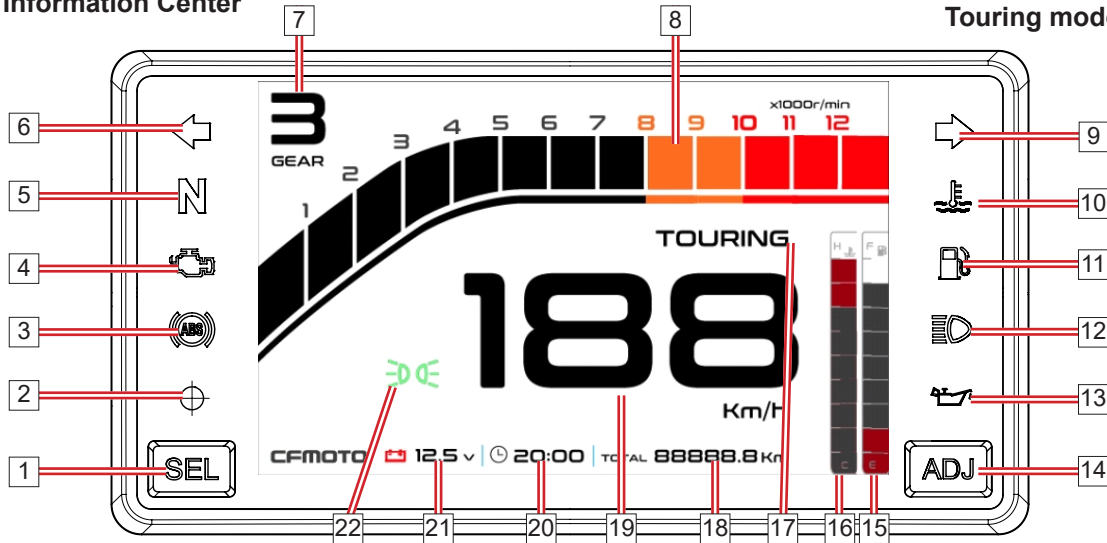
8. The motorcycle cannot be modified to triple-wheel motorcycle and intended to be used for towing any trailer or other vehicle. CFMOTO cannot assume responsibility for the results of such unintended use of the motorcycle. Furthermore, any adverse effects on motorcycle components caused by the use of such accessories will not be remedied under warranty

**Maximum load : Not exceed 155kg (Including weight of rider, baggage and accessories).**

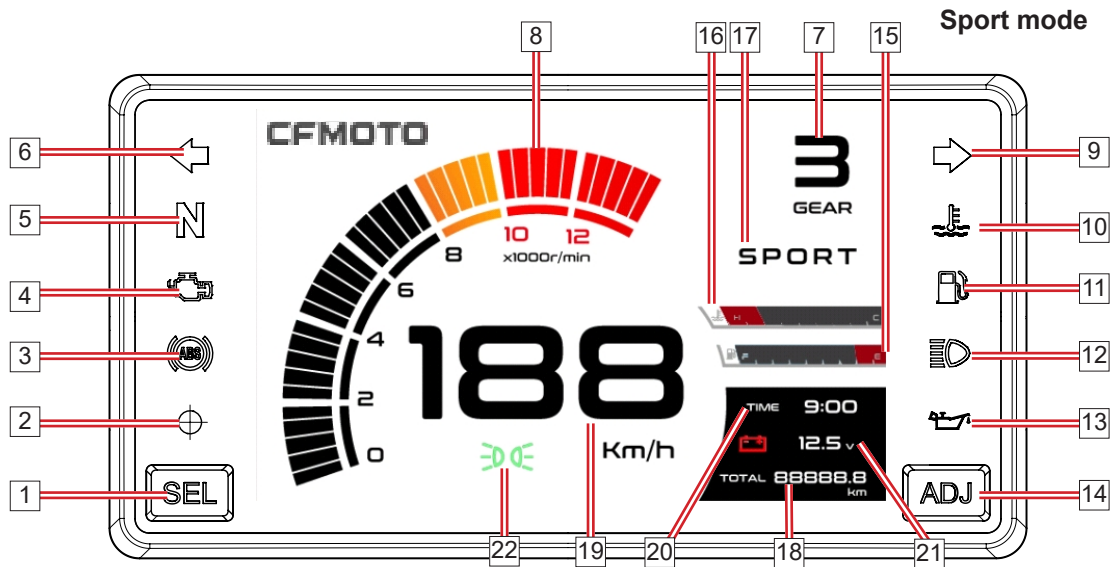
# Instrument

Rider Information Center

Touring mode



1	SEL button	7	Gear display	13	Oil pressure indicator	19	Speed display
2	Photoresistor	8	Tachometer	14	ADJ button	20	Clock
3	ABS indicator	9	Turn signal,RH	15	Fuel display	21	Voltage display
4	EFI fail indicator	10	Water temp. alarm indicator	16	Water temp. display	22	Position light
5	Neutral indicator	11	Fuel alarm indicator	17	Mode display		
6	Turn signal,LH	12	High beam	18	Mileage display		



1	SEL button	7	Gear display	13	Oil pressure indicator	19	Speed display
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5	Neutral indicator	11	Fuel alarm indicator	17	Mode display		
6	Turn signal,LH	12	High beam	18	Mileage display		

**1 SEL button**

“SEL/ADJ” is used for setting clock, Metric Units / Imperial Units and check or clear the trip mileage.

**2 Photoresistor**

Switch interface mode from day to night according to the brightness.

**3 ABS indicator**

When motorcycle is stopped with ABS works normally, this light is twinkling; The light is off when motorcycle is running. If vehicle fails, the light goes on.


**4 EFI Fail Indicator**

This indicator flashes when vehicle circuit fails.

**5 Neutral Indicator**

Light up when the transmission in Neutral.

**6 Turn Indicator, LH**

When the turn switch is pushed to “”, left turn signal indicator flashes.

**7 Gear Display**

It shows vehicle gear. This vehicle has seven gears, from 0 to 6.

**8 Tachometer**



The tachometer shows the engine speed in revolutions per minute.

When ignition key is turned to “ON” position, the tachometer will perform self-checking. If the tachometer does not work correctly, have it inspected by an authorized CFMOTO dealer.

#### **9 Turn signal,RH**

When the turn signal switch is pushed to “” position, right turn signal indicator flashes.



#### **10 Water temp. alarm indicator**

When indicator “” flashes, should stop engine immediately, and inspect coolant hose and coolant capacity in reservoir tank or consult with your dealer. When indicator “” flashes, prolonged engine operation will lead to engine overheating, which will result in severe damage to the engine.

#### **11 Fuel alarm indicator**

When indicator flashes, should full-filled with fuel before starting engine.

#### **12 High beam indicator**

When light switch turns to “” position and dimmer switch turns to “” position, then high-beam indicator is on.

#### **13 Oil pressure indicator**

When oil pressure with failure, this indicator flashes.

#### **14 ADJ button**

“SEL/ADJ” is used for setting clock, Metric Units / Imperial Units and check or clear the trip mileage. ADJ button could adjust dashboard brightness.

**15 Fuel display**

Display how much fuel remains. "F" indicates the total amount of fuel. When indicate at position "E", means only about 4L fuel left, refuel as soon as possible.

**16 Water temperature display**

Display the coolant temperature, when higher than "H" position, means coolant is overheating.

**17 Mode display**

Display operation mode, touring or sport mode.

**18 Mileage display**

Records vehicle's odometer and trip meter.

**19 Speed display**

Display vehicle speed, with km/h or MPH unit.

**20 Clock**

Display the current time, could adjust with button "SEL" and "ADJ".

**21 Battery voltage**

Display battery voltage. The standard voltage for fulfilled battery is 12.8V, normally the symbol shows in white, when voltage is  $\leq 11.5V$ , the battery symbol turns to red.

**22 Position light**

This indicator will become green when position light is on.

## **Instrument Button Function**

### **Time Adjustment**

- In normal state, long time press SEL button, then “hour” number flashes, loose SEL button and short press ADJ button, then “hour” number could add one, following this operation by loops to get the desired time displaying.
- In normal state, long time press SEL button, then “hour” number flashes, loose SEL button and short time press SEL button, then “minute” number flashes, loose SEL button and short press ADJ button, then “minute” number could add one, following this operation by loops to get the desired time displaying.

### **Metric and British Unit shifting**

- In normal state, long time press SEL button, then “hour” number flashes, loose SEL button and short press again the SEL button for two times, the unit icon flashes (km/h, km or MPH, mile), then loose the button.

### **Trip meter checking and clearing**

- When the instrument display ODO, short press SEL for one time, then it shift to trip meter display, long time press ADJ button could clear the trip meter to be zero.



## Dashboard Brightness Adjustment

- In normal state, short pressing ADJ button could adjust the displaying brightness for dashboard. There are 5 levels of brightness for dashboard, following the adjustment by loops to get a desired brightness.

<b>▲NOTE</b>
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Short press means press the button for one second; long time press means press the button for three seconds.
--

If there is no operation within 15 seconds, then it returns to normal display state.
--

## Lock Assembly

Key can be used to open the ignition switch/steering lock, fuel tank lock and seat. Remove the spare key and store in a safe place.

If both keys are lost, the complete lock assembly must be replaced. There are three position "ON", "OFF", "LOCK".

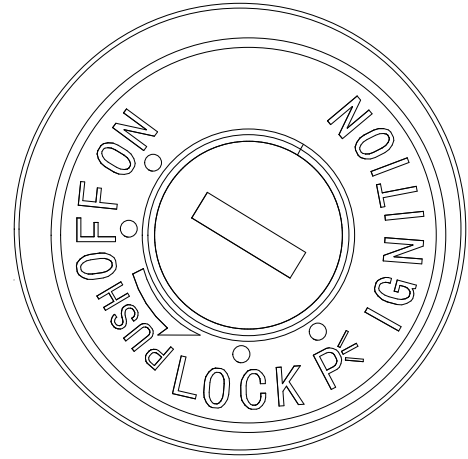
"ON" Engine can be started. Electrical circuits are connected.

"OFF" Engine can't be started. Electrical circuits are off.

"LOCK" Steering is locked. Electrical circuits are off. Protect vehicle from stealing.

### **▲WARNING**

When the ignition key in the position "ON", signal light, tail light and license light are ON . When headlight is on, it's better to start the engine to avoid lack power. When engine is stopped, should not keep the light on for long time, or prolonged lighting can cause battery discharged, even damaged.



## Handlebar Switches, RH

### 1: Ignition and stop switch

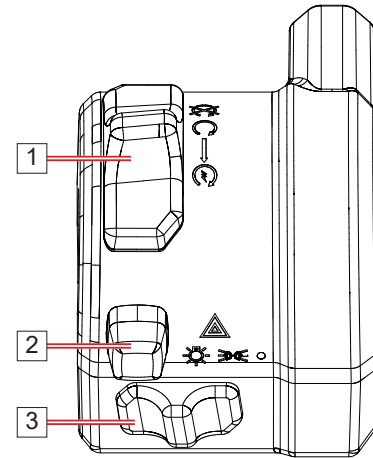
When start to ride motorcycle, turn the key to position“ON”, move the ignition and stop switch to position“○”.

When turn off the engine under emergency cases, turn the ignition and engine stop switch to“⊗”position.

When key is in the position “on”, the ignition and stop switch is in position “○”, and gear is in “Neutral”, move the ignition and stop switch to position“⊕” , then could start the engine.

#### **▲NOTE**


Although the engine stop switch could stop the engine, it doesn't turn off all the electrical circuits. Ordinarily, key should be used to stop the engine.



**2: Warning button**

When need to warn people around during riding or parking, press down this button, all four turning light will flash together.

**3: Light switch**

Light switch include three positions: “” “” “”.



“” : When the light switch turns to this position, head light, position light, tail light are on.



“” : When the light switch turns to this position, position light, tail light are on.

“” : When the light switch turns to this position, head light, position light, tail light are off.

## Handlebar Switches, LH

### 1: Dimmer Switch

: When dimmer switch turns to this position and light switch is on  position, high beam light and high beam indicator are both on.

: When dimmer switch turns to this position and light switch is on  position, low beam light is on.


### 2: Mode button


MODE: use for shift between touring or sport mode.

### 3: Horn button

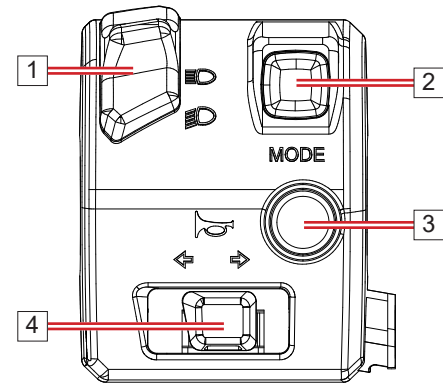
: Press the button, horn sounds.

### 4: Turn switch

: When turn switch moves to this position, left turn light and left turn signal indicator are flashing and the switch bounces back to the middle position.

: When turn switch moves to this position, right turn light and right turn indicator are flashing and the switch bounces back to the middle position.

Press down the turn switch, turn light and turn signal are both off.

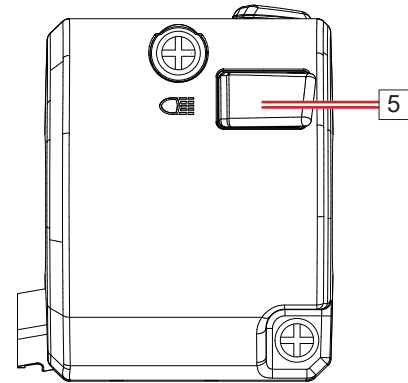


**5: Passing Light Switch**

When need to overtake other vehicles, press this button at intervals, high beam will light on for warning overtaking, high beam indicator also light on in the dashboard.

**⚠ WARNING**

When engine is stopped, turn light and dashboard indicator can not flash for more than 30 min. Otherwise, battery could be damaged.



## Fuel and Fuel tank

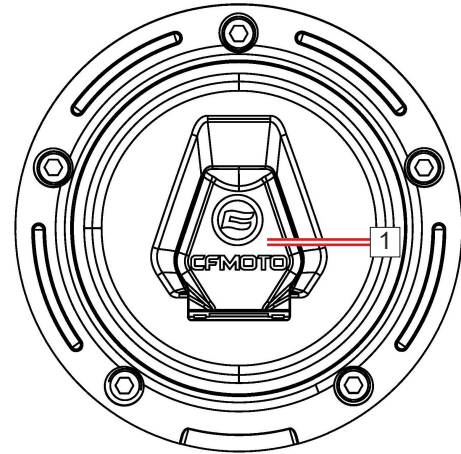
### Fuel tank cap

Open the fuel tank cap, pull up the key hole cover **1**. Insert the key into the fuel tank cap and turn the key by clockwise.

Lock the cap: Push the fuel tank cap inside to the fuel tank port , The key can return to the original position, take out of the key and shut off the key cap **1**.

**▲NOTE**

The key cannot be removed unless the cap is locked properly.



## Fuel tank

Avoid spilling gasoline on the fuel tank when fill fuel, if so, wipe it off immediately to avoid pollution or causing dangers.

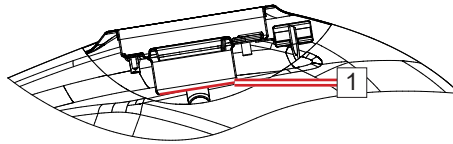
### **▲WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions. Please fill fuel in ventilated place. When refueling, turn off the engine. No smoking or any acts that cause fireworks in the fuel area or fuel storage area.

Never fill the tank excessively, avoid overflowing to the high temperature parts. The fuel level should not exceed the top fuel level **1**. As temperatures rise, the fuel gets heated and maybe spill over and damage motorcycle parts.

Fuel is toxic, and harmful to health. Should avoid touching with skin, eyes and clothes, should not inhale fuel vapor

If touches eyes, should wash eyes immediately with clean water and go to see doctor, if swallow fuel by mistake, should go to see doctor immediately.





## Fuel Requirement

This motorcycle is designed to use only unleaded 95# (V) or above gasoline.

### WARNING

Don't use leaded gasoline, as it will destroy the catalytic converter. (For further understanding, please refer to more information related catalytic converter)

Be sure to use fresh gasoline. Gasoline could oxidate and result in loss of octane and volatile compounds and produce colloidal and lacquer deposits which could damage fuel system.

## Octane rating

The higher RON is, the greater resistance to “knocking” is. This term is commonly used to describe octane rating of gasoline. Always use a gasoline which the octane rating is equal to, or higher than RON 95(V) unleaded gasoline.

### CAUTION

If the engine has a knock cylinder or detonation, use higher quality or higher octane rating of unleaded petrol.

## Side standard

This vehicle has side standard configuration.

### NOTE

When use the side stand, turn the handlebar to the left.

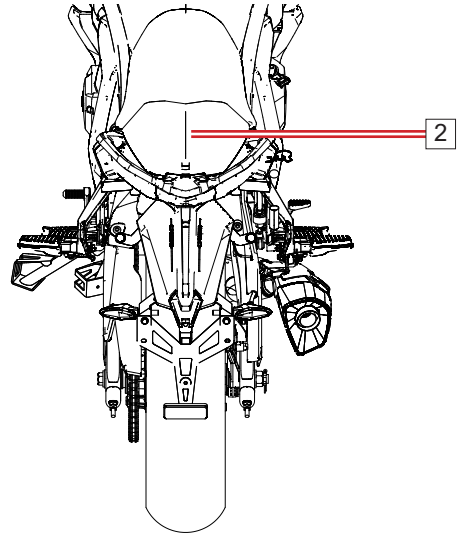
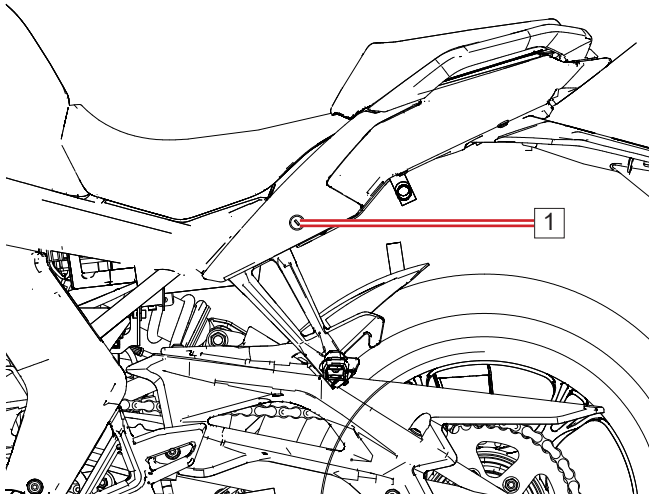
Kick the side stand fully up before riding.

This motorcycle is equipped with a side stand switch. Engine can not start when the gear not in Neutral and the side stand is not down.

## Tool Kit

Open the rear seat lock **1** with key, Tool kit **2** is placed under the rear seat.

Could use these tools for simple repairs and adjustments.



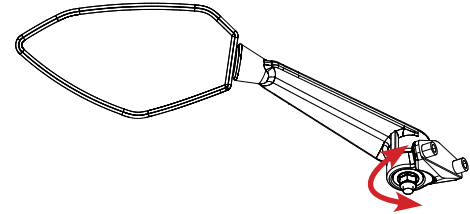
## Rear View Mirror

Rotate the rear view mirror could adjust the visual angle.

The adjustment procedures for LH & RH mirrors are the same.

### ▲NOTE

Don't push too hard when install and remove rear view mirror avoiding damaging bracket.



## Break-In

The break-in period is the first 1000km of operation. The following items should be observed during the “break-in” period:

1. Don't press the start button during driving, and don't run in high engine speed immediately when just start. Even after warm the engine, run the engine for 2 minutes or 3 minutes at idle speed to let the oil flow into all engine lubricating parts.
2. Engine speed shouldn't be too high when gear is in neutral.
3. In break-in period, we suggest the top engine speed as below:

Total odometer	Top engine speed
0km~500km	4000r/min
500km~1000km	6000r/min

**▲WARNING**

New tires are slippery which may lose control and cause damage. Tire pressure should be specified value during the 1000km break-in period. Avoid sudden and maximum braking/acceleration, or hard cornering during break-in period.

**It is extremely important that the owner has the initial maintenance service performed by an authorized CFMOTO dealer.**

# How To Ride This Motorcycle

## Starting the Engine

Check if the ignition and stop switch is in the position “○”.

Turn the ignition key to position “ON”.

Place the gear in neutral.

Move the ignition and stop switch to position “Ⓢ”

### **WARNING**

Don't move the ignition and stop switch down to position “Ⓢ” for more than 5 seconds, otherwise the starter motor will overload or the battery will die. Wait for 15 seconds to move the ignition and stop switch down again.

### **WARNING**

This motorcycle is equipped with a clutch switch. If start engine when the transmission is in the FIRST gear, should pull clutch lever with the side stand is fully up.

### **Note**

Don't let the engine at idle speed longer than 5 minutes, otherwise the engine will be overheated or other parts will damage.

## Quick Start the Engine

If the battery is dead, it should be removed and charged. If need to start engine in emergency case, a 12V battery can be used to start the engine.

### **WARNING**

Battery acid generates hydrogen which is flammable and explosive under certain conditions. It will gather in the battery, even leak out. Keep flames and sparks (cigarettes) away from the battery. And make sure the operation place is ventilated. Wear eye protection when work on a battery. In the event of the battery acid contacts with skin, eyes and clothing, wash the affected areas immediately with water for at least 5 minutes and seek for medical attention.

## Connecting Quick Start Cables

Remove front seat.

Make sure the ignition and stop switch is in position“”.

Connect positive(+) terminal of start cable with the positive (+) terminal of battery.

Connect negative(-) terminal of start cable with vehicle iron place or metal surface of footrest. Don't connect it with negative (-) terminal of battery directly.

**▲WARNING**

Don't make the last connection at fuel system or battery, or it may cause fire. Be careful no positive and negative short circuit, and not connect the last connected cable with battery. Don't connect the quick start cable positive terminal with battery, which may cause exploding. Don't reverse the polarity by connecting the positive (+) to negative (-), or a battery explosion/serious damage to the electrical system could occur.

Follow the standard engine starting procedures.

**▲WARNING**

When starting, don't press the starter button down for more than 5 seconds, otherwise the starter motor will be overloaded or the battery will die. Wait for 15 seconds, and then press start button down again.

## Driving Preparation

Check if the side stand is fully up.

Grip the clutch lever.

Shift into 1st gear.

Apply the throttle grip a little, and release the clutch lever very slowly.

When the clutch starts to engage, apply the throttle a little more, give the engine enough fuel to keep it from stalling.

## Gear shifting

Release the throttle before pulling the clutch lever.

Use shift pedal for shifting gears.

<b>▲WARNING</b>
-----------------

When need to shift gears, reduce engine speed first. Otherwise, engine could be damaged or the rear wheel may skid and cause accidents. Shifting should be done below 5,000r/min (rpm).
---

When release the clutch lever, apply throttle slowly.

<b>▲NOTE</b>
--------------

When parking, shift to neutral. Shift from the first gear to be neutral, lift up the gear shift lever.
--



## **ABS braking**

Fully release the throttle, disengage the clutch to let vehicle slow down.

Shift to 1st gear.

When parking, always apply front & rear brake at the same time. Normally, the force of front brake is a little smaller than the rear. Shift down or fully disengage the clutch to keep the engine from stalling when necessary.

Never lock the brakes, or it will cause tires skidding. When turning a corner, brake force should be light. Reduce your speed before get into the corner.

Emergency braking, disregard down shifting and applying the brakes hard can cause skid.

When turning a corner, it is better to brake lightly and reduce speed before you get into the corner.

## **Stop the engine**

Release the throttle completely.

Shift the transmission into Neutral.

Turn the key to position "OFF".

Lock the steering lock.

### **▲ Note**

The motorcycle is equipped with a roll-over sensor. When motorcycle falls down, engine stop automatically, after righting the motorcycle, turn the ignition key from "OFF" to "ON" to erase errors.

## Stop the motorcycle in emergency

When throttle is out of control, you could use front brake, rear brake and grip the clutch lever to stop vehicle. After these procedures, use ignition and stop switch to shut off the engine. If used the ignition and stop switch, the ignition switch should in the position "OFF", then stop the vehicle.

## Parking

Shift the gear to be neutral position, and turn off the ignition key.

Support the motorcycle steadily with side stand on the level ground.

### **WARNING**

Do not park the vehicle on a soft or steeply inclined surface; otherwise, the motorcycle may fall over.

If parking inside a garage or other buildings, be sure it is well ventilated and without any flames or sparks.

### **DANGER**

The muffler and exhaust pipe are very hot while the engine is running or just stopped. This can ignite a fire, resulting in property damage or severe personal injury. Do not idle or park your vehicle in an area where grasses or dry leaves or other flammable materials may contact with muffler or exhaust pipe.

Lock the steering lock to prevent theft.

### **NOTE**

When park the vehicle near the road at night, turn on position light, but do not leave the position light on for too long time, or the battery will be dead.

## Catalytic Converter

This motorcycle is equipped with a catalytic converter in the exhaust system. Platinum and rhodium in the converter will react with carbon monoxide and hydrocarbons, and then convert them into carbon dioxide and water resulting in much cleaner exhaust gases to be discharged into the atmosphere.

For proper operation of the catalytic converter, the following cautions must be followed:

Only use unleaded gasoline. Never use leaded gasoline. Leaded gasoline significantly reduces the service life of catalytic converter.

Do not coast the vehicle with the ignition switch and/or engine stop switch off. Do not attempt to start the engine for many times when the battery is discharged. Do not push or pull the vehicle or keep piston in work when gear is not in NEUTRAL. Under these conditions, unburned air/fuel mixture will flow into exhaust system, accelerate the reaction with the converter which leads the converter becomes overheated and damaged when the engine is hot, or reduce converter performance when the engine is cold.

### NOTE

Follow the below instructions to protect catalytic converter.

1. Only use unleaded gasoline. Even only small amounts of lead can stain your precious metals in catalytic converters causing catalytic converter failure.
2. Do not add anti-rust oil or engine oil into muffler which may result in catalytic converter failure.

## **Fuel Evaporation System**

Please contact CFMOTO dealer when fuel evaporation system failed. Don't modify the fuel evaporation system, or may not meet requirement of the fuel evaporation regulation. Tube connection should be well connected after repairing without air leakage, blocking, squeezing, broken and damage etc.. Fuel steam from fuel tank will be released into carbon tank through absorption tube. Absorbing fuel steam by active carbon when engine stops; Fuel steam of carbon tank will flow into combustor and burn when engine works, avoiding environment pollution in case of fuel stem released into air directly. Meanwhile, air pressure of fuel tank should be balanced by absorption tube. If inner pressure of fuel tank is lower than outside, it is available to replenish air pressure by air tube of carbon tank or absorption tube. So, tube system should be smooth running without blocking and squeezing, otherwise fuel pump will be damaged, fuel tank will also be deformed or broken.

# Safety Operation

## Safe Riding Technique

The following cautions are applicable for daily motorcycle use and should be carefully observed for safety and effective vehicle operation.

For safety, eye protection and a helmet are strongly recommended. You must be aware of safety regulations prior to riding the motorcycle. Gloves and suitable footwear should also be used for added protection.

You should wear protective apparel when riding in case of any collision. If not wear protective apparel, can not protect body safety. Before changing lanes, look over your shoulder to make sure the way is safe. Do not rely solely on the rear view mirror; you may misjudge a vehicle's distance and speed which can easily cause accidents.

When going up steep slopes, shift to a lower gear so that there's plenty of power for engine outputting torque rather than overloading the engine.

When applying the brakes, apply both the front and rear brakes. Applying only one brake for sudden braking may cause the motorcycle to skid and lose control.

When going down long slopes, control vehicle speed by releasing the throttle. Use the front and rear brakes for auxiliary braking.

In wet conditions, rely more on the throttle to control vehicle speed and less on the front and rear brakes. The throttle should also be used judiciously to avoid skidding when the rear wheel rapid acceleration or deceleration.

Riding at the proper speed and avoiding unnecessary acceleration are important Not only for safety and low fuel consumption, but also for longer vehicle life and quieter operation.

When riding in wet conditions or on loose roadway surfaces, vehicle performance will be reduced. All of your actions should be smooth under these conditions. Sudden acceleration, braking or turning may cause loss of control.

In empty area, exercise cautiously, slow down, and grip the fuel tank with the knees for better stability. When quick acceleration is necessary as in passing, shift to a lower gear can obtain the necessary power.

Do not down shift at too high r/min (rpm) to avoid damage to the engine.

Avoid unnecessary fabric tape which may twine rider or motorcycle.

## Pre-ride Inspection

Check the following items before daily riding will help keep your vehicle in the safest, most reliable condition. If any irregularities are found during these checks, please refer to the Maintenance and Adjustment chapter or contact your dealer for the action required to return the motorcycle to a safe operating condition.

Continue to ride after finding any irregularity may result in serious damage or a severe accident.

Item	Content
Coolant	Inspect the coolant level for right position in the coolant reservoir.
Front wheel	Inspect the front tire for excessive wear, cracks or cuts, imbedded things or other damage. Inspect the rim if any out of shape or damage.
Front brake	Inspect the thickness of front brake pad. Inspect the thickness of front brake disc and if any dirt or damage.
Engine oil	Inspect if the oil level is in the right position.
Rear brake fluid reservoir	Inspect if the level in the rear brake fluid reservoir is in the right position.
Rear wheel	Inspect the rear tire for excessive wear, cracks or cuts, imbedded things or other damage. Inspect the rim if any out of shape or damage.
Rear brake	Inspect the thickness of rear brake pad. Inspect the thickness of rear brake disc and if any dirt or damage.
Chain	Inspect the engine chain if any dirt and inspect if the chain tightness is in right state.
Front brake fluid reservoir	Inspect if the level in the front brake fluid reservoir is in the right position.
Dashboard	Inspect the dashboard for fault display. Inspect if fuel volume is enough for travelling.
Rear mirror	Inspect the visual position of rear mirror.

Lights	Inspect that all the lights can turn on properly, and the light hight of headlight is in accordance with the local regulations.
Control features	Inspect if it works normally and flexible for the handlebar, front and rear brake, throttle and switches.
Side stand / middle stand	Inspect if any looseness or damage for the return spring.
Stop switch	Inspect the stop switch for normal operation.



## **Additional Cautions for High Speed Operation**

**Brake:** Brake is very important, especially during high speed operation. It cannot be over forced. Check and adjust to get better performance.

**Handling:** Looseness in the handling parts may cause loss of control. Check to see whether the handlebar turns freely but has no shaking.

**Tires:** High speed operation requires that tires should be fastness, and good tires are crucial for riding safety. Examine their overall condition, inflate them to the proper pressure, and check the wheel balance.

**Fuel:** Have sufficient fuel supplying for high speed operation.

**Engine oil:** To avoid engine failure and result in loss of control, make sure the oil level is between level lines.

**Coolant:** To avoid overheating, check and make sure that the coolant level is between level lines.

**Electrical Equipment:** Make sure that the headlights, tail/brake light, turn signals, horn and etc. work properly.

**Fasteners:** Make sure that all nuts and bolts are tight and that all safety related parts are in good condition.

<b> WARNING</b>
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Please following traffic regulation, do not ride in highway with over speed. Riding at too high speed on highway will violate related regulations. Motorcycle is forbidden to ride in highway in some area.
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## Maintenance and Adjustment

The maintenance and adjustment outlined in this chapter must be carried out and must be done in accordance with the Periodic Maintenance Chart to keep the motorcycle in a good running condition.

**The initial maintenance is vitally important and can not be neglected.**

With a basic knowledge of mechanics and the proper use of tools, you should be able to carryout many of the maintenance items described in this chapter. If you lack proper experience or doubt your ability, all adjustments, maintenance, and repair work should be completed by a qualified technician. You can contact your dealer for help if you have other questions.

### Cautions

- ▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.
- = Have an authorized dealer perform repairs that involve this component or system.

## Break-in Maintenance Schedule

Item	Break-in Maintenance Interval (Service whichever interval comes first)			
	Calendar	Miles	Km	Remarks
<b>Engine</b>				
■ Engine oil and oil filter	-	600	1000	Replace
Idle	-	600	1000	Inspect
Throttle system	-	600	1000	
Drive chain and sprockets		600	1000	Inspect / Adjust
<b>Electrical system</b>				
■ Functions of electrical parts	-	600	1000	Inspect
Battery	-	600	1000	
Fuses or circuit breakers	-	600	1000	
<b>Brake system</b>				
Brake discs	-	600	1000	Inspect
Brake pads	-	600	1000	
Brake fluid level	-	600	1000	
Brake lever	-	600	1000	Inspect for free play
■ Brake hoses	-		1000	Inspect for damage and sealing

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

Item		Break-in Maintenance Interval (Service whichever interval comes first)			
		Calendar	Miles	Km	Remarks
<b>Wheels</b>					
	Tire condition	-	600	1000	Inspect
	Tire pressure	-	600	1000	
	Wheel bearings	-	600	1000	
<b>Suspension system</b>					
■	Rear shock absorber and front forks	-	600	1000	Inspect for leaking (maintain front forks and rear shock absorber according to the requirement)
<b>Cooling system</b>					
	Coolant level	-	600	1000	Inspect
■	Coolant	-	600	1000	
■	Radiator fan function	-	600	1000	
	Coolant hoses	-	600	1000	
<b>Steering system</b>					
■	Steering bearings	-	600	1000	Inspect

► = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

Item	Break-in Maintenance Interval (Service whichever interval comes first)			
	Calendar	Miles	Km	Remarks
<b>Other parts</b>				
■ Diagnostic connector	-	600	1000	Read with PDA
■ Moving parts	-	600	1000	Lubricate. inspect for flexibility
■ Bolts and nuts	-	600	1000	Inspect for fastness
■ Cables and wires	-	600	1000	Inspect for damage, bending and routing

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

## Periodic Maintenance Schedule

Item	Periodic Maintenance Interval (Service whichever interval comes first)				
	Calendar	Miles	Km	Remarks	
<b>Engine</b>					
	Engine oil and oil filter	-	3000	5000	Replace
	Oil strainer	-	3000	5000	Clean
■	Clutch	-	3000	5000	Inspect
	Idle	-	6000	10000	
■	Coolant	24M	18000	30000	Replace
	Throttle system	-	6000	10000	Inspect
■	Throttle valve	-	3000	5000	Clean
▶■	Air filter element	-	6000	10000	Inspect
		24M	12000	20000	Replace
■	Spark plug	-	3000	5000	Inspect
		24M	6000	10000	Replace
■	Valve clearance		24000	40000	Inspect

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

Item	Periodic Maintenance Interval (Service whichever interval comes first)				
	Calendar	Miles	Km	Remarks	
<b>Electrical system</b>					
■	Functions of electrical parts	12M	6000	10000	Inspect
	Battery	6M	3000	5000	
	Fuses or circuit breakers	6M	3000	5000	
■	Wires	12M	6000	10000	Inspect for damage, bending and routing
<b>Wheels</b>					
	Tire condition	12M	6000	10000	Inspect
		24M	12000	20000	
	Tire pressure	12M	6000	10000	
		24M	12000	20000	
■	Wheel bearings	-	6000	10000	
		-	18000	30000	

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

Item		Periodic Maintenance Interval (Service whichever interval comes first)				
		Calendar	Miles	Km	Remarks	
<b>Brake system</b>						
	Front and rear brake system	12M	6000	10000	Inspect	
		24M	12000	20000		
	Brake discs	12M	6000	10000		
		24M	12000	20000		
▶	Brake pads	12M	6000	10000		
		24M	12000	20000		
	Brake fluid level	12M	6000	10000		
		-	12000	20000		
	Brake lever	24M	12000	20000		Inspect for free play
		12M	6000	10000		
■	Brake hoses	24M	12000	20000	Inspect for damage and sealing	
		12M	6000	10000		
■	Brake fluid	24M	-	-	Replace	

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.



Item		Periodic Maintenance Interval (Service whichever interval comes first)			
		Calendar	Miles	Km	Remarks
<b>Suspension system</b>					
■	Suspension system	-	3000	5000	Inspect
■	Rear shock absorber and front forks	12M	6000	10000	Inspect for leaking (maintain the parts according to the requirement)
		24M	12000	20000	
■	Swing arms	-	6000	10000	Inspect
		-	18000	30000	
<b>Cooling system</b>					
	Coolant level	12M	6000	10000	Inspect
		24M	12000	20000	
■	Coolant	12M	6000	10000	
		24M	12000	20000	
■	Radiator fan function	12M	6000	10000	
		24M	12000	20000	
■	Coolant hoses	12M	6000	10000	
		48M	18000	30000	

► = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

Item	Periodic Maintenance Interval (Service whichever interval comes first)			
	Calendar	Miles	Km	Remarks
<b>Frame system</b>				
Frame	-	18000	30000	Inspect
<b>Steering system</b>				
■ Steering bearings	12M	6000	10000	Inspect
	24M	12000	20000	
<b>Chain</b>				
▶ Chain, rear sprocket and engine sprocket	12M	6000	10000	Inspect
	24M	12000	20000	

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

Item		Periodic Maintenance Interval (Service whichever interval comes first)			
		Calendar	Miles	Km	Remarks
<b>Other parts</b>					
■	Diagnosis connector	12M	6000	10000	Read with PDA
		24M	12000	20000	
■	Mobile parts	12M	6000	10000	Lubricate; inspect for flexibility
		48M	18000	30000	
■	Bolts and nuts	12M	6000	10000	Inspect for fastness
		48M	18000	30000	
■	Cables and wires	12M	3000	5000	Inspect for damage, bending and routing
		24M	9000	15000	
■	Pipes, ducts, hoses and sleeves	12M	6000	10000	Inspect for cracks, sealing and routing
		48M	18000	30000	

▶ = Severe Use Item. Reduce interval by 50% on vehicles subjected to severe use.

■ = Have an authorized dealer perform repairs that involve this component or system.

## Engine Oil

In order that engine, transmission, and clutch work properly, maintain the engine oil at the proper level, change the oil and replace the oil filter in accordance with the Periodic Maintenance Chart. During long time lubrication processes, not only produces dirt and metallic impurities, also will consume itself.

<b>▲WARNING</b>
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Motorcycle with insufficient, deteriorated or contaminated engine oil will cause accelerated wear and may result in engine or transmission seizure, accident and injury.
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## Oil Level Inspection

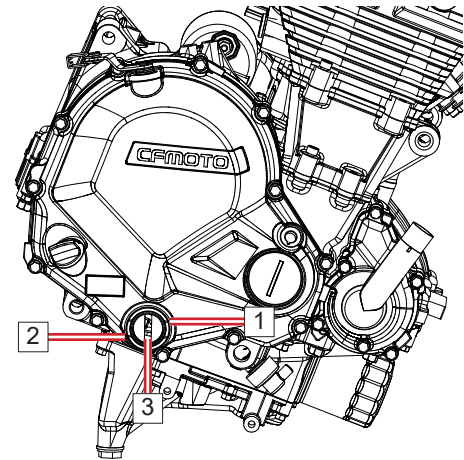
If the oil has just been changed, start the engine and run it for several minutes at idle speed. This fills the oil filter with oil. Stop the engine, and then wait several minutes until the oil settles.

### **▲WARNING**

Run the engine at high speed before the oil reaching every part for lubrication can cause engine seizure.

If the motorcycle has just been operated, wait several minutes for all the oil to drain down.

Check the engine oil level through the oil level mirror. With the motorcycle in level ground, the oil level should be between the upper **1** and lower level **2** lines through the oil level mirror **3**. If the oil level is too high, drain out the excess oil. If the oil level is too low, fill with much more oil with the same model until reach a line between the upper and lower lines.



## Oil and oil filter replacement

Pack the vehicle on the level ground.

Warm up the engine thoroughly, and then stop it.

Place an oil pan beneath the engine.

Remove the engine oil drain bolt **3** and washer.

Let the oil completely drain out.

### **▲WARNING**

Oil is a toxic substance. Dispose of used oil properly.

Remove the oil filter **2** and replace it with a new one.

### **▲WARNING**

Contact your local dealer to get special tools if without.

Apply a thin film on seal ring.

Replace with new gasket, install the drain bolt **3** and tighten to the specified torque.

### **▲NOTE**

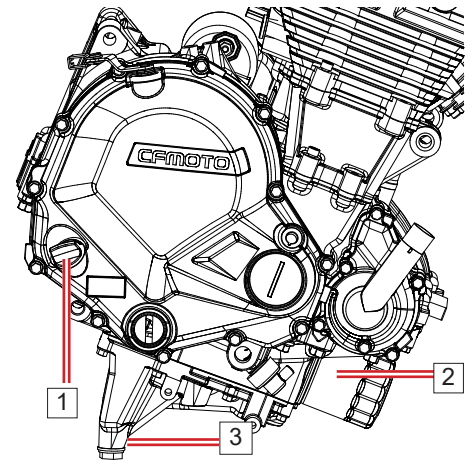
Replace all gaskets with new ones.

Remove the oil dipstick **1**;

Fill the engine between upper and lower level line with a good quality engine oil. Mount the oil dipstick **1**.

Start the engine.

Check the oil level and oil leakage.



## **Tightening Torque**

Drain bolt: 30N•m

Oil filter: 17.2N•m

Recommended Engine Oil: Type: SJ Class JASOMA2 oil

Viscosity: ELF, 10W-40

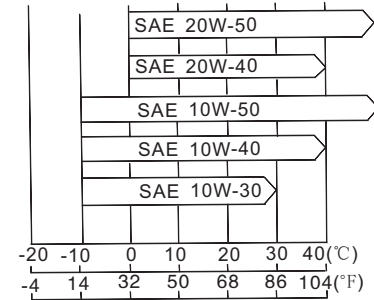
## Engine Oil Capacity

When filter is not removed: 2.0 L

When filter is removed: 2.2 L

When engine oil is completely drained: 2.6 L

CFMOTO recommends to use APISH oil or higher. JASO MA2 oil is the first choice, secondary is JASO Ma oil. Although 10W-40 engine oil is the recommended oil for most conditions, the oil viscosity may need to be changed to accommodate atmospheric condition in your riding area. Please choose the oil according to the right sheet.





## Cooling System

### Radiator and Cooling Fan

Check the radiator fins if obstruction by insects or mud, clean off any obstructions with a stream of low-pressure water.

**▲WARNING**

Keep your hands and clothing away from the fan blades when it's working to avoid any injury or death.

**▲WARNING**

Using high-pressure water to wash the vehicle could damage the radiator fans and impair the radiator's effectiveness. Install unauthorized accessories in front of the radiator or behind the cooling fan may cause interference with the radiator airflow, can lead to overheating and consequent engine damage.

### Radiator Hoses

Check the radiator hoses for leakage, cracks or deterioration, and connections for leakage or looseness daily before riding the motorcycle, and check in accordance with Periodic Maintenance Chart.

### Coolant

Coolant absorbs excessive heat from the engine and transfers it to the air by the radiator. If the coolant level is low, the engine overheats and may suffer severe damage. Check the coolant level daily before riding the motorcycle and do maintenance in accordance with the periodic maintenance chart. Replenish coolant if the level is low in accordance with the periodic Maintenance Chart.

## Coolant Information

To protect the cooling system (engine and radiator are consisting of aluminum parts) from rust and corrosion, the use of corrosion and rust inhibitor chemicals in the coolant is essential. If coolant contains corrosion, rust inhibitor chemicals, then no need to add separately.

### **WARNING**

Corrosion and rust remained in the engine and coolant, which should be disposed specially following the instructions. The chemicals inside are harmful to human body.

### **WARNING**

If hard water is used in the system, it will cause incrustation accumulation in the water hose, If the temperature falls below the freezing point of water, will lead to freezing and cause severe interference for the coolant system.

### **WARNING**

The bottled antifreeze on the market have anti-corrosion and anti-rust properties. When it is diluted excessively, it loses its anti-corrosion and anti-rust property. Dilute a permanent type of antifreeze in accordance with the instructions of the manufacturer.

### **NOTE**

When fill coolant for cooling system, the coolant color is green and contains ethylene glycol. When the environment temperature is below  $-35^{\circ}\text{C}$ , please use the coolant that freezing point is below  $-35^{\circ}\text{C}$ .

## Coolant Level Inspection

Situate the bike so that it is perpendicular to the ground.

Check the coolant level if it is between the upper and lower level lines

### ▲ NOTE

Check the level when the engine is cold(environment temperature).

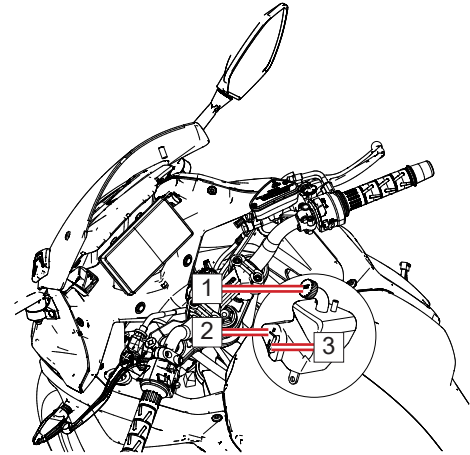
If the coolant level is lower than low level line, remove the reservoir cover [1] and add coolant into the reservoir tank until the coolant is between upper level [2] and lower level [3] line.

## Coolant Filling

Open the reservoir cover and add coolant to be between upper level [2] and lower level [3].

### ▲ WARNING

If coolant needs be added frequently, or the reservoir tank completely dry, there is probably leakage in the system. Have the cooling system inspected by an authorized dealer.



## Replacing coolant

Connect with your dealer for replacing coolant.

## Spark plug

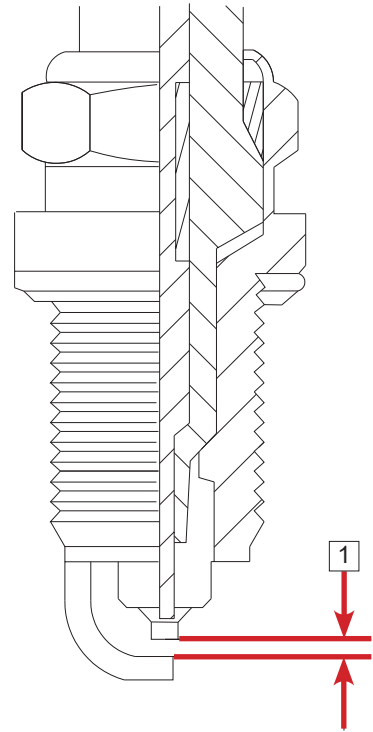
The spark plugs should be replaced in accordance with the Periodic Maintenance Chart.

Spark plug removal should be done by an authorized dealer.

Spark plug type: CR8E1

Spark plug clearance 1: 0.7 mm~0.9 mm

Tighten torque: 15 N•m



## Air Intake and Exhaust System

### Fuel & Exhaust Detecting System

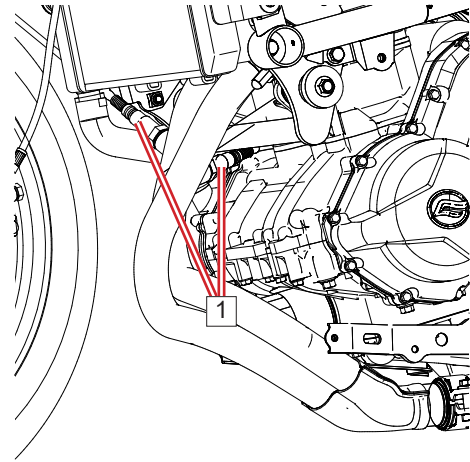
Fuel & Exhaust System is detected by Oxygen Sensor [1]. There is an Oxygen Sensor [1] installed on exhaust pipe. It detects Air & Fuel combustion condition by measuring oxygen density and transferring it to be electrical signal and pass to ECU. When ECU judges that combustion is not completely, ECU will give signals to TPS and Intake air temperature sensor to adjust fuel injection. By this way, the ratio of air against fuel can be optimized and make combustion completely.

### Air intake valve

The air intake valve is essentially a check valve which allows fresh air to flow only from the air cleaner into the exhaust port. Any air that has passed the air intake valve is prevented from returning.

Inspect the air intake valves in accordance with the Periodic Maintenance Chart. Also, inspect the air intake valves whenever stable idling cannot be obtained, engine power is greatly reduced, or there are abnormal engine noises.

Air inlet valve removal and inspection should be done by an authorized dealer.



## Valve clearance

Valve and valve seat may worn during operation, so need to adjust the valve clearance after using for a period.

### **WARNING**

If not adjust valve clearance when valve and valve seat worn during operation,, it will eventually cause the valves remaining partly open or no clearance,will reduce performance or make noise or serious engine damage. Valve clearance for each valve should be checked and adjusted in accordance with the Periodic Maintenance Chart. Inspection and adjustment should be done by an authorized dealer.

## Air filter

A clogged air filter restricts air intaking, increases fuel consumption, reduces engine power, and causes spark plug drowning. The air filter element must be cleaned in accordance with the periodic Maintenance Chart. In dusty, rainy, or muddy condition, the air filter element should be serviced more frequently than the recommended interval by an authorized dealer.

## Oil Storage Hose

Oil storage hose is located on the top of rear shock absorber(RH) where is to see if any oil or water has run down from the air filter housing.

If there are any oil/water in the hose, remove oil storage hose to drain it.

### **WARNING**

Be sure to install the storage hose after oil/water draining. Oil on tires and plastic or other parts will cause damage.

## **Throttle Control System**

Check the throttle grip play in accordance with the periodic Maintenance Chart, and adjust it when necessary.

### **Throttle Grip**

The throttle grip controls the throttle body valve. If the throttle grip play is too big and cause throttle operation out of tune. It means cable is too long which will cause a delay in throttle response, especially at low engine speed. Also, the throttle valve may not open fully at full throttle. On the other hand, if the throttle grip is too small, the throttle will be hard to control, and the idle speed will be erratic.

### **Inspection**

Check that the play of throttle grip and operation is neatly.

Adjust throttle grip if the play is improper.

## Adjustment

Turn throttle grip after installed cable.

Tighten the lock nut.

Adjust screw position.

Loosen the lock nut and adjust it until a play of 2mm~3mm is obtained at the throttle grip.

Tighten the lock nut.

### **▲WARNING**

Operation with improperly throttle adjusted or incorrectly cable routed may damage the cables and could result in an unsafe riding condition.

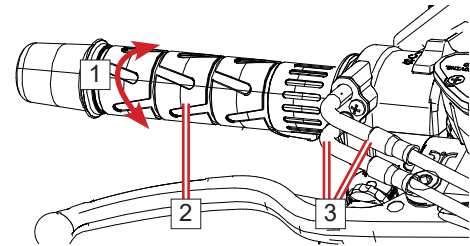
## Idle Speed

The idle speed of the vehicle has been adjusted before the vehicle out of factory. There is no need to do any adjustment by yourself, otherwise vehicle's performance will be affected. If there is any parts which will affect idle speed need to be replaced, contact with authorized local dealer for replacement and use PDA to diagnose and calibrate again the ECU.

### **▲WARNING**

Improperly adjustment of idle speed could result in an unsafe riding condition.

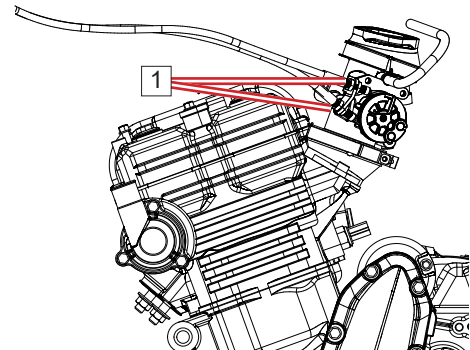
Idle Speed: 1450 r/min±145 r/min



1: Throttle grip play

2: Throttle grip

3: Throttle cable



1: Adjusting nut



## Throttle Body

Limit screw on throttle body had been set accurately, and can not be adjusted. Check if the idle speed is stable, if not, please contact authorized dealer who will arrange a specified professional people for maintenance.

## Clutch Adjustment

This vehicle is equipped with a hand operated clutch. Clutch lever free play: 5mm~15mm.

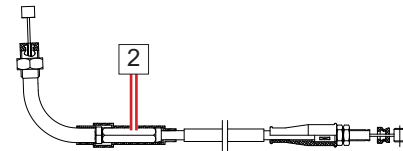
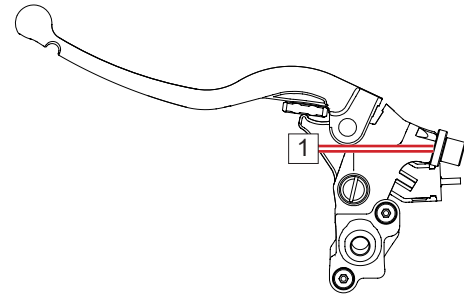
Clutch function: Clutch transmits the engine power to the transmission, and if necessary, shuts off the engine power transmitting.

When use clutch grip lever, should grasp totally or release totally: Clutch half linkage is not allowed when apply clutch lever, otherwise clutch will be damaged or burnt.

The adjusting knob **1** on clutch lever could be adjusted in a small range, and clutch cable adjusting thread sleeve **2** could be adjusted in a big range:

Minor adjustment: Loosen lock nut and rotate the adjusting nut for adjustment. At last, tighten the lock nut .

Major adjustment: Loosen lock nut and rotate the adjusting nut for adjustment. At last, tighten the lock nut .



**⚠ WARNING**

After adjust the clutch, have a test riding and inspect if clutch could take off. If vehicle can not meet the desired result after adjustment, please contact the authorized dealer for adjustment. If clutch worn severely or burn up, then should be replaced at once by authorized dealer.

## Drive Chain

The drive chain slack 1 and lubrication must be checked daily before riding in accordance with the Periodic Maintenance Chart for safety and preventing excessive wear. If the chain becomes badly worn or maladjusted, it will lead to be too loose or too tight, and result in falling off or generating resistance.

### **▲WARNING**

Chain make resistance or take off will reduce the engine operation efficiency or lock the rear wheel, may damage the vehicle severely and result in out of control.

## Chain Slack Inspection

Set the motorcycle up on its side stand

Rotate the rear wheel to check if the chain is too tight, and measure the maximum chain slack by pulling up and pushing down the chain. If the drive chain is too tight or too loose ,adjust to the standard value.

Standard value: 30mm~40mm

## Adjustment

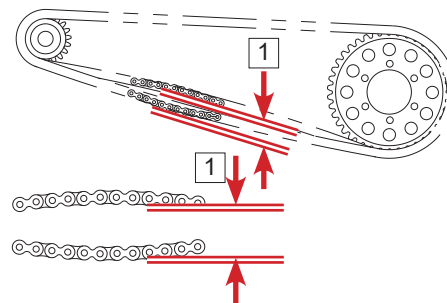
Loosen the left and right lock nuts of chain adjuster.

Remove the cotter pin of locknut on the right wheel shaft, and loosen the rear shaft locknut.

If the chain is too loose ,turn the left and right chain adjusting nuts clockwise and keep the adjustment the same for both left and right.

Turn the adjusting nut until chain slack is proper.

Make sure rear shaft have the same distance on left and right rear fork.



**▲NOTE**

Rear wheel shaft should be installed at same level on left and right rear fork.

**▲WARNING**

Misalignment of the rear wheel will result in abnormal wear, and may result in unsafe riding condition.

Tighten left and right chain adjuster lock nuts.

Tighten the rear shaft nut to the specified torque.

Rear shaft nut torque: 110 N•m

**▲NOTE**

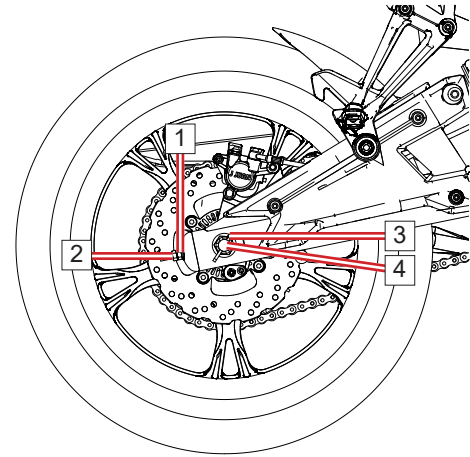
If there is no torque wrench, contact an authorized dealer.

Rotate rear wheel, measure the chain slack again and readjust if necessary.

**▲WARNING**

If the rear wheel shaft nut is not securely tightened, it may result in an unsafe riding condition.

Inspect rear brake.



- 1: Adjusting nut
- 2: Lock nut
- 3: Cotter pin
- 4: Rear wheel shaft nut

## Wear Inspection

Chain tensioning or hanging a 10 kg object on the chain.

Measure the length of 20 links which is elongated, if the stretch length is exceeded than the standard limit, then need to replace with new one.

Service Limit of drive chain 20-Link Length: 323mm

### **⚠ WARNING**

For your safety, please use the standard chain. When chain is elongated, never cut the chain and mount back onto the vehicle. Have it replaced by an authorized CFMOTO dealer.

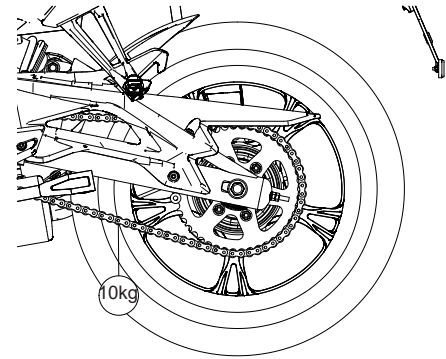
Rotate the rear wheel to inspect the drive chain for damaged rollers, loose pins and links.

Also inspect the sprockets for unevenly or excessively worn teeth, and damaged teeth.

### **⚠ NOTE**

Please refer to the sprocket wear condition as right pictures.

Have the drive chain and/or the sprockets replaced by an authorized CFMOTO Dealer when these situation happened.



1 Standard Teeth



2 Wear Teeth



3 Damaged Teeth



## Lubricating

Lubrication is necessary after riding for every 500km to 1000km. Use chain lubricating oil for maintenance. Clean the chain before lubrication if there is too much dusts on the surface of chain, specially after running on a damp road.

Apply lubricant to both sides of the rollers, so that it will penetrate to the rollers.

If the chain is especially dry, clean it before lubrication.

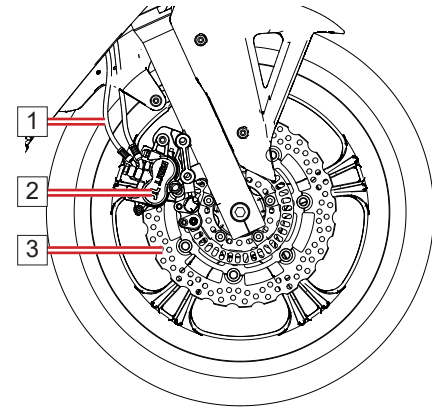
## Brakes

If your vehicle is configured for split-unit hydraulic brakes, please be sure to follow the below instructions to check and adjust brake system. In order to guarantee excellent performance of your vehicle, please repair and maintain the vehicle timely according to the Periodic Maintenance Chart. Have your vehicle inspected by authorized dealer.

### Front Brake Inspection and Adjustment

#### Inspection

1. Hold on the motorcycle by side stand, measure the free travel of front brake lever: 3mm~6mm.
2. Inspect brake fluid level; Inspect brake caliper [2]; Inspect brake fluid hose [1] and reservoir [4] for leaks or cracks; Inspect brake disc [3] for wear.



## Headlight, Taillight and Rear License Light

Headlight, taillight and rear license light assemblies are LED structure, which cannot be repaired if damaged or failed. Have your dealer replace the entire assembly if an LED is damaged or has failed.

## Rear Turning Light, Front Turning Light

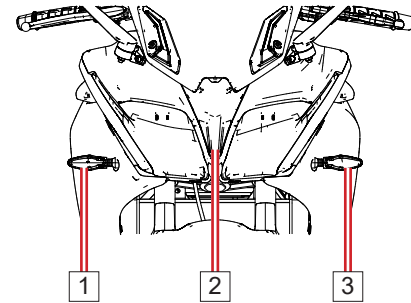
Rear turning light and turning light assemblies are LED structure, which cannot be repaired if damaged or failed. Have your dealer replace the entire assembly if an LED is damaged or has failed.

### Fuse

Fuse box is located under the seat. The main fuse is fitted on the starter relay. If a fuse is blown, inspect the electrical system if any damage, replace the fuse with the same ampere.

#### **⚠ WARNING**

Don't use any substitute wire for the standard fuse. Replace the blown fuse with a new one of the same ampere . Ampere value is shown on fuse.



1: Right turning light

2: Headlight

3: Left turning light

3. If you feel brake lever lack of pressure, there may be some air in the brake system; bleed the air completely, otherwise brake performance will be reduced or invalid. Bleeding air should be done by CFMOTO authorized dealer.

## Brake Fluid Reservoir

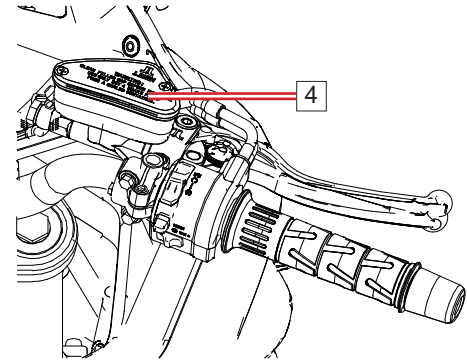
According to the Periodic Maintenance Chart, inspect the brake fluid level in both front and rear brake fluid reservoirs and change the brake fluid. The brake fluid should also be changed any time the fluid becomes contaminated with dirt or water.

## Brake Fluid Requirement

Use DOT4 brake fluid.

### **▲WARNING**

Do not spill brake fluid onto any painted surface or any plastic. Do not use fluid from a container that has been left open or unsealed for a long time..Check if any fluid leakage.





## Fluid Level Inspection

Check if the brake fluid levels in the front and rear brake fluid reservoir are both between the upper **1** and lower **2** level lines.

If the fluid level is lower than the lower level line, check for fluid leakage, and fill the reservoir to the upper level line.

### **⚠ WARNING**

Do not mix brake fluid from different brands. If can not make sure the brand and type of the fluid inside reservoir, drain out of them and refill again with new brake fluid.

## Replace Brake Fluid

Have authorized dealer to replace brake fluid.

### **⚠ NOTE**

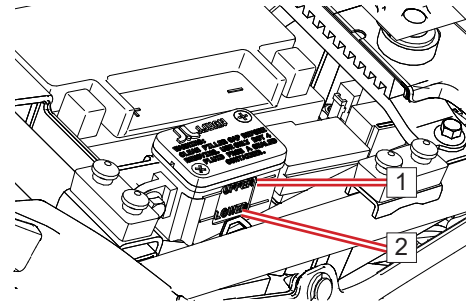
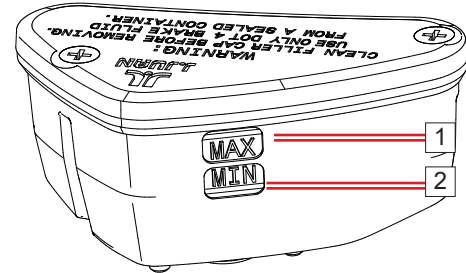
When the brake fluid level goes down, it causes the negative pressure inside the fluid reservoir, which may lead to the reservoir sag. Remove the reservoir cap to release the pressure. Adjust the reservoir gasket and then install the cap.

## Front and Rear Brake

Brake disc and brake pad will be worn after a long period use. Check or replace them according to periodic maintenance chart.

### **⚠ WARNING**

If the brake lever or pedal is soft when it is applied, there might be air in the brake hose or lack of fluid. If vehicle appears this dangerous condition, never drive the vehicle, have the brake checked immediately by an authorized CFMOTO dealer.



## Inspection

Turn the ignition key to “⊙” position.

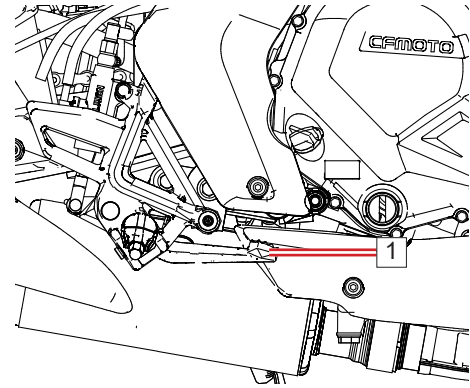
The brake light should be on when the front brake is applied.

Check front brake switch by dealer.

Check rear brake switch. Brake light should be on when press rear brake pedal **1** down.

If brake light can not be on, check cable connectors of front and rear brake switch.

Rear brake pedal travel: 10mm



## Front Fork

The front fork **1** operation performance and oil leakage inspection should be checked in accordance with the Periodic Maintenance Chart.

### Front Shock Absorber Inspection

Holding the front brake lever, compress the front fork up and down by several times for inspecting smooth stroke.

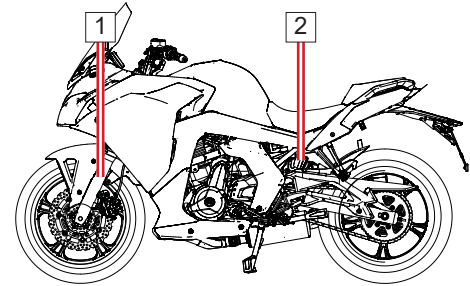
Visually inspect the front fork for oil leakage, scoring or scratches.

After riding, check the front fork if any mud on it, clean it or could lead to oil seal damage and absorber oil leakage.

If you have any doubt about the front shock absorber, contact authorized CFMOTO dealer.

## Rear Shock Absorber

The rear shock absorber **2** operation performance and oil leakage should be checked in accordance with the Periodic Maintenance Chart.



## Rear Shock Absorber Inspection

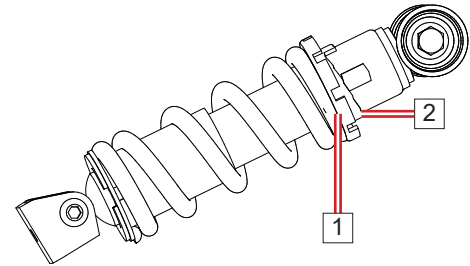
Press the seat several times to check if the rear shock absorber work smooth.

Visually inspect the rear shock absorber if any oil leakage.

If you have any doubt about the rear shock absorber, contact authorized CFMOTO dealer.

## Spring Preload Adjustment

Preload of rear absorber spring is adjusted by infinity adjustment. Use special tool to rotate spring rotate adjuster **1** and **2**, to press the spring and get a preload.



### **⚠ WARNING**

This unit contains high pressure nitrogen gas. Mis-handling can cause explosion. Please read related structure and do not incinerate, puncture or open it.

## Wheel

Tubeless tires are installed on this vehicle wheels. There is a tubeless mark **3** on the side of wheel.

### **▲WARNING**

The tires, rims, and air valves on this motorcycle are designed only for tubeless type wheels. Only use recommended standard tires, rims and air valves. Do not install tube-type tires on tubeless rims. If tires are not installed well may cause tire deflation. Do not install a tube inside a tubeless tire.

## Tire

### **Payload and Tire Pressure**

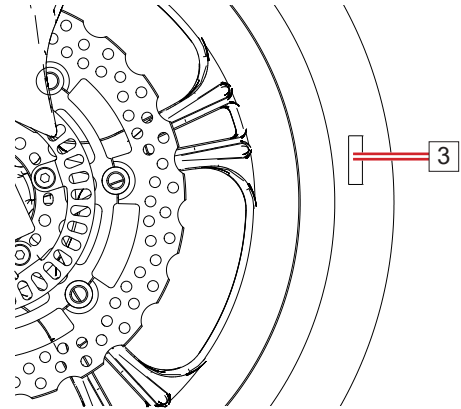
Failure to maintain proper tire pressures or exceed the tire load bearing limit that, may effect the operation and vehicle performance, or result in loss of control.

The maximum recommended load weight on addition to the vehicle is 155kg, including rider, baggage and accessories.

Remove air valve cap.

Check the tire pressure by using an accurate gauge.

Make sure to install the air valve cap securely.

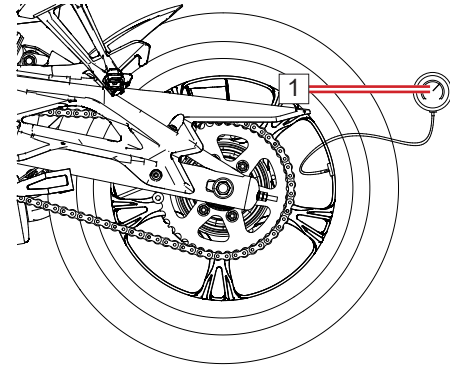


**▲NOTE**

- 1: When the environment temperature is below  $-10^{\circ}\text{C}$  outside, suggest to place the vehicle indoor if need to store for long time.
- 2: Do not use side stand to park vehicle for long time in winter, should use park stand bracket to park vehicle, and the tire could not bear the vehicle weight;
- 3: Do not sink the tires into snow or ice for long time when park vehicle in winter;
- 4: When park vehicle for long time outside in winter, suggest to bed some tree branch, waste paper, or sand under tires that to keep warm for tires.

**▲NOTE**

Measure the tire pressure with pressure needle **1** or other measurement tools when the tires are cold (that is, when the motorcycle has not been ridden for more than 3 hours). Tire pressure is affected by changes in ambient temperature and altitude and so the tire pressure should be checked and adjusted when your riding involves wide variations in temperature or altitude.



**Tire pressure(When Cold)**

<b>Front wheel</b>	<b>250 kPa</b>
<b>Rear wheel</b>	<b>250 kPa</b>

## Tire Wear, Damage

When tire tread wear exceed the use limit, the tire becomes more susceptible to be punctured and failure. An accepted estimate is that 90% of all tire failures occur during the last 10% of tread life. So it is unsafe that continue to use tires when they are bald. In accordance with the Periodic Maintenance Chart, measure the depth of the tread with a depth gauge, and replace any tire that has worn down to the minimum allowable tread depth.

## Minimum Tread Depth

<b>Front tire</b>	0.8 mm~1 mm
<b>Rear tire</b>	0.8 mm~1 mm

Visually inspect the tire for cracks and incisions, replace the tire in case of severe damage.

Swelling or high spots indicates the tire is damage.

Remove any embedded stones or other foreign particles form the tread.

### **NOTE**

Most countries may have their own regulations requiring a minimum tire tread depth; Be sure to follow the regulation. Have the wheel balance inspected whenever a new tire or rim is installed.

### **DANGER**

To ensure safe handling and stability, use only the recommended standard tire and pressure. If tires that have been punctured and repaired, they will not have the same capabilities as undamaged tires. Do not exceed 100km/h within 24 hours after repair and never exceed 130km/h at any time after that.

**▲NOTE**

When operating on public roads, keep maximum speed under traffic law limits.

**Tire specification (Tubeless)**

<b>Front</b>	<b>120/70ZR17M/C58W</b>
<b>Rear</b>	<b>160/60ZR17M/C69W</b>

**▲WARNING**

Use the same tires from same manufacturer for both front and rear wheel.

**▲WARNING**

New tire is smooth which can cause loss of control and injury. Normal friction surface can be formed after 160km break-in period. Avoid sudden, great brakes, enormous acceleration and sharp turns during break-in period.



## **Battery**

The battery in this vehicle is maintenance-free battery. Therefore, it is unnecessary to inspect the amount of battery electrolyte or add distilled water. There is no necessary to remove the seal strip once the electrolyte is added into the battery. To ensure optimum service life of the battery, charge the battery properly to ensure the battery have enough power to the starter motor. When the motorcycle is used frequently, battery will be fully charged by the motorcycle charging system. If the motorcycle is only occasionally used, or used in a short time during each ride, the battery could be discharged. Battery can also discharge automatically. The rate of discharge varies with battery type and ambient temperature. When environment temperature rises, for example, the rate of discharge could increase one time when temperature rises every 15°C.

In cold weather, if battery is not proper charging, may easily cause electrolyte freezes, which may lead to battery cracking and metal electrode plate out of shape. Proper and fully charging for battery could improve freeze-proof capability.

### **Battery Sulfation**

Sulfation is a common battery failure occurs when the battery is left in a discharged condition for an extended time. Sulfation is that an abnormal byproduct generated by the chemical reactions within a battery. When battery happens sulfation and still continue to discharge, will result that battery electrode plate become permanently damaged and will not hold a charge. If this happens, should replace it with a new battery.

### **Battery Maintenance**

Always keep the battery fully charged or may damage the battery and result in a shorter life. If ride the vehicle infrequently, inspect the battery voltage weekly with a voltmeter. If it drops below 12.8 volts, the battery should be charged with an appropriate charger (check with your dealer). If you will not use the vehicle

for longer than 2 weeks, the battery should be charged with an appropriate charger. Don't use an automotive-type quick charger that may overcharge the battery and damage it.

## Battery Recharger

Contact your dealer for the charger specification.

## Battery Charging

Remove the battery from the vehicle.

Connect the wire from the charger and charge the battery at a rate  $1/10$  A of the battery capacity. For example, the charging rate for a 10Ah battery would be 1.0 ampere.

Ensure that the battery is fully charged before installation.

### **WARNING**

Never remove the sealing strip, or the battery can be damaged. Don't install a conventional battery in this motorcycle, or the electrical system can't work properly.

### **NOTE**

If you charge the maintenance-free battery, never fail to observe the instructions shown in the label on the battery.

### Removing the Battery

Remove the front and rear seat.

Disconnect the wires from the battery first for negative (-) terminal, then disconnect positive (+) terminal.

Take the battery out of the box.

Clean the battery with a solution of baking soda and water. Ensure that the positive and negative cable terminals are clean.

#### Battery Installation

Place the battery inside the battery box.

Connect the wire to the positive (+) terminal first, then connect the wire to the negative (-) terminal.

<b>▲NOTE</b>
--------------

Positive (+) terminal and negative (-) terminal connecting order is opposite with battery removal when install battery.
---

<b>▲WARNING</b>
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Incorrect terminal connection could serious damage the electrical system.
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Reinstall the positive and negative protector.

Reinstall the removed parts.

## Foot Pedal

Lubricate foot pedal with silicone oil periodically. (Refer to maintenance chart for more information)

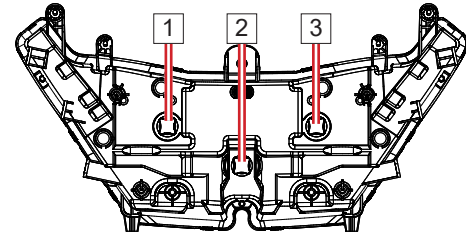
## Light

### High Beam and Low Beam Adjustment

High beam and low beam light is adjustable. When high beam and low beam light is not suitable, adjust the adjusting bolt of headlight. Rotate adjusting bolt until light beam is suitable.

#### **▲NOTE**

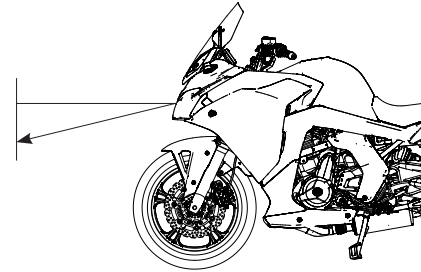
Front and rear wheels touch down the ground and driver seat on the vehicle, then adjust the optical axis for high/low beams. Adjustment of high/low beams should be accordance with local regulations.



1: Adjusting bolt for low beam(LH)

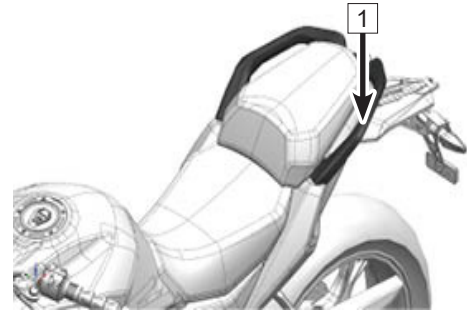
2: Adjusting bolt for high beam

3: Adjusting bolt for low beam(RH)

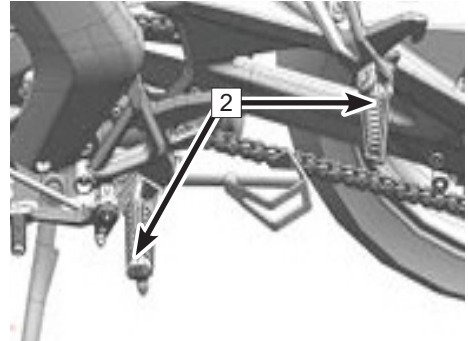


## Passenger Armrest And Footrest Kit

Passenger armrest **1** is the holding part mounted on motorcycle for passenger to hold during driving, including strap and handle.



Footrest **2** is the pedal part mounted on motorcycle for driver and passenger to treadle.



# Cleaning the Motorcycle

## General Precautions

Keeping your motorcycle clean will improve its appearance, optimize its performance and extend the life of various components. Covering your motorcycle with a high quality, breathable motorcycle cover will help protect the vehicle.

- Always clean the motorcycle after the engine and muffler cool down.
- Avoid applying detergent to seals, brake pads, and tires.
- Wash vehicle by hand.
- Avoid all harsh chemicals, solvents, detergents, and household cleaning products like ammonium hydroxide.
- Gasoline, brake fluid, and coolant will damage painted and plastic surfaces: Wash them off immediately.
- Avoid metal brushes, steel wool, and all other abrasive pads or brushes to brush the vehicle.
- Be careful when washing the windshield, headlight cover, and other plastic parts as they can be easily scratched.
- Avoid high water pressure, as it may penetrate seals and electrical components, resulting in vehicle damage.
- Avoid spraying water in waterproof area such as air intakes, fuel system, electrical components, muffler outlets and fuel tank lock.

## Washing Vehicle

- Rinse with cold to remove any loose dirt.
- Mix a mild neutral detergent (specified for motorcycles or automobiles) and water in bucket. Use a soft cloth or sponge to wash your motorcycle. If needed, use a mild degreaser to remove any oil or grease build up.
- After washing, rinse your motorcycle with clean water to remove any residue (residue from the detergent can damage the components of your motorcycle).
- Dry off your motorcycle with a soft cloth to avoid scratches.
- Start the engine and allow it idle for several minutes. The heat from the engine will help dry off the moist areas.
- Carefully ride your vehicle at a low speed and apply the brake several times. Doing so help to dry the brakes and restores to be normal operating performance.
- Lubricate the drive chain to prevent rusting.

### NOTE

After a ride in an area where the roads are salted or near the ocean, clean the motorcycle with cold water immediately. Don't use warm water to wash your vehicle as it accelerates the chemical reaction of the salt. After dried, apply an anti-corrosion sprays on all metal or chrome surfaces to prevent corrosion. In the case of riding during rainy day or just washing the motorcycle, condensation may form on the inside of the headlight lens. Start the engine and turn on the headlight to remove the moisture.

## Painted Surface

After washing your motorcycle, coat the painted surfaces, both metal and plastic, with a commercially available motorcycle/automobile wax. Wax should be applied every three months or as conditions required, avoid any fissure or lackluster. Always use non-abrasive products and apply them according to the instructions on the container.

## Windshield and Other Plastic

After washing, use a soft cloth to gently dry off plastic parts. When dry vehicle, treat the windshield, headlight lens, and other unpainted plastic parts with an approved plastic cleaner or polishing process.

### **WARNING**

Plastic parts may deteriorate and break if they come in contact with chemical substances or household cleaning products such as gasoline, brake fluid, window cleaners, thread fastener glue, or other harsh chemicals. If a plastic part comes in contact with any harsh chemical substance, wash it off with water, and then inspect for damage. Avoid using abrasive pads or brushes to clean plastic parts, as they will damage the plastic parts surface.

## Chrome and Aluminum

Chromium alloy and uncoated aluminum parts exposed in the air can be oxidized, surface become dull and lackluster. The parts should be cleaned with a detergent and polished with a spay polish. Both painted and unpainted aluminum wheels can be cleaned with special detergent.



## Leather, Vinyl, and Rubber Products

If your motorcycle has leather accessories, should use a special leather cleaner/treatment to clean. Washing leather parts with detergent and water will damage them, shortening their life. Vinyl parts should be cleaned separately, tires and other rubber components should be treated with a rubber protective agent to preserve their life.

<b>▲ WARNING</b>
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Special care must be taken when treat with tires, the rubber protective agent will not effect the tire function. But if not treat well, it may decrease the traction between tire and ground, causing the vehicle loss of control.
--

## Storage

### Preparation for Storage

Clean the entire vehicle thoroughly.

Run the engine for about 5 minutes, shut it off, and then drain the engine oil.


**▲WARNING**

Motorcycle oil is a toxic substance. Dispose the used oil properly. Keep the used oil out of reach of children. If skin contacts the oil should be treated immediately.

Fill with fresh engine oil.

Empty the fuel tank with a fuel pump or siphon.

**▲WARNING**

Gasoline is extremely flammable and explosive under certain conditions. Turn the ignition key to “” position when operation the vehicle. Don't smoke. Make sure the area is well ventilated and free of any source of flame or sparks; this includes any appliance with a pilot light. Gasoline is a toxic substance. Dispose of gasoline properly. Keep the used oil out of reach of children. If skin contacts the oil should be treated immediately.

Empty the fuel system by running the engine at idle speed until the engine stalls. (Note: Remove the fuel pump plug, or it may damage the fuel pump. If vehicle stores for a long time, the fuel will spoil and clog the fuel system.)

Reduce tire pressure by 20% during storage period.

Raise wheels off the ground by wood board, to keep dampness away from the vehicle.

Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or on the brakes.

Lubricate the drive train and all cables.

Remove the battery and store it out of the sun and in a cool, dry place. Ensure that the battery is fully charged according to periodic maintenance chart.

Tie plastic bags over the muffler to prevent moisture from entering.

Put a cover over the motorcycle to keep dust and dirt from collecting on it.

## **Preparation after Storage**

Remove the plastic bags from the muffler.

Install the battery in the motorcycle and charge it if necessary.

Fill the fuel tank.

Check all the points listed in Pre-Ride Inspection section.

Lubricate the pivots.

## General troubles and causes

Problem	Components	Possible cause	Solution
Engine fails to be started	Fuel System	No fuel in fuel tank	Refuel
		Pump blockage or damage: poor fuel quality	Clean or replace
	Ignition System	Spark plug failure: excessive carbon deposits, too long time usage	Clean or replace
		Spark plug cap failure: Poor contact or burning	Clean or replace
		Ignition coil failure: poor contact or burning	Clean or replace
		ECU failure: Poor contact or burning	Clean or replace
		Trigger coil failure: poor contact or burning	Clean or replace
		Stator failure: poor contact or burning	Clean or replace
		Wiring failure: poor contact	Clean or replace
	Cylinder compression	Starting mechanism failure: worn or damaged	Clean or replace
		Intake and exhaust valves, valve seats faulty: too much fuel colloidal or too long time use	Clean or replace
		Cylinder, piston, piston ring failure: too much fuel colloidal or wear	Clean or replace
		Intake manifold leakage: too long time use	Clean or replace
		Valve timing faulty	Clean or replace

Insufficient power	Valve and piston	Intake and exhaust valves, piston excessive carbon deposits: poor fuel quality and poor oil quality	Repair or replace
	Clutch	Clutch slips: poor oil, too long time use and overloaded	Adjust or replace
	Cylinder and ring	Cylinder, piston rings wear: poor oil quality and too long time use.	Replace oil
	Brake	Incomplete separation of brake: the brake is too tight	Adjust
	Main chain	The drive chain is too tight: improper adjustment	Adjust
	Engine	Engine overheats: too rich or too lean mixture, poor oil, fuel quality, shelter, etc	Adjust or replace
Insufficient power	Spark plug	Improper spark plug gap, specification is 0.8mm -0.9mm	Adjust or replace
	Intake pipe	Air leakage of intake pipe: too long time use	Adjust or replace
	Cylinder head	Air leakage for cylinder head or valves	Adjust or replace
	Electric system	Electrical system failure	Inspect or repair
	Air filter	Clogged air filter	Clean or adjust
Headlights and tail lights do not work	Cable	Poor connections	Adjust
	Left and right switches	Switch fault or damage	Adjust or replace
	Headlight	Bulb and lamp holder failure or damage	Adjust or replace
	Regulator	Loose connection or burnt	Inspect or replace
	Magneto	Inspect the coil: poor connection or burnt	Inspect or replace

Horn not work	Battery	No electricity	Recharge or replace
	Left switch	Horn button fault or damage	Adjust or replace
	Cable	Poor connection	Adjust or repair
	Horn	Horn damage	Adjust or replace
Alarm system fault	Battery	No electricity	Recharge or replace
	Cable	Poor connection	Adjust or repair
	Speaker, warning light	Speaker and warning light damage	Replace
	Alarm control box	Alarm control box damage	Adjust or replace

Listed above are the common faults of the motorcycle. If your motorcycle has failed (especially the electronic fuel injection system, fuel evaporation system and alarms system ), please contact CFMOTO authorized dealer timely to check and repair vehicle.

**Caution: Do not try to fix faults by yourself, otherwise it will cause accidents easily. You are responsible for the accidents if you fail to follow the caution.**

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