



CF650

OWNER'S MANUAL

READ THIS MANUAL CAREFULLY

It contains important safety information



CFMOTO

FORWARD

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, recreational vehicle.

- All terrain vehicle (ATV)
- Utility vehicle (Patrol, forest protecting and hunting)
- Motorcycles
- Scooters
- Travelling 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 same displacement of air-cooled engine, engine cooling effect is better, oil temperature can be adjusted more freely, more powerful and lower fuel consumption, longer engine working life.

This motorcycle is designed for not only for working, but also for fun and adventure.

For safe and enjoyable operation of your vehicle, be sure to follow the instructions and recommendations in this owner's manual. Your manual contains instructions for minor maintenance, but information about major repairs is outlined in the CFMOTO service manual and should be performed only by CFMOTO service dealer and technician authorized by CFMOTO.

Your CFMOTO dealer knows your vehicle best and is interested in your total satisfaction. Be sure to return to your dealership for all of your service.

It's essential to make basic pre-ride inspection. At the same time, regular maintenance is also necessary for your driving and use. This manual should be considered a permanent part of the motorcycle and should remain with the motorcycle when resold.

Wish you a pleasant drive.

The model is subject to standard: Q/CFD 004-2011.

Compiling the owner's manual is in accordance with standard: GB9969.1-1998 and GB/T19678-2005.

IMPORTANT SAFETY INFORMATION

Your safety, and the safety of others, is very important. And operating this motorcycle safely is an important responsibility. To help you make informed decisions about safety, we have provided operating procedures and other information on labels and in this manual. This information alerts you to potential hazards that could hurt you or others.

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

DANGER

This signal means “You WILL be KILLED or SERIOUSLY HURT if you don’ t follow instructions” .

WARNING

This signal means “You CAN be KILLED or SERIOUSLY HURT if you don’ t follow instructions” .

CAUTION

This signal means “You CAN be HURT if you don’ t follow instructions” .

CAUTION

This motorcycle can only be used by eligible riders with proper way. At the same time, please pay attention to following instructions.

Do not make any modification on this motorcycle without our approval. Any modification about this motorcycle or electric components will cause potential side effect on performance, emission and noise control.

Be sure to follow your local traffic rules and laws when riding.

All information in this publication is based on latest production information 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.

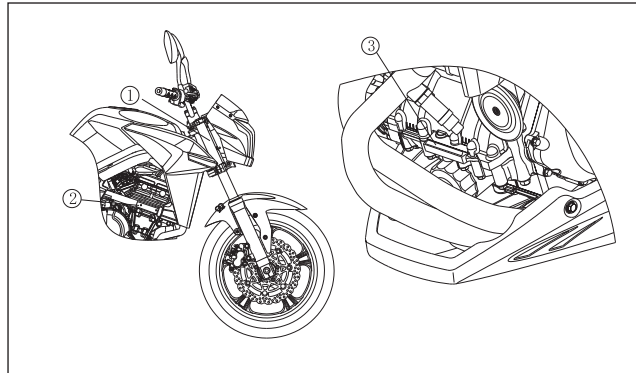
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VIN AND ENGINE SERIAL NUMBER

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 every lock because all lock use same key.



① Vehicle identification number: _____

② Name plate: _____

③ Engine serial number: _____

SPECIFICATIONS

Performance

Max. Power 52.00kW/8500rpm

Max. Torque 62.00N · m/7000rpm

Min. turn radius 2.70m

Size

Length: 2120mm

Width: 780 mm

Height: 1100 mm

Wheel base: 1415 mm

Min. ground clearance: 150 mm

Dry weight: 206 kg

Engine

Type: Two cylinder in-line, 4-strokes, DOHC、8 valves、liquid-cooled

Displacement: 649.3mL

Bore × Stoke: 83mm×60mm

Compression ratio: 11.3:1

Starting system: Electric starter

Number of cylinder: 2

Firing order: from left to right, 1-2

Carburetion system: EFI (electronic fuel injection)

Ignition system: CDI (transistorized ignition)

Ignition timing (before compression to top dead point) : 10BTDC@1300rpm~

(Advance angle of ignition): 33 BTDC@6000rpm

Spark plug: CR8EI

Lubricating system: Forced lubrication (semi-dry sump)

Engine oil Oil type: SAE 15W-40/SG

Oil capacity: 2.6 L

Coolant capacity: 1.6L

Transmission

Transmission type: 6-speed, return shift

Clutch: Wet, multi disc

Driving system: Chain drive

Primary reduction ratio: 2.095

Final reduction ratio: 3.067

Overall drive ratio: 5.474(Top gear)

Gear ratio	1 st	2.353
	2 nd	1.714
	3 rd	1.333
	4 th	1.111
	5 th	0.966
	6 th	0.852

Frame

Castor: 24.5°

Tire size: Front: 120/70 R17 (58H)

Rear: 160/60 R17 (69H)

Rim size: Front: 3.50 × 17

Rear: 4.50 × 17

Capacity of fuel tank: 17L

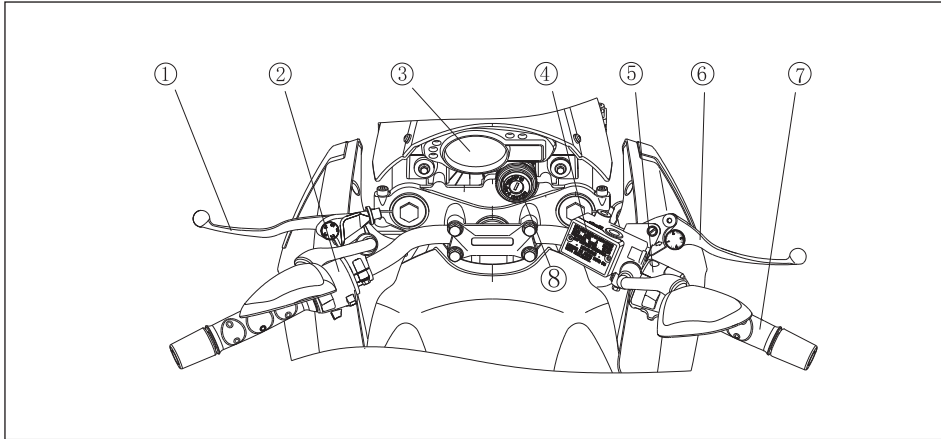
Electric components

Battery: 12V10Ah

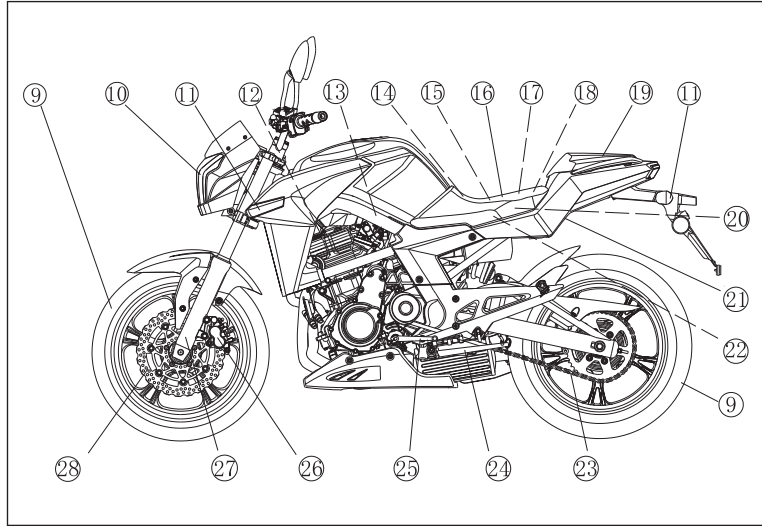
Headlight: High beam: H7 12V55W Low beam: H7 12V55W

Tail/Brake light: LED 12V 0.39W/1.55W

LOCATION OF PARTS

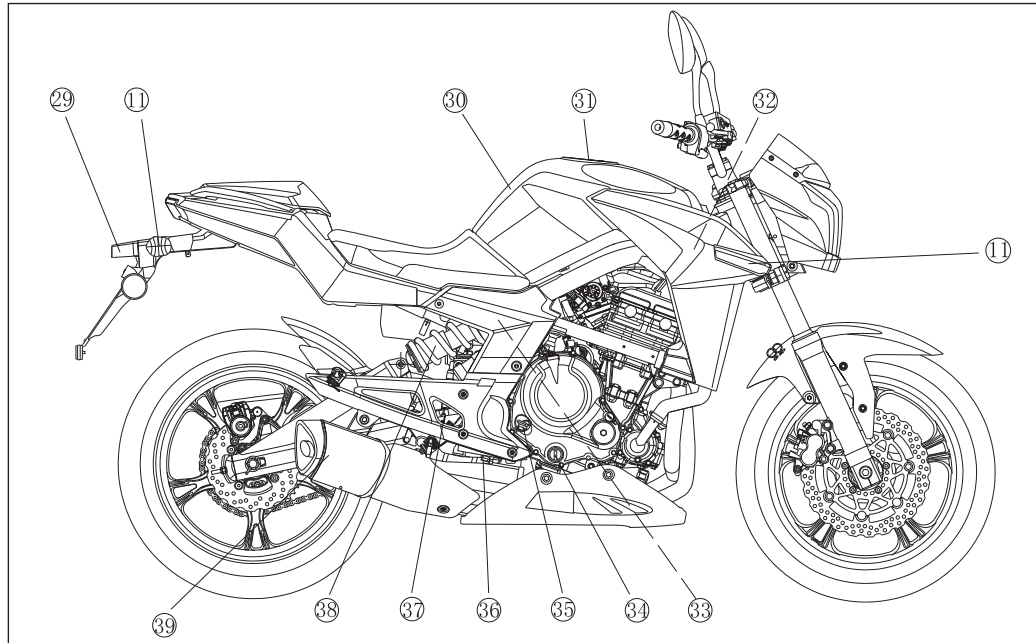


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|---------------------------------|---------------------------------|
| ① Clutch lever | ⑤ Right handlebar switches |
| ② Left handlebar switches | ⑥ Front brake lever |
| ③ Meter instruments | ⑦ Throttle grip |
| ④ Brake fluid reservoir (Front) | ⑧ Ignition switch/Steering lock |



- | | | | |
|---------------------|--------------------------------|------------------------------|-----------------------|
| ⑨ Front wheel | ⑭ Main fuse | ⑲ Rear seat | ⑳ Side stand |
| ⑩ Headlight | ⑮ Battery | ㉑ Helmet holding cable | ㉒ Shift pedal |
| ⑪ Turn signal light | ⑯ Main seat | ㉓ Seat lock | ㉔ Front brake caliper |
| ⑫ Spark plug | ⑰ Brake fluid reservoir (Rear) | ㉕ Lever of opening rear seat | ㉖ Front fork |
| ⑬ Air filter | ⑱ Tools/Storage compartments | ㉗ Drive chain | ㉘ Front brake disc |

(Broken line means it cannot be seen)



- | | | |
|---------------------------|-----------------------------------|-------------------------------|
| ②⑨ Licence plate light | ③③ Rebound damping force adjuster | ③⑦ Switch of rear brake light |
| ③⑩ Fuel tank | ③④ Oil level window | ③⑧ Rear shock absorber |
| ③① Cap of fuel tank | ③⑤ Cap of oil filler | ③⑨ Muffler |
| ③② Coolant reservoir tank | ③⑥ Rear brake pedal | |

(Broken line means it cannot be seen)

LOAD AND ACCESSORIES INFORMATION

WARNING

Incorrect loading, improper installation or use of accessories, or modification of your motorcycle may result in an unsafe riding condition. Before you ride the motorcycle, make sure that the motorcycle is not overloaded and that you have followed these instructions.

Always use CFMOTO genuine parts and accessories. Non-genuine parts or accessories, improper installation or use of accessories, or motorcycle modification, will void motorcycle warranty, can negatively affect performance and can even be illegal. In selecting and using parts or accessories, and in loading motorcycle, you are personally responsible for your own safety and the safety of person involved.

NOTE

CFMOTO parts and accessories have been specially designed for use on CFMOTO motorcycles. We strongly recommend that all parts and accessories you use are genuine CFMOTO components.

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

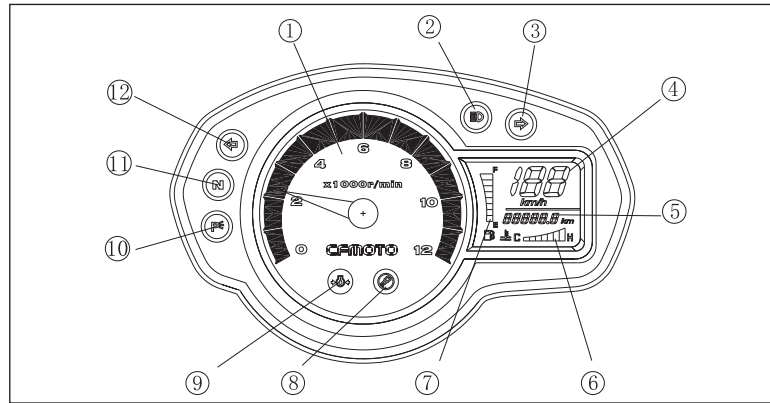
Important information before ride

- 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、 You should instruct any passenger before riding to keep his/her feet on the passenger footpegs and hold on the driver or grab rail. Do not carry a passenger unless he or she is tall enough to reach footpegs and footpegs are available.
- 3、 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.
- 4、 Baggage should be securely attached. Make sure that baggage will not move around while you're riding. Recheck baggage security as often as possible and adjust if necessary.
- 5、 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.
- 6、 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.

- 7、 Weight attached to handlebar or front fork will increase the mass of steering and can result in unsafe riding condition.
- 8、 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 due to aerodynamic forces acting on these surfaces while motorcycle is in operation. Poorly designed or installed items can result in unsafe riding condition.
- 9、 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: Weight of rider, passenger, baggage and accessories must not exceed 180kg.


GENERAL INFORMATION



- | | | |
|-------------------------------------|---|------------------------------------|
| ① Tachometer | ⑥ Water temperature indicator light | ⑪ Neutral indicator light |
| ② High beam indicator light | ⑦ Fuel level indicator light | ⑫ Left turn signal indicator light |
| ③ Right turn signal indicator light | ⑧ EFI trouble indicator light | |
| ④ Speedometer | ⑨ Engine oil pressure warning indicator light | |
| ⑤ Odometer | ⑩ Neutral indicator light | |

Tachometer gauge ①



The tachometer shows the engine speed in revolutions per minute. There's "RED" zone in right side of tachometer. Engine RPM in the red zone is above maximum recommended engine speed and is also above the range for good performance.

When ignition key is turned to “”, the tachometer needle momentarily point to last reading to check its operation. If the tachometer doesn’ t work correctly, have it inspected by an authorized CFMOTO dealer.


 **CAUTION**

Engine r/min (RPM) should not be allowed to enter the red zone. Operation in the red zone will overstress the engine and may cause serious engine damage.

High beam indicator light  ②

When light switch is “” and dimmer switch is “” then high beam indicator light is lit.

Right turn signal light  ③

When turn switch is “” right turn signal switch flashes on.

Speedometer  ④

Speedometer is at the right side of meter instrument, it shows speed of the vehicle.

Odometer  ⑤

The odometer shows total distance in Km or Miles that vehicle has been ridden.

Coolant temperature warning indicator  ⑥

When coolant temperature is at C zone, it shows coolant temperature is normal. When coolant temperature goes onto H zone, it shows coolant temperature is too high. If warning light goes on, stop the engine and check the coolant level in the reserve tank after the engine cools down, or go to

your dealer for consultation.

 **CAUTION**

When water temperature warning light flashes, don't let the engine continue running. Prolonged engine operation will result in severe damage from overheating.

Fuel gauge⑦ :

Used to tell how much fuel remains. “F” indicates the total amount of fuel is 17L when fuel tank is full. “E” indicates there is only about 4L fuel left, please refuel as soon as possible.

Fuel injection indicator ⑧

Flashes when electrical circuit or fuel injection functions improperly.

Oil pressure warning light ⑨

When the oil pressure in the engine is too low, this light goes on.

 **CAUTION**

When the oil pressure warning light flashes, stop the engine, check for the oil capacity, add oil if necessary. If oil pressure warning light flashes when the engine is cold, and the oil capacity is enough, see your dealer. Running the engine before trouble shooting will result in severe damage for your engine.

Park indicator⑩

When the ignition switch turns to the “○” position, and the vehicle parks with the side stand,

park indicator is on.

Neutral indicator ⑪

Goes on when the transmission is in the Neutral.

Left turn signal indicator ⑫

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

Key

Can be used for ignition switch/steering lock, seat lock, and fuel tank cap. Keep your key safely. Remove the spare key and store it in a safe place. If both original and spare keys are lost, see you dealer.

Ignition Switch/Steering Lock

This ignition switch has “⊗”, “⊙”, “🔑” positions, etc.

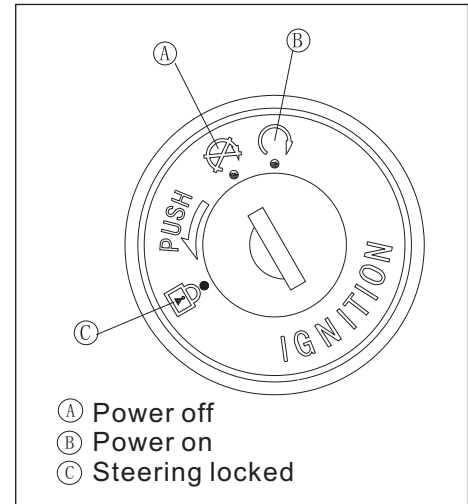
“⊗”: Engine can't be started.

ALL electrical circuits off.

“⊙”: Engine can be started.

ALL electrical equipment can be used.

“🔑”: Steering locked. ALL electrical circuits off.





NOTE

All lights can be lit when the ignition key is in the  position. when headlight is on, it's better to start the engine. Otherwise, prolonged lighting can cause battery being discharged ,even damaged.

Right Handlebar Switches

Engine Stop Switch①

Both ignition switch and engine stop switch must be put in the  position before riding.

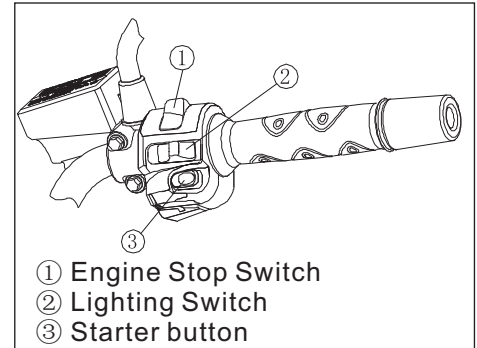
The engine stop switch is for emergency use. If some emergency requires stopping the engine, turn the engine stop switch to the  position.

NOTE

Although the engine stop switch stops the engine, it doesn't turns off all the electrical circuits. Ordinarily, the ignition switch should be used to stop the engine.

Lighting Switch②

Lighting switch includes: “”、“”、“”



“☀” : When the lighting switch turns to this position, headlight, position light, tail light, panel light can be lit.

“☰☱” : When the lighting switch turns to this position, position light, tail light, panel light can be lit.

“●” : When the lighting switch turns to this position, headlight, position light, tail light, panel light are off.

Starter button③

When both ignition switch and engine stop switch turn to the ○ position, meanwhile, transmission is in the Neutral, push this button to start the engine.

Left Handlebar Switches

Dimmer Switch①

Dimmer switch consists of: “☰☱”、“☰☱☱” positions, etc.

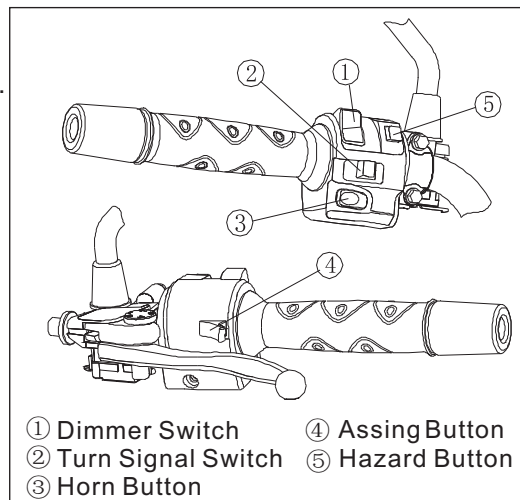
☰☱ : When dimmer switch turns to this position and lighting switch is on ☀, Hi beam and Hi beam indicator go on.

☰☱☱ : When dimmer switch turns to this Position and lighting switch is on ☀, Lo beam is lit.

Turn Signal Switch②

Includes:“←”、“●”、“→” positions, etc.

← : When turn signal switch moves to this Position, left turn light and left turn signal Indicator are lit.



● : When turn signal switch is pushed in, turn light is off.

⇒ : When turn signal switch moves to this position, right turn light and right turn signal indicator are on.

Horn Button③

When the horn button is pushed, the horn sounds.

Overriding Button④

When the passing button is pushed, the Hi beam(passing beam) comes on to signal the driver of the vehicle ahead that you are about to pass him. The passing light is off as soon as the passing button is released.

Hazard Button ⑤

⚠ : When this button is pushed in, turn lights and turn signal indicators flash to warn other drivers of your location.

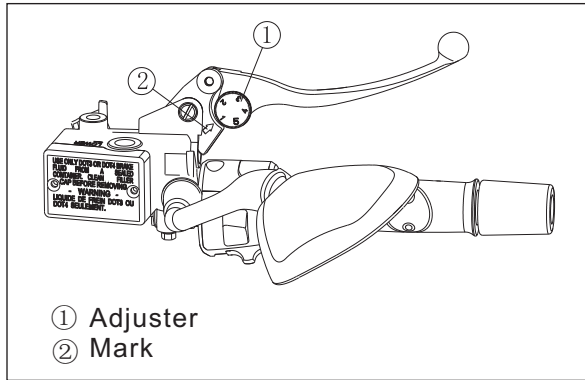


If you leave the hazard button on for over 30 minutes, the battery may become totally discharged.

Brake/Clutch Lever Adjuster

There is an adjuster on both the brake and clutch levers. Each adjuster has 5 positions so that the released lever position can be adjusted to suit the operator's hands. Push the Lever forward and turn the adjuster to align the number with the arrow mark on the lever holder. The distance from the

grip to the released lever is minimum at Number 5 and maximum at Number 1.



Fuel Tank Cap

To open the fuel tank cap, pull up the key hole cover. Insert the ignition key into the fuel tank cap and turn the key to the right.

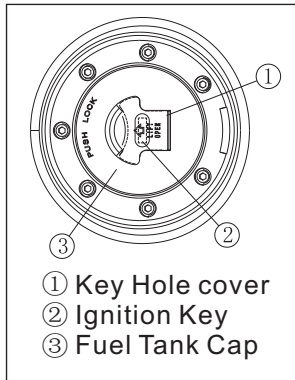
To close the cap, push it down into place with the key inserted. The key can be removed by turning it to the left to the original position.

NOTE

The fuel tank cap cannot be closed without the key inserted, and the key cannot be removed unless the cap is locked properly. Don't push on the key to close the cap, or the cap cannot be locked.

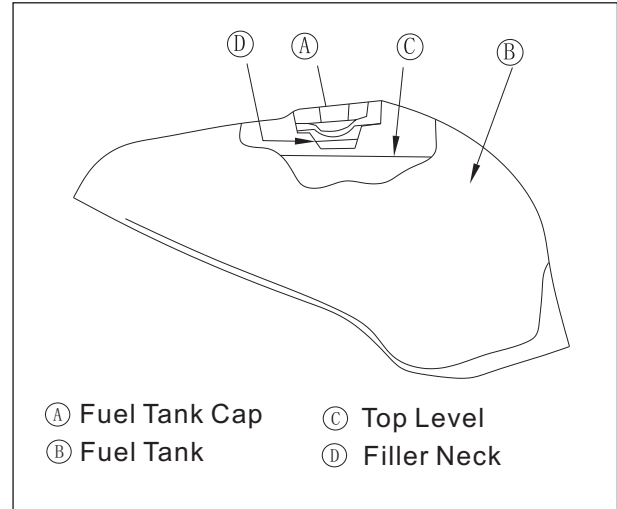
NOTE

The fuel tank cap cannot be closed without the key inserted, and the key cannot be removed unless the cap is locked properly. Don't push on the key to close the cap, or the cap cannot be locked.



Fuel Tank

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



 **WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions. When refueling, turn the ignition key to “OFF” .Don't smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light. Never fill the tank so the fuel level rises to the filler neck .After refueling, make sure the fuel tank cap is locked securely.

Fuel Requirement

This motorcycle is designed to use only unleaded 93# or above gasoline.

 **CAUTION**

Don't use leaded gasoline, as this will destroy the catalytic converter (For further information ,refer to the catalytic converter section in the “How to ride the Motorcycle” chapter)

Octane Rating

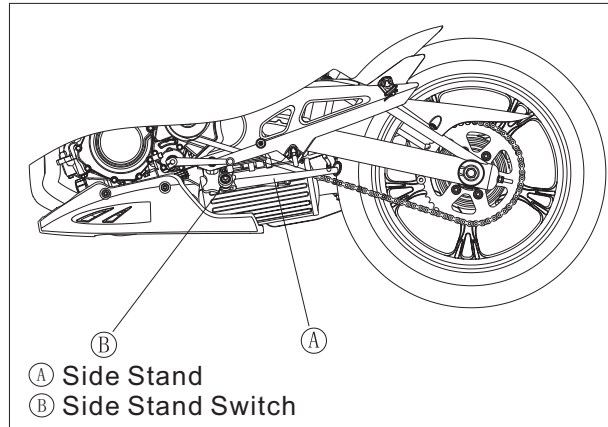
The octane of a gasoline is a measure of its resistance to detonation or “knocking”.The term commonly used to describe a gasoline's octane rating is the Research Octane Number(ROn).The higher the RON is,the greater the gasoline's resistance to “knocking” is.Always use a gasoline with an octane rating equal to, or higher than RON 93.

 **NOTE**

If “knocking” or “pinging” occurs, use a different brand of unleaded gasoline or an unleaded gasoline with higher octane rating.

Side Stand

This motorcycle is equipped with a side stand.



NOTE

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

Kick the side stand fully up before riding.

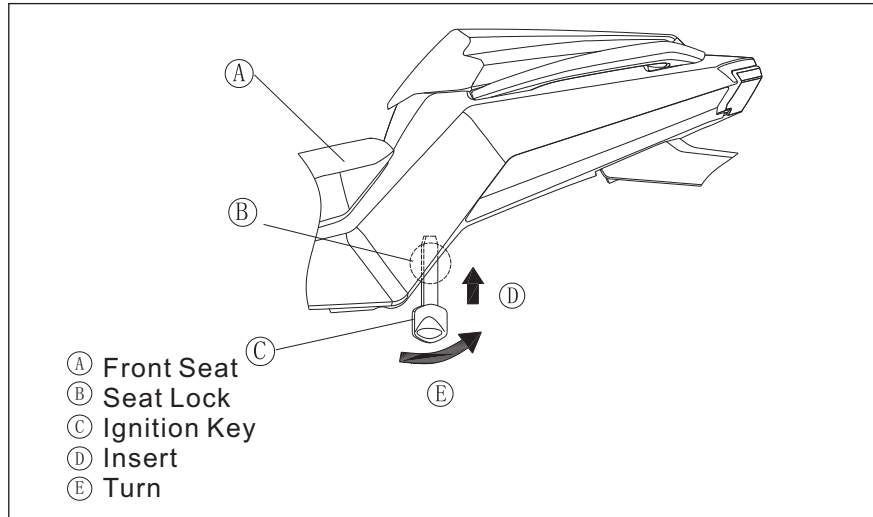
This motorcycle is equipped with a side stand switch. This switch is designed so that the engine doesn't start if the transmission is in gear and the side stand is down.

Front Seat Lock

Front Seat Removal

Insert the ignition key into the seat lock.

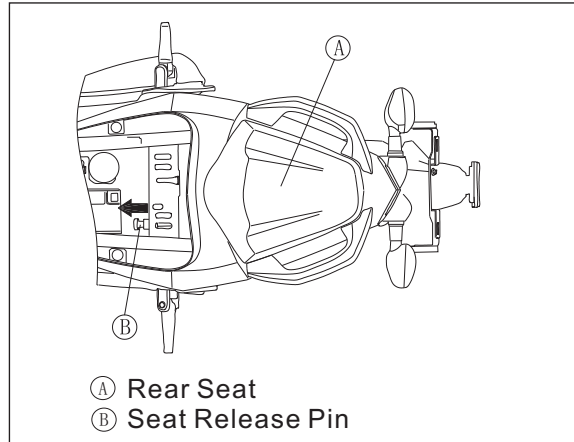
Turn the key clockwise while pushing down the rear end of the seat, then pull up the front seat.



Rear Seat

Rear Seat Removal

To remove the rear seat, remove the front seat first. Pull the seat release pin out while pushing down the rear end of the rear seat, then pull up the rear seat.



NOTE

If there is a difficulty removing the seat, be sure to insert the ignition key all the way and to push down strongly on the rear end of the seat while turning the key clockwise.

Seat Installation

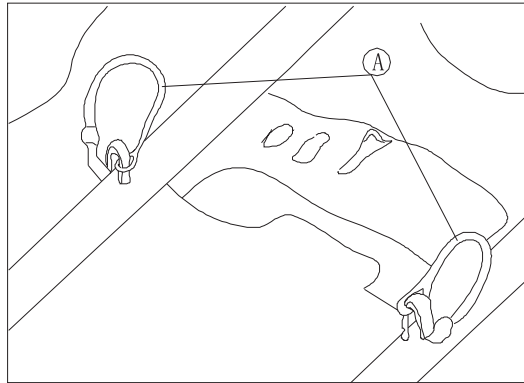
Install seats in the reverse order of removal. After installation finished, make sure the seats are securely locked, then remove the ignition key.

Helmet Holding Cable

Helmet can be secured to the motorcycle by helmet holding cable to avoid theft after parking.

WARNING

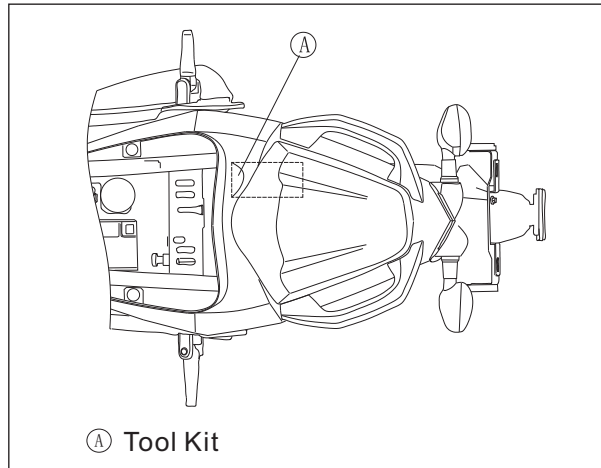
Don't ride the motorcycle with a helmet attached to the cable. The helmet could cause an accident by distracting the operator or interfering with normal vehicle operation.



 Helmet Holding Cable

Tool Kit

Stored under the front seat. You can see it once you open the front seat.

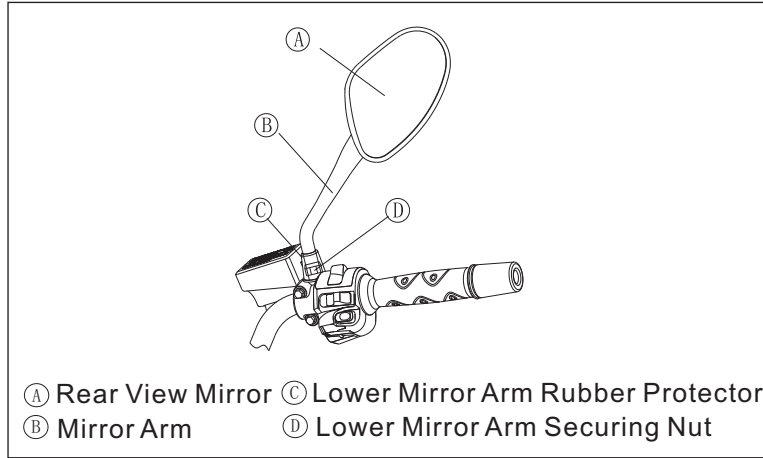


The kit is helpful in making some simple repairs and adjustments.

Rear View Mirror

Rear View Mirror Adjustment

Adjust the rear view mirror by slightly moving only the mirror portion of the assembly. If the rear visibility can't be assured by moving the mirror, turn the mirror arm by hand.



The adjustments on right & left rear view mirror are the same.

⚠ CAUTION

Don't force to tighten and/or loosen the lower mirror arm securing nut with a pair of spanners or wrench. Forcible loosening and/or tightening may damage the lower mirror arm securing nut and the mirror arm turning mechanism .

BREAK-IN

The first 1500km that the motorcycle is ridden is designated as the break-in period. The following rules should be observed during the “break-in” period.

The table shows the maximum recommended engine speed during the break-in period.

Distance traveled	Maximum engine speed
0~800km	4000r/min
800~1500km	6000r/mim

- Don't start moving or racing the engine immediately after starting it, even if the engine is already warm. Run the engine for 2 or 3 minutes at idle speed to give the oil a chance to work up into all the engine parts.
- Don't race the engine while the transmission is in neutral.



WARNING

New tires are slippery and may cause loss of control and injury. A break-in period of 1500 km is necessary to establish a normal tire traction. During break-in, avoid sudden and maximum braking and acceleration, and hard cornering.



In addition to the above, at 1000km it is extremely important that the owner have the initial maintenance service performed by an authorized CFMOTO dealer.

HOW TO RIDE THE MOTORCYCLE

Starting The Engine

- Check that the engine stop switch is in the “” position.
- Turn the ignition key to the “” position.
- Make sure the transmission is in neutral.

NOTE

This motorcycle is equipped with a vehicle-down sensor (also called roll-over sensor), which causes the engine to stop automatically and the FI indicator to flash when the motorcycle falls down. After righting the motorcycle, first turn the ignition key to the “” position, then back to the “” position before starting the engine.

CAUTION

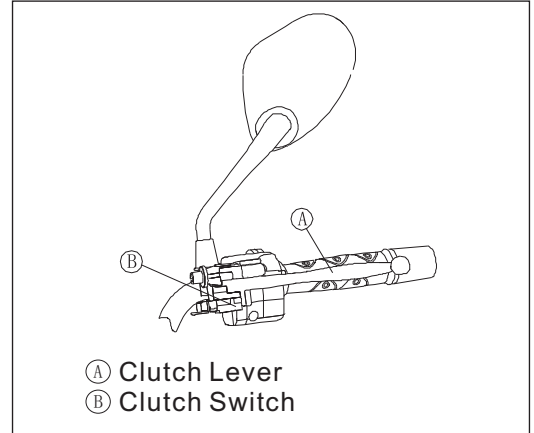
Don't depress the starter button for more than 5 seconds, or the starter motor will overheat and the battery power will drop temporarily. Wait 15 seconds between every operation of the starter to let it cool and the battery power recover.

NOTE

This motorcycle is equipped with a clutch switch. This switch is designed so that the engine does not start if the transmission is in gear and the side stand is down. However, the motorcycle can be started if the clutch lever is pulled and the side stand is fully up.

⚠ CAUTION

Don't let the engine idle longer than 5 minutes, or the engine overheating and damage may occur.




Jump Starting

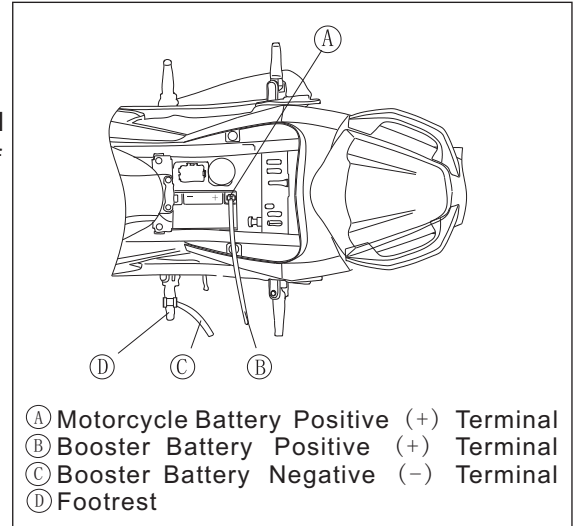
If your motorcycle battery is “run down” , it should be removed and charged. If this is not practical, a 12V booster battery and jumper cables may be used to start the engine.

⚠ WARNING

Battery acid generates hydrogen which is flammable and explosive under certain conditions. It is present within a battery at all times ,even in a discharged condition. Keep all flames and sparks (cigarettes) away from the battery. Wear eye protection when working on a battery. In the event of the battery acid contact with skin, eyes, clothing, wash the affected areas immediately with water for at least 5 minutes. Seek medical attention.

Connecting Jumper Cables

- Remove the front seat
- Make sure the ignition key is turned to “”
- Connect a jumper cable from the positive(+) terminal Of the booster battery to the positive (+) terminal of the motorcycle battery.
- Connect another jumper cable from the negative(-) terminal of the booster battery to the negative (-) terminal of your motorcycle footrest or other unpainted metal surface. Don't use the negative (-) terminal of the battery.



WARNING

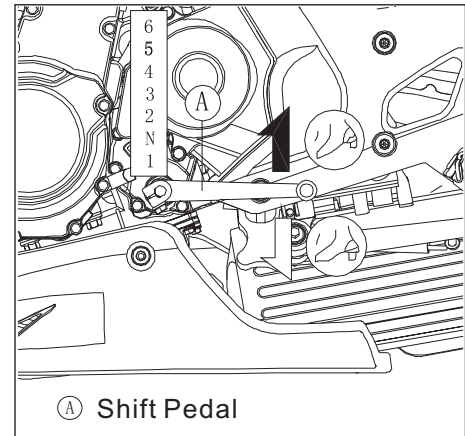
Don't make this last connection at the fuel system or battery, or it may cause fire. Don't touch the positive and negative cables together and don't lean over the battery when making the last connection. Don't jump start a frozen battery. It could explode. Don't reverse the polarity by connecting the positive (+) to negative (-), or a battery explosion or serious damage to the electrical system could occur.

- Following the standard engine starting procedure.

⚠ CAUTION

Don't operate the starter continuously for more than 5 seconds or the starter will overheat and the battery power will drop temporarily. Wait 15 seconds between each Operation of the starter to let it cool and the battery power recover.

- After the engine has started, disconnect the jumper cables. Disconnect the negative(-) cable from the motorcycle first.
- Reinstall the parts removed.



Moving Off

- Check that the side stand is fully up.
- Grip the clutch lever.
- Shift into 1st gear.
- Open the throttle a little, and start to let out the Clutch lever very slowly.
- As the clutch starts to engage, open the throttle a little more, giving the engine just enough fuel to keep it from stalling.

NOTE

This motorcycle is equipped with a side stand switch. This switch is designed so that the engine doesn't start if the transmission is in gear and the side stand is down.

Shifting Gears

- Close the throttle while pulling in the clutch lever.
- Use shift pedal for shifting gears.

WARNING

When shifting down to a lower gear, do not shift at such a high speed that the engine r/min (rpm) jumps excessively. Not only can this cause engine damage, but the rear wheel may skid and cause an accident. Down-shifting should be done below 5,000r/min (rpm) for each gear.

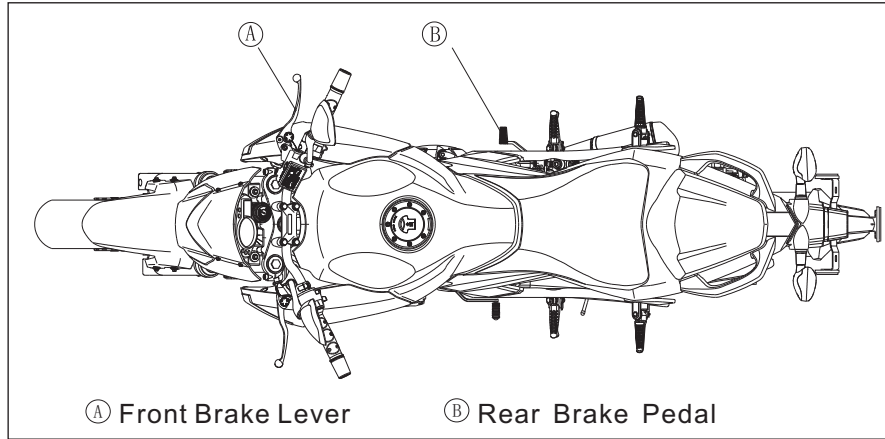
- Open the throttle part way, while releasing the clutch lever.




When parking, shift gear into Neutral position. Lift up the shift pedal while shift from 1st gear to Neutral.

Braking

- Close the throttle completely, leaving the clutch engaged so that engine will help slow down the motorcycle.
- Shift down one gear at a time so that you are in 1st gear when you come to a complete stop.
- When stopping, always apply both brakes at the same time. Normally the front brake should be applied a little more than the rear. Shift down or fully disengage the clutch as necessary to keep the engine from stalling.
- Never lock the brakes, or it will cause the tires to skid. When turning a corner, it is better not to brake at all. Reduce your speed before you get into the corner.
- Emergency braking, disregard downshifting and applying the brakes hard can cause skid. When turning a corner, it is better to limit braking to the light application of both brakes. Reduce your speed before you get into the corner.



Stopping the Engine

- Close the throttle completely.
- Shifting the transmission into Neutral.
- Turn the ignition key to “”.
- Support the motorcycle on a firm, level surface with the side stand.
- Locking the steering.




**The motorcycle is equipped with a vehicle-down sensor, which causes the engine to stop automatically and malfunction indicator light to flash when the motorcycle falls down. After righting the motorcycle, turn the ignition key from “

Stopping the Motorcycle in an Emergency**

Your CFMOTO motorcycle has been designed and manufactured to provide you optimum safety and convenience. However, in order to fully benefit from CFMOTO’s safety engineering and craftsmanship, it is essential that you, the owner and operator, properly maintain your motorcycle and become thoroughly familiar with its operation. Improper maintenance can create a dangerous situation known as throttle failure. Two of the most common causes of throttle failure are:

1. Improper service or wrong valve clearance may allow dirt and dust enter into air intake system.
2. During removal of the air cleaner, dirt is allowed to enter and jam fuel injection system.

In an emergency situation such as throttle failure, your vehicle may be stopped by applying the brakes and disengaging the clutch. Once this stopping procedure is initiated, the engine stop switch may be used to stop the engine. If the engine stop switch is used, turn off the ignition switch at “” after stopping the motorcycle.

Parking

- Shift the transmission into neutral and turn the ignition key.
- Support the motorcycle on a firm, level surface with the side stand.



CAUTION

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

- If parking inside a garage or other structure, be sure it is well ventilated and the motorcycle is not close to any source of flame or sparks; this includes any appliance with a pilot light.

 **WARNING**

The muffler and exhaust pipe are very hot while the engine is running and just after the engine stop. This can ignite a fire, resulting in property damage or severe personal injury.

Do not idle or park your vehicle in an area where flammable material such as grasses or dry leaves may contact with muffler or exhaust pipe.

 **WARNING**

Gasoline is extremely flammable and can be explosive under certain conditions.

- Lock the steering to help prevent theft.

 **NOTE**

When stopping near traffic at night, you can leave taillight on for greater visibility, but do not leave the taillight on for too long, or the battery will discharge.

Catalytic Converter

This motorcycle is equipped with a catalytic converter in the exhaust system. Platinum and rhodium in the converter react with carbon monoxide and hydrocarbons to 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 caution must be observed.

- Use only unleaded gasoline. Never use leaded gasoline. Leaded gasoline significantly reduce the capability of the catalytic converter.

Do not coast the vehicle with the ignition switch and/or engine stop switch off. Do not attempt to start the engine by rolling the vehicle if the battery is discharged. Do not operate the vehicle with the engine or any one cylinder misfiring. Under these conditions unburned air/fuel mixture flowing out of engine excessively accelerates reaction in the converter allowing the converter to overheat and become damaged when the engine is hot, or reduces converter performance when the engine is cold.

SAFE OPERATION

Safe Riding Technique

The points given below are applicable for everyday motorcycle use and should be carefully observed for safe and effective vehicle operation..

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

You should wear protective apparel when riding for your safety in case of any collision.

Before changing lanes, look over your shoulder to make sure the way is clear. Do not rely solely on the rear view mirror; you may misjudge a vehicle's distance and speed, or you may not see it at all.

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

When applying the brakes, use 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 closing 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 the rear wheel from too rapid acceleration or deceleration.

Riding at the proper rate of speed and avoiding unnecessarily fast acceleration are important not only for safety and low fuel consumption but also for long vehicle life and quieter operation.

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

On rough roads, 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 to obtain the necessary power.

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

Avoid unnecessary weaving wrap rider and motorcycle.

Daily Safety Checks

Check the following items each day before you ride, habitual performance of these checks will help ensure you a safe, reliable ride.

If any irregularities are found during these checks, refer to the Maintenance and Adjustment chapter or see your dealer for the action required to return the motorcycle to a safe operating condition.

 **WARNING**

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

Fuel Adequate supply in tank, no leaks.

Engine oil..... Oil level between level lines.

TiresAir pressure(when cold):

Front	Up to: 236kg	280kPa
Rear	Up to: 325kg	280kPa

Install the air valve cap.

Drive chain·····Slack 30~40mm, lubricate drive chain if dry.

Nuts, bolts,fasteners·····Check that steering and suspension components, axles,
and all controls are properly tightened or fastened.

Steering····· Action smooth but not loose from lock to lock.
No binding of control cables.

Brakes····· Brake pad wear: Lining thickness more than 1 mm left.
No brake fluid leakage.

Throttle ····· Throttle grip play 2~3mm.

Clutch····· Clutch lever play 2~3mm, clutch lever operates smoothly.

Coolant·····No coolant leakage.
Coolant level between level lines(when engine is cold).

Electrical equipment·····All lights(Headlight,Tail/Brake Lights,Turn Signal Lights,
Warning/Indicator Lights) and horn work.

Engine stop switch·····Stop engine.

Side stand·····Return spring not weak or not damaged.

Refer to all caution labels attached to the motorcycle.

Additional Considerations for High Speed Operation

Brakes: The importance of the brakes, especially during high speed operation, cannot be overemphasized. Check to see that they are correctly adjusted and functioning properly.

Steering: Looseness in the steering can cause loss of control. Check to see that the handlebar turns freely but has no play.

Tires: High speed operation is hard on tires, 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 for the high fuel consumption during High speed operation.

Engine oil: To avoid engine seizure and resulting in loss of control, make sure the oil level is between level lines, better in the middle.

Coolant: To avoid overheating, check that the coolant level is between level lines.

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

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

 **WARNING**

Handling characteristics of a motorcycle at high speeds may vary from those you are familiar with at legal highway speeds. Do not attempt high speed operation unless you have received sufficient training and have the required skills. It is forbidden to ride a motorcycle on highway in China.

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 good running condition.

The initial maintenance is vitally import and must 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.

Periodic Maintenance Chart

■ : Should be serviced by an authorized CFMOTO dealer.

*: For higher odometer readings, repeat at the frequency interval established here.

#: Service more frequently when operating in severe conditions: dusty, wet, muddy, high speed, or frequent starting/stopping.

1. Periodic Inspection(Engine Related Items)

Operation(Engine Item)	Frequency	Whichever → comes first ↓						*Odometer Reading km×1000	See Page
		Every	1	6	12	18	24		
■ Air cleaner element—clean				●		●		●	66
■ Valve clearance—inspect	42000km								65
Throttle control system (play,smooth return) —inspect	year	●		●		●		●	67
Idle speed—inspect		●		●		●		●	69
■ Fuel leak (fuel hose and pipe) —inspect	year	●		●		●		●	—
■ Fuel hoses damage—inspect	year	●		●		●		●	—
■ Fuel hoses installation—inspect	year	●		●		●		●	—
■ Throttle body—clean			●	●	●	●	●	●	

Frequency	Whichever → comes first							See Page	
	*Odometer Reading km × 1000								
Operation(Engine Item)	↓ Every	1	6	12	18	24	30	36	
		Coolant level—inspect		●		●		●	
Coolant leak—inspect	year	●		●		●		●	63
Radiator hose damage—inspect	year	●		●		●		●	58
Radiator hose installation—inspect	year	●		●		●		●	—
■ air suction system damage—inspect				●		●		●	64

2. Periodic Inspection (Chassis Related Items)

Operation(Chassis items)	Frequency	* Odometer Reading km×1000						See Page	
	Whichever → comes first ↓ Every	1	6	12	18	24	30		36
Clutch and drive chain									
Clutch operation (play, engagement, disengagement) —inspect		●		●		●		●	70
Drive chain lubrication condition—inspect#	600km								72
Drive chain slack—inspect #	1000km								72
Drive chain wear—inspect #				●		●		●	74
■ Drive chain guide wear—inspect				●		●		●	—
Wheels and tires:									
Tire air pressure—inspect	year	●		●		●		●	92
Wheels/tires damage—inspect				●		●		●	93
Tire tread wear, abnormal wear—inspect				●		●		●	93
■ wheel bearing damage—inspect	year			●		●		●	—
Pedal—lubricate		●		●		●		●	99

Operation(Chassis)	Frequency	Whichever → comes first ↓							See Page
	Every	*Odometer Reading km×1000							
		1	6	12	18	24	30	36	
Brake system									
Brake fluid leak—inspect	year	●	●	●	●	●	●	●	81
Brake hoses and pipe damage—inspect	year	●	●	●	●	●	●	●	81
Brake pad wear—inspect #			●	●	●	●	●	●	80
Brake hose installation—inspect	year	●	●	●	●	●	●	●	44
Brake fluid level—inspect	6 month	●	●	●	●	●	●	●	81
Brake operation (effectiveness, play, drag) —inspect	year	●	●	●	●	●	●	●	45
Brake light switch operation—inspect		●	●	●	●	●	●	●	85
Suspensions:									
Front forks/rear shock absorber operation (damping and smooth stroke) —inspect				●		●		●	87
Front forks / rear shock absorber oil leak—inspect	year			●		●		●	87

Operation(Chassis)	Frequency	Whichever → comes first ↓						*Odometer Reading km×1000	See Page
	Every	1	6	12	18	24	30		
Steering System									
■ steering play—inspect	year	●		●		●		●	—
■ steering stem bearings—lubricate	2year					●			—
Electrical System									
Lights and switches operation—inspect	year			●		●		●	—
Headlight aiming—inspect	year			●		●		●	100
Side stand switch operation—inspect	year			●		●		●	—
Engine stop switch operation—inspect	year			●		●		●	—
Chassis									
■ Chassis parts—lubricate	year			●		●		●	—
■ Bolts and nuts tightness—inspect	year	●		●		●		●	—

Change/Replacement Item	Frequency	Whichever → comes first ↓ *Odometer Reading km×1000					See Page
	Every	1	12	24	36	48	
■ Air cleaner element#	2year						66
Engine oil#	Six months	For each 6000km					52
Oil filter	Six months	For each 6000km					54
■ Fuel hoses	4year					●	—
■ Coolant	2year				●		59
■ Radiator hoses	2year				●		—
■ Brake hoses and pipe	4year					●	—
■ Brake fluid (front/rear)	2year			●		●	81
■ Rubber parts of master cylinder and caliper	4year					●	—
■ Spark plug			●	●	●	●	63

Engine Oil

In order for the engine, transmission, and clutch to function properly, maintain the engine oil at the proper level, and change the oil and replace the oil filter in accordance with the Periodic Maintenance Chart. Not only do dirt and metal particles collect in the oil, but the oil itself loses its lubricative quality if used too long.

WARNING

Motorcycle operation with insufficient, deteriorated or contaminated engine oil will cause accelerated wear and may result in engine or transmission seizure, accident, and injury.

Oil Level Inspection

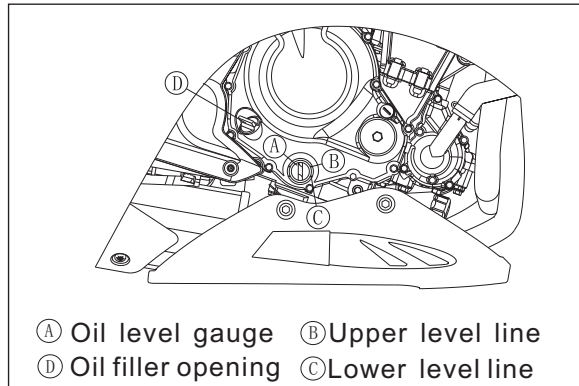
- If the oil has just been changed, start the engine and run it for several minutes at idle speed. This fills the oil filter with oil. Stop the engine, then wait several minutes until the oil settles.

CAUTION

Racing the engine before the oil reaches every part can cause engine seizure.

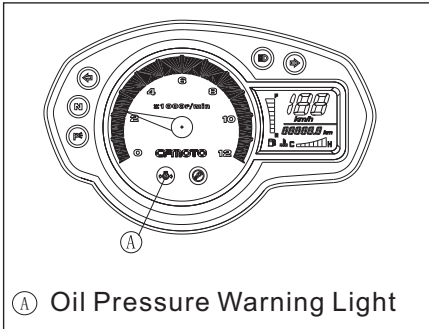
- If the motorcycle has just been used, wait several minutes for all the oil to drain down.

- Check the engine oil level through the oil level gauge. With the motorcycle held level, the oil level should come up between the upper and lower level lines next to the gauge.
- If the oil level is too high, remove the excess oil thru the oil filler opening using a syringe or some other suitable device.
- If the oil level is too low, add the oil to reach the correct level. Use the same type and brand of oil that is already in the engine.



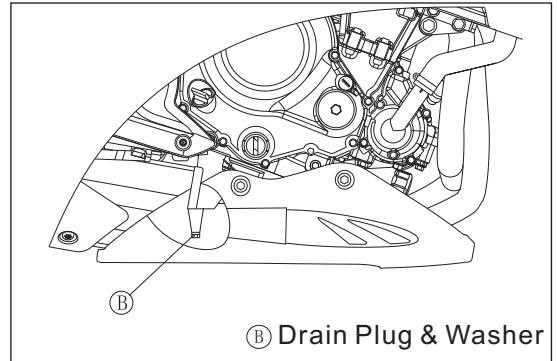
⚠ CAUTION

If the engine oil gets extremely low or if the oil pump does not function properly or oil passages are clogged, the warning light will be on. If the light stays on, stop the engine immediately and find the cause.



Oil and Oil Filter Change

- pack the bike 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 plug.
- Let the oil completely drain.



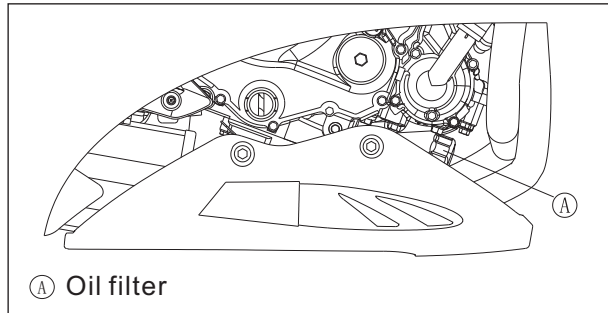
⚠ DANGER

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

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

⚠ WARNING

Contact your local dealer to get special tools



- Apply a thin film of oil to the packing and tighten the cartridge to the specified torque.

- Replace any gaskets with new ones before install the drain plug



Warning

Replace any gaskets with new ones

- Fill the engine between upper and lower level line with a good quality engine oil as bellow.
- Start the engine.
- Check the oil level and oil leakage.

Tightening Torque

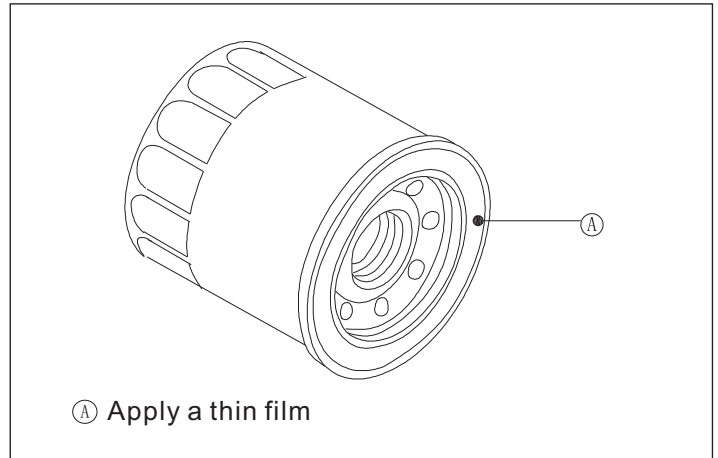
Engine oil Drain Plug: 30N.m

Oil filter: 17.2N.m

Recommended Engine Oil:

Type: API SG or above

Viscosity: SAE 15W-40



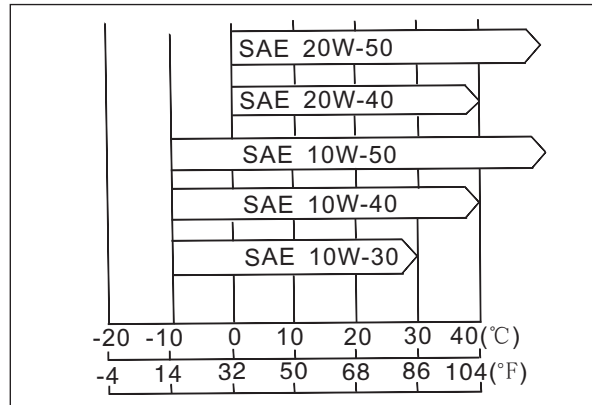
Engine Oil Capacity:

When filter is not removed: 2.0L

When filter is removed: 2.2L

When engine is completely dry: 2.6L

Although 15W-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.



Cooling System

Radiator and Cooling Fan

Check the radiator fins for 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.

 **CAUTION**

Using high-pressure water could damage the radiator fans and impair the radiator's effectiveness. Do not obstruct or deflect airflow through the radiator by installing unauthorized accessories in front of the radiator or behind the cooling fan. 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 each day before riding the motorcycle, and in accordance with Periodic Maintenance Chart

Coolant

Coolant absorbs excessive heat from the engine and transfers it to the air at the radiator. If the coolant level becomes low, the engine overheats and may suffer server damage, Check the coolant level each day before riding the motorcycle, and in accordance with the periodic maintenance chart and replenish coolant if the level is low. Change the coolant in accordance with the periodic Maintenance Chart.

Information for Coolant

To protect the cooling system(consisting of the aluminum engine and radiator)from rust and corrosion, the use of corrosion and rust inhibitor chemicals in the coolant is essential . if coolant containing corrosion and rust inhibitor chemicals is not used. Over a period of time, the cooling system accumulates rust and scales in the water jacket and radiator. This will clog up the coolant passages, and considerably reduce the efficiency of the cooling system.



WARNING

Use coolant containing corrosion inhibitors made specifically for engines and radiators in accordance with the instructions of rule. Chemicals are harmful to the human body.

Distilled water must be used with the antifreeze (if the coolant comes to low).

 **WARNING**

If hard water is used in the system, it causes scales accumulation in the water hose, and considerably reduces the efficiency of the cooling system.

If the lowest temperature encountered falls below the freezing point of water, use permanent antifreeze in the coolant in protect the cooling system against and radiator freeze-up, as well as from rust and corrosion.

 **WARNING**

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

 **WARNING**

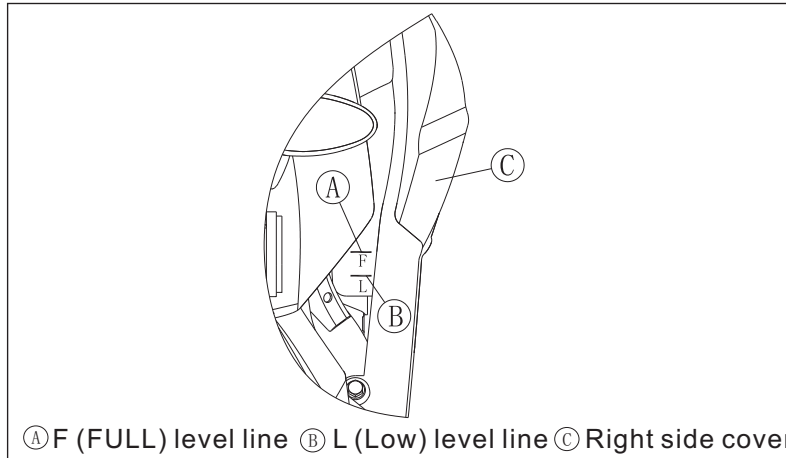
When fill the coolant in the cooling system, it's colored agree and contains ethylene glycol. It is mixed at 50% and has the freezing point of -35°C .

Coolant Level Inspection

- Situate the bike so that it is perpendicular to the ground.
- Check the coolant level if it is between the F (Full) and L (Low) level lines.



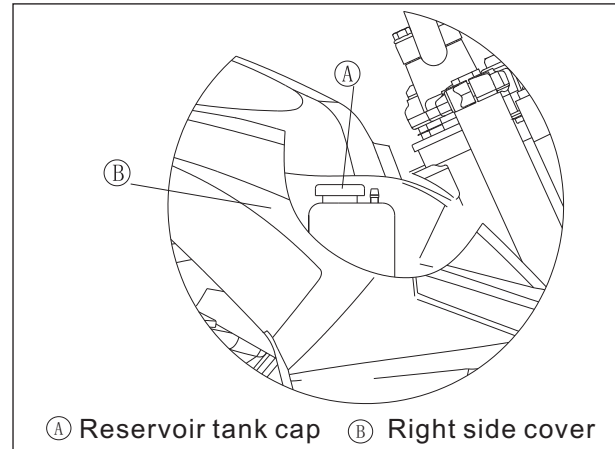
Check the level when the engine is cold (room of atmospheric temperature).



- If the amount of coolant is insufficient, remove the right side cover and add coolant into the reservoir tank.

Coolant Filling

- Remove the right side cover.
- Disconnect the connector of turn light.
- Remove the cap from the reserve tank and add coolant through the filler opening to between F and L



- Install reserve tank cap.
- Connect the connector of turn light.
- Install right side cover.

WARNING

In an emergency you can add water alone to coolant reserve tank, however it must be returned to the correct mixture ratio by the addition of antifreeze concentrate as soon as possible

⚠ WARNING

If coolant must be added often, or the reserve tank completely runs dry, there is probably leakage in the system. Have the cooling system inspected by your authorized dealer.

Coolant Change

Have the coolant changed by an authorized dealer.

Spark Plug

The standard spark plug is shown in the table.

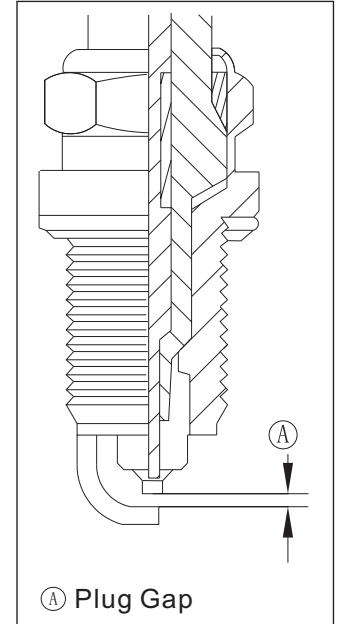
The spark plugs should be replaced in accordance with the Periodic Maintenance Chart.

Spark plug removal should be done by an authorized dealer.

Spark Plug type: CR8EI

Plug Gap: 0.7 ~ 0.9mm

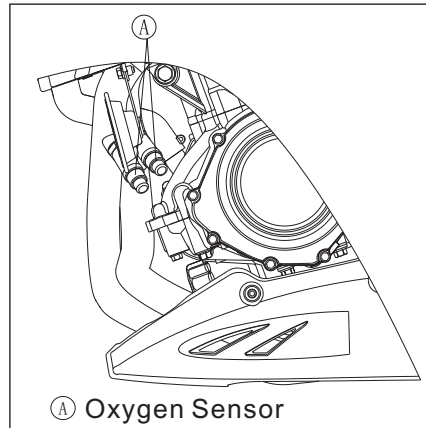
Tightening Torque: 15N.m



Air System

Fuel & Exhaust Detecting System

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



Air Suction Valves

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

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

Valve Clearance

Valve and valve seat are wearing during using, upsetting valve timing.

 **CAUTION**

If valve and valve seat is left unadjusted, wear will eventually cause the valves to remain partly open or without clearance, which lower performance or making noise and may cause 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 the engine's air intake, increasing fuel consumption, reducing engine power, and causing spark plug fouling.

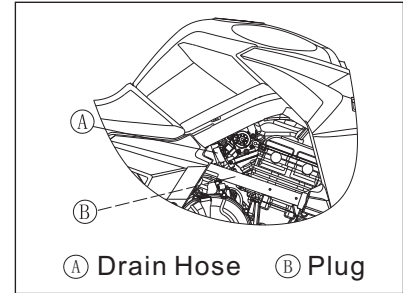
The air filter element must be cleaned in accordance with the periodic Maintenance Chart. In dusty, rainy, or muddy condition, the air filter element should be serviced more frequently than the recommended interval by an authorized dealer.

Oil Draining

- Oil Draining hose located on the rear right side and at the top of shock where is to see if any oil or water has run down from the air filter housing.
- If there are any oil in the reservoir, remove oil draining hose to drain the oil.

⚠ WARNING

Be sure to install the drain hose after draining. Oil on tires will make them slippery and can cause an accident and injury.



Throttle Control System

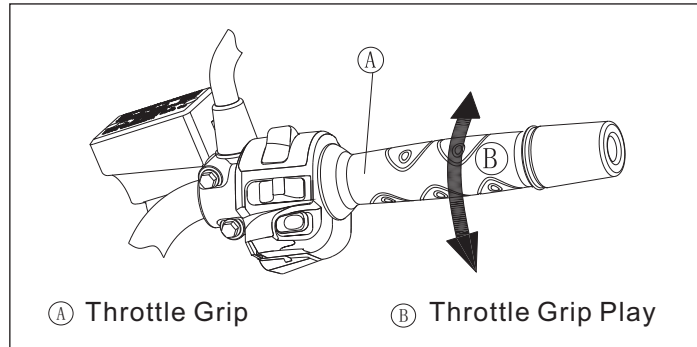
Check the throttle grip play in accordance with the periodic Maintenance Chart ,and adjust it if necessary.

Throttle Grip

The throttle grip controls the butterfly valves in the throttle body ,if the throttle grip has excessive play due to either cable stretch or maladjustment, it 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 has not play ,the throttle will be hard to control, and the idle speed will be erratic.

Inspection

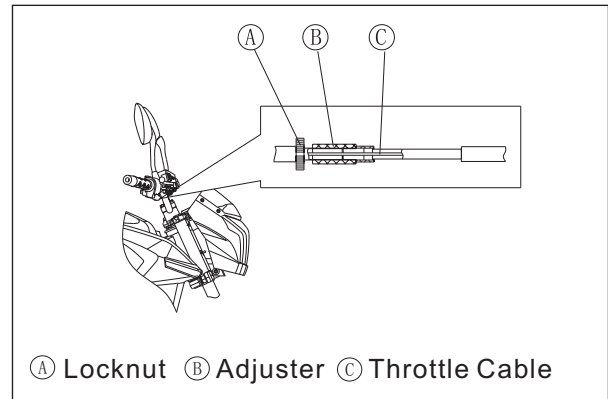
- Check that the throttle grip play is neatly.
- Adjust throttle grip if there is improper play.



Throttle Grip Play: 2~3mm

Adjustment

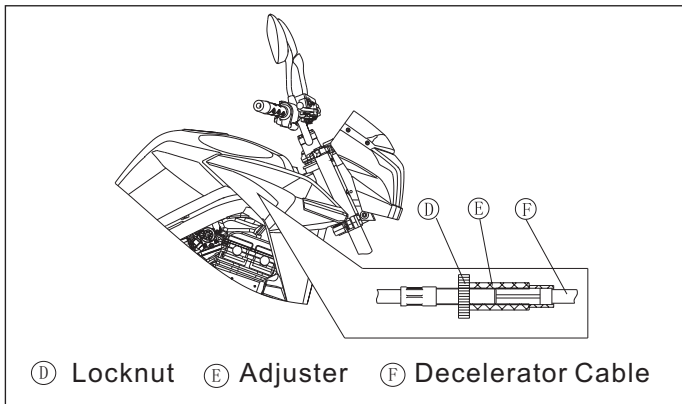
Loosen the locknut at the upper end of the throttle cable and turn the throttle cable adjusting nut in completely so as to give the throttle grip plenty of play.



- Turn out the decelerator cable adjust nut until there is no play when the throttle grip is completely closed.
- Tighten the locknut.
- Turn out the accelerator cable adjusting nut until a play of ~3mm is obtained at the throttle grip.
- Tighten the locknut.

⚠ CAUTION

Operation with improperly adjusted, incorrectly routed, or damaged cables could result in an unsafe riding condition.



Idle Speed

The idle speed of your vehicle has been done before out of factory, there is no need to do any adjustment by yourself, otherwise will effect vehicle's performance. If there is any parts which will effect idle speed need to be replaced, contact with authorized local dealer and use PDA to diagnose and have calibration.

 **CAUTION**

**Operation with an improperly adjusted could result in an unsafe riding condition.
Idle Speed: 1300 ± 130rpm**

Clutch

Due to friction plate wear and clutch cable stretch over a long period of use, the clutch operation should be checked each day before riding the motorcycle, and in accordance with the Maintenance Chart.

 **CAUTION**

To avoid a serious burn, never touch a hot engine or exhaust pipe during adjustment .

Inspection

- Check that the clutch lever operates properly and that the inner cable slider smoothly .if there is any irregularity, have the clutch cable checked by an authorized dealer.
- Check the clutch lever play.

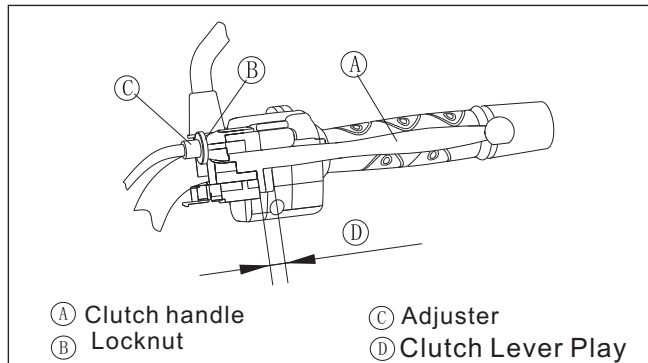
Clutch Lever play: 2~3mm

If the play is incorrect, adjust the lever
play as following
Adjustment

- Loosen the locknut, and turn the adjuster so that the clutch lever will have the proper play

⚠ WARNING

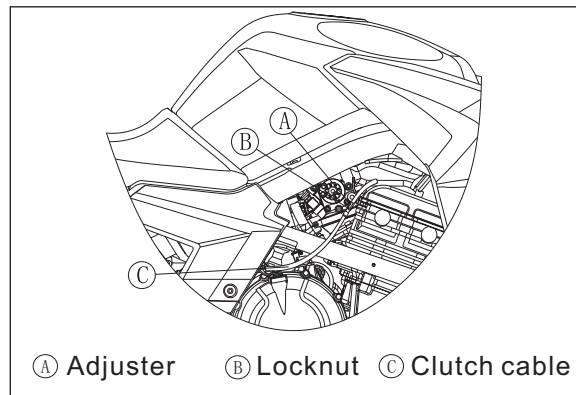
Be sure the upper end of the clutch outer cable is fully seated in its fitting, or it could slip into place later, creating enough cable play to prevent clutch disengagement, resulting in a hazardous riding condition.



- If it cannot be done when upper end of the clutch cable at the limitation ,adjust the nuts at the lower end of the clutch cable.

⚠ NOTE

After the adjustment is made ,start the engine and check that the clutch does not slip and that it releases properly.



Drive Chain

The drive chain slack and lubrication must be checked each day before riding, motorcycle and in accordance with the Periodic Maintenance Chart for safety and to prevent excessive wear. If the chain becomes badly worn or maladjusted-wither too loose or too tight- the chain could jump off or break.



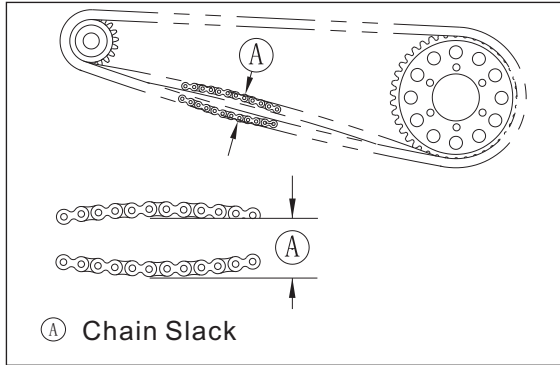
WARNING

A chain that breaks or jumps off the sprockets could snag on the engine sprocket or lock the rear wheel, severely damaging the motorcycle and causing it to go out of control

Chain Slack Inspection

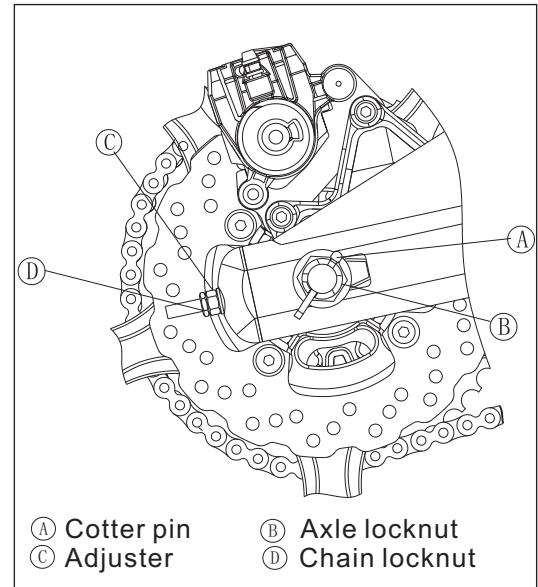
- Set the motorcycle up on its side stand
- Rotate the rear wheel to find the position where the chain is tightest, and measure the maximum chain slack by pulling up and pushing down the chain midway between the engine sprocket and rear wheel sprocket.
- If the drive chain is too tight or too loose ,adjust it so that the chain slack will be within the standard value

Standard Value: 30~40mm



Adjustment

- Loosen the left and right chain adjuster locknuts.
- Remove the cotter pin, and loosen the rear axle nut.
- If the chain is too loose, turn the left and right chain Adjust nuts clockwise and evenly.
- If the chain is too tight, turn the left and right chain Adjust nuts anticlockwise, and evenly.
- Turn both chain adjusting nuts evenly until the chain has the correct amount of slack.
- Keep rear wheel shaft move same on left and right fork.



 **WARNING**

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

 **WARNING**

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

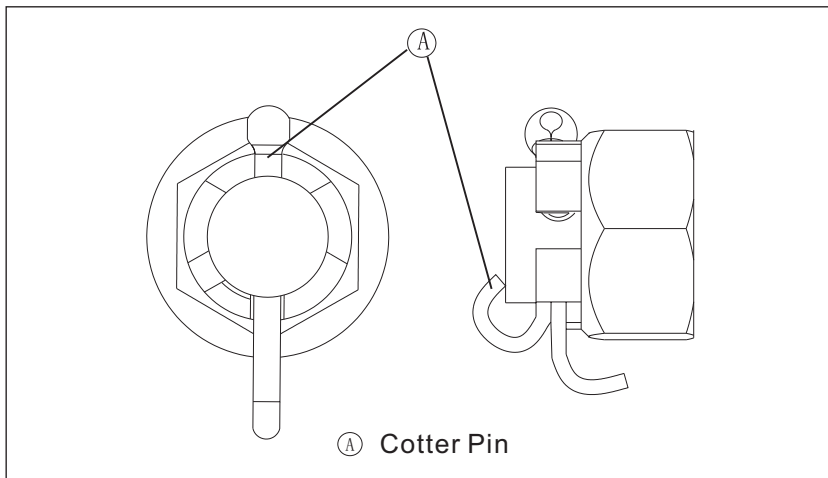
- Tighten both chain adjuster locknuts.
- Tighten the rear axle nut to the specified torque

Tightening Torque: 108N.m

 **NOTE**

If there is no torque wrench, contact with a authorized local dealer.

- Rotate the wheel, measure the chain slack again at the tightest position and readjust if necessary.
- Install a new cotter pin through the rear axle nut and axle and spread its ends.

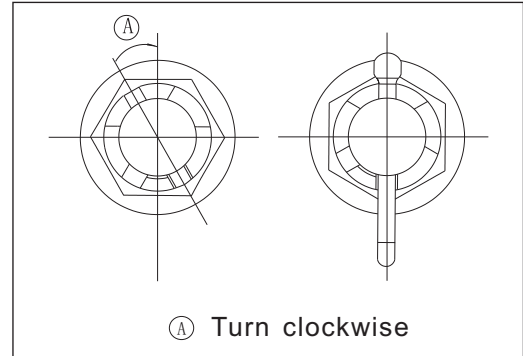


! NOTE

When inserting the cotter pin, if the slots in the nut do not align with the cotter pin hole in the axle shaft, tighten the nut clockwise up to the next alignment. It should be within 30 degree. Loosen once and tighten again when the slot goes past the nearest hole.

⚠ WARNING

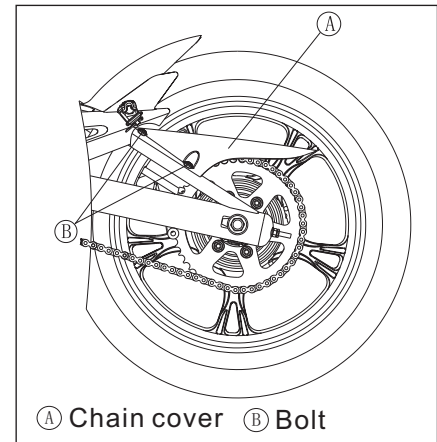
If the axle nut is not securely tightened or the cotter pin is not installed, an unsafe riding condition may result.



● Rear brake Inspection

Wear Inspection

- Remove the bolts to take off the chain guide.
- Stretch the chain taut either by using the chain adjusters, or by hanging a 10 kg (20lb) weight on the chain.
- Measure the length of 20 links on the straight Part of the chain from pin center of the 1st pin to pin Center of the 21st pin.
- If the length exceeds the service limit, the chain should be replaced.

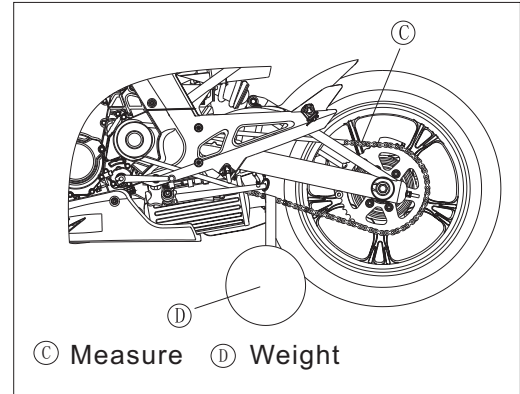


Drive chain 20–Link Length

Service Limit: 323mm

WARNING

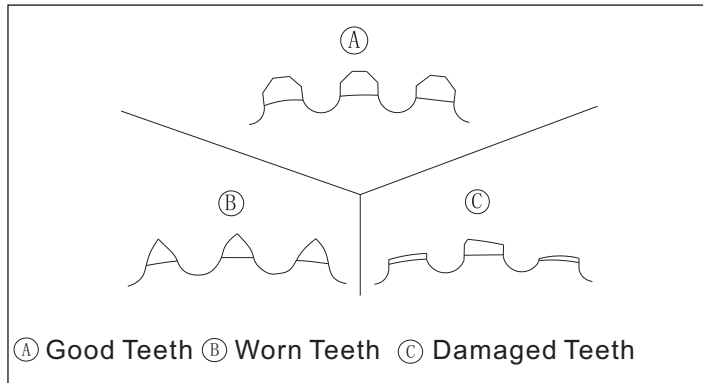
For safety, use only the standard chain, It is an end-less type and should not be cut for installation; have it installed by an authorized CFMOTO dealer.



- Rotate the rear wheel to inspect the drive chain for damaged rollers, and loose pins and links.
- Also inspect the sprockets for unevenly or excessively worn teeth, and damaged teeth.

⚠ NOTE

Sprocket wear is exaggerated for illustration. See Service Manual for wear limits.

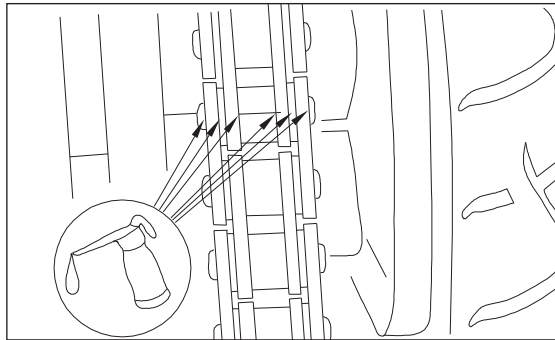


- If there is any irregularity, have the drive chain and/or the sprockets replaced by an authorized CFMOTO Dealer.

Lubrication

Lubrication is also necessary after riding through rain or on wet roads, or any time that the chain appears dry. A heavy oil such as SAE 90 is preferred to a lighter oil because it will stay on the chain longer and provide better lubrication.

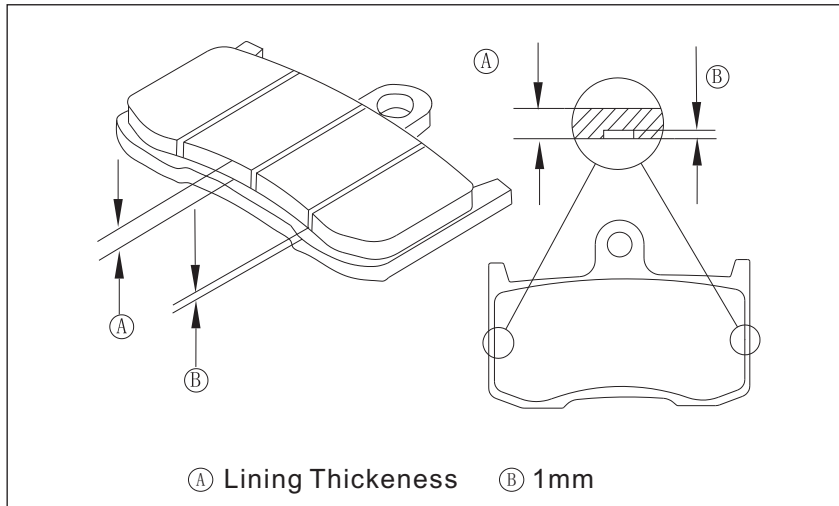
- Apply oil to the sides of the rollers so that it will penetrate to the rollers and bushings.



- If the chain is especially dirty, clean it using diesel oil or kerosene and then apply oil as mentioned above.

Brakes wear Inspection

Inspect the brakes for wear. For each front and rear disc brake caliper, if the thickness of either pad is less than 1mm, replace both pads in the caliper as a set. Pad replacement should be done by an authorized CFMOTO dealer.



Brake Fluid

In accordance with the Periodic Maintenance Chart, inspect the brake fluid level in both the front and rear brake fluid reservoirs and change the brake fluid. The brake fluid should also be changed if it becomes contaminated with dirt or water.

Fluid Requirement

Use heavy-duty brake fluid only from a container marked.

**CAUTION**

Do not spill brake fluid onto any painted surface.

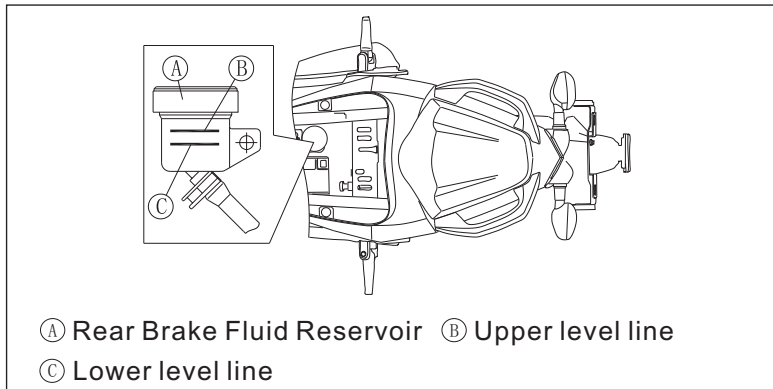
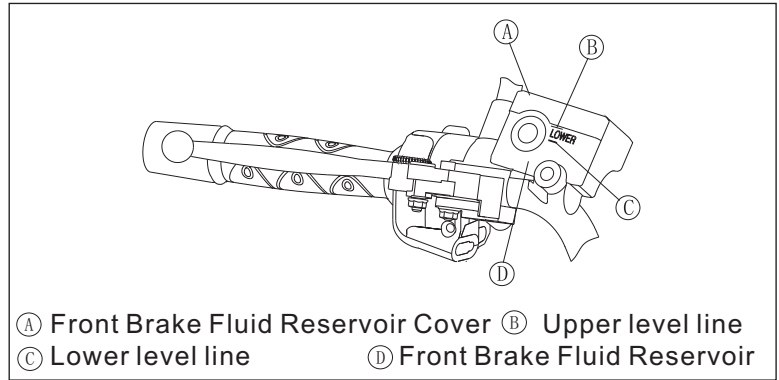
Do not use fluid from a container that has been left open or that has been unsealed for a long time.

Check for fluid leakage around the fittings.

Check brake hose for damage.

Fluid Level Inspection

The brake fluid level in the front brake fluid reservoir must be kept above the line(lower level line) next to the gauge and that the rear brake fluid reservoir(located near the rear fender) must be kept between the upper and lower lines(reservoirs held horizontal).



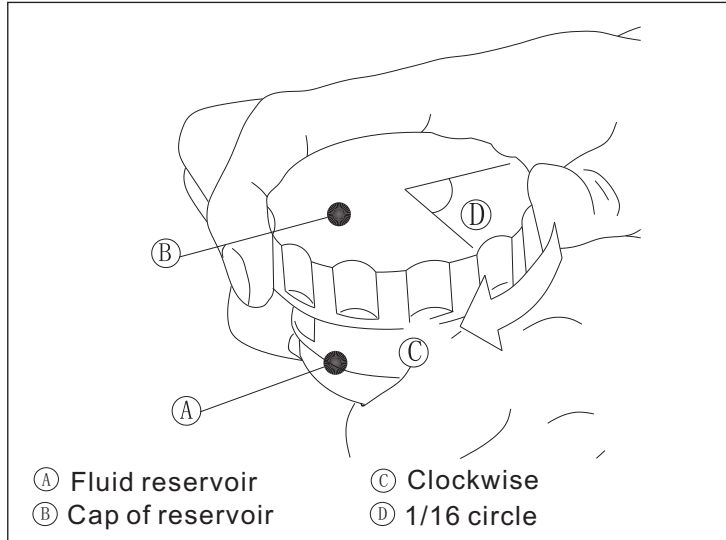
- If the fluid level in either reservoir is lower than the lower level line, check for fluid leaks in the brake lines, and fill the reservoir to the upper level line. Inside the front brake fluid reservoir is a stepped line showing the upper level line.

 **WARNING**

Do not mix two brands of brake fluid. Change the brake fluid in the brake line completely if the brake fluid must be refilled but the type and brand of the brake fluid that is already in the reservoir are unidentified.

 **NOTE**

First, tighten until slight resistance is felt indicating that the cap is seated on the reservoir body; then, tighten the cap an additional 1/6 turn while holding the brake fluid reservoir body.



Fluid Change

Have the brake fluid changed by an authorized CFMOTO dealer.

Front and Rear Brakes

Disc and disc pad wear is automatically compensated for and has no effect on the brake lever or pedal action. So there are no parts that require adjustment on the front brakes and rear brakes.


⚠ WARNING

If the brake lever or pedal feels mushy when it is applied, there might be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, have the brake checked immediately by an authorized CFMOTO dealer.

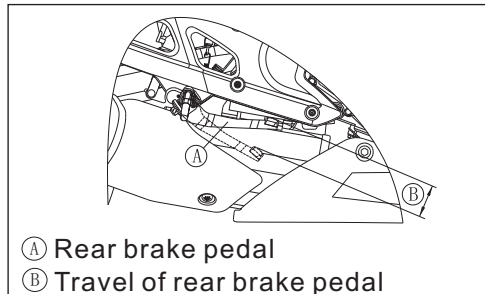
Brake Light Switches

When either the front or rear brake is applied, the brake light goes on. The front brake light switch requires no adjustment, but the rear brake light switch should be adjusted in accordance with the Periodic Maintenance Chart.

Inspection

- Turn the ignition key to “”.
- The brake light should go on when the front brake is applied.

If it does not, ask your authorized CFMOTO dealer to inspect the front brake light switch.

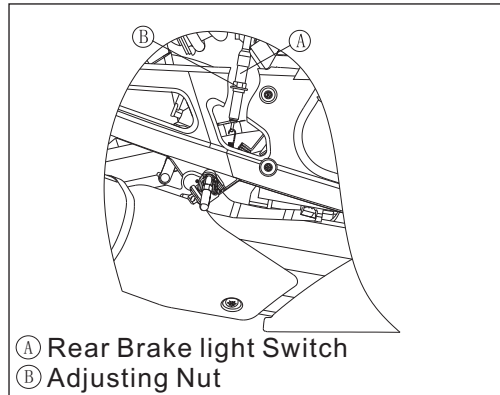


- If it does not, adjust the rear brake light switch.

Brake Pedal Travel : 10mm

Adjustment

- Disconnect the connector.
- To adjust the rear brake light switch, move the switch up or down by turning the switch body.



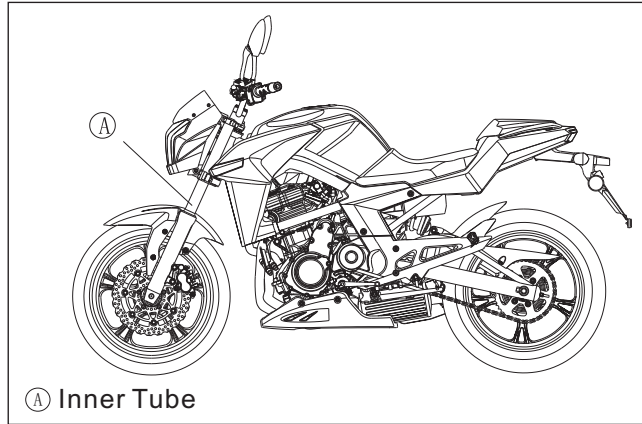
- Connect the connector

Front Fork

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

Front Fork Inspection

- Holding the brake lever, pump the front fork up and down by several times for inspection of smooth stroke.
- Visually inspect the front fork for oil leakage, scoring or scratches on the outer surface of the inner tube.
- If any doubt about the front fork, it should be done by an authorized CFMOTO dealer.

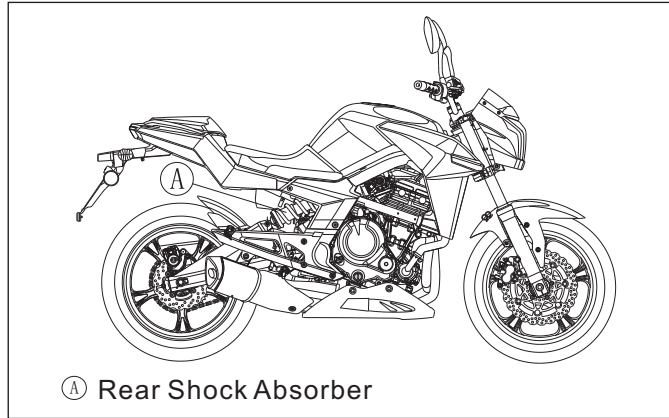


Rear Shock Absorbers

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

Rear Shock Absorber Inspection

- Press down on the seat several times to check if the rear shock absorber stroke is smooth.
- Visually inspect the rear shock absorber for oil leakage.
- If any doubt about the rear shock absorber, it should be done by an authorized CFMOTO dealer.

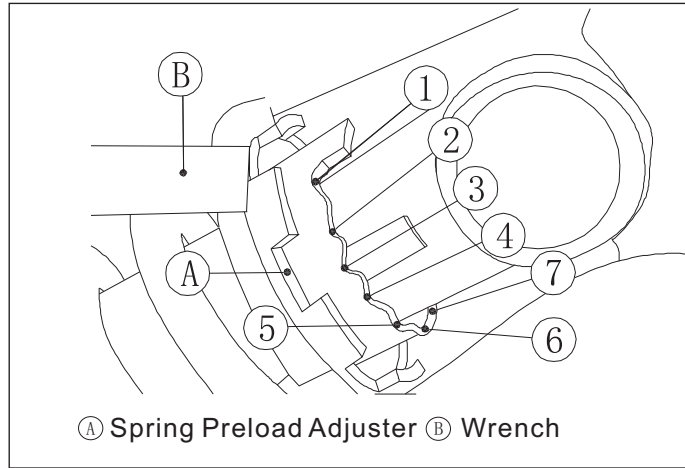


The rear shock absorber can be adjusted by changing the spring preload and rebound damping force for various riding and loading condition.

Spring Preload Adjustment

The spring preload adjuster on the rear shock absorber has 7 position.

- In accordance with the following table, turn the preload adjuster with the wrench form the tool kit.



Position	1	2	3	4	5	6	7
Spring Action	Stronger→						

The standard setting position for an average-build rider of 75 kg (165lb) with no passenger and no accessories is No.3.

⚠ WARNING

This unit contains high pressure nitrogen gas. Mishandling can cause explosion. Read Service Manual for instructions. Do not incinerate, puncture or open.

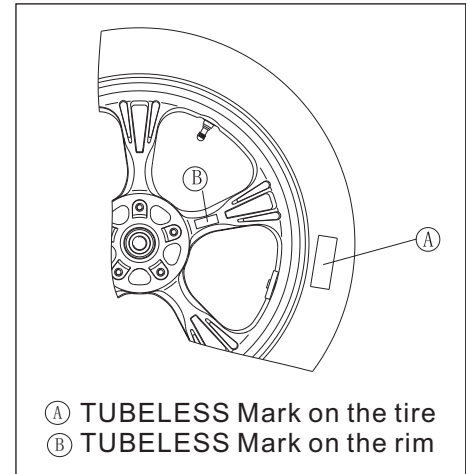
Wheels

Tubeless tires are installed on the wheels of this motorcycle.

The indication of TUBELESS on the tire side wall and the rim show that the tire and rim are specially designed for tubeless use.

⚠ WARNING

The tires, rims, and air valves on this motorcycles are designed only for tubeless type wheels. The recommended standard tires, rims and air valves must be used for replacement. Do not install tube-type tires on tubeless rims. The beads may not seat properly on the rim causing Tire deflation. Do not install a tube inside a tubeless tire. Excessive Heat build-up may damage the tube causing tire deflation.



Tires

Payload and Tire Pressure

Failure to maintain proper inflation pressures or observe payload limits for your tires may adversely affect handling and performance of your motorcycle and can result in loss of control.

The maximum recommended load on addition to vehicle weight is 180kg (397lb), including rider passenger, baggage and accessories.

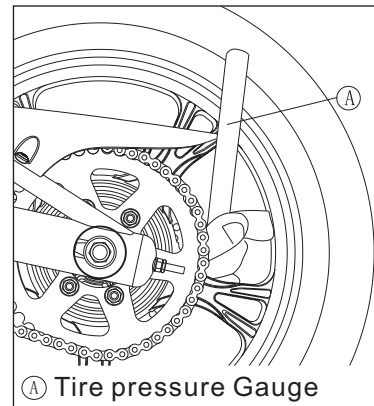
- Remove the air valve cap.
- Check the tire pressure often, using an accurate gauge.
- Make sure to install the air valve cap securely.



**Measure the tire pressure when the tires are cold (that is, when the motorcycle has not been ridden more than a mile during the past 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 Air Pressure (When cold)

Front	280kPa
Rear	280kPa



Tire Wear, Damage

As the tire tread wears down, the tire becomes more susceptible to puncture and failure.

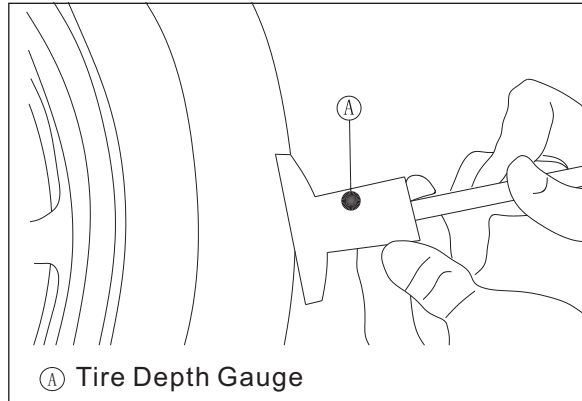
An accepted estimate is that 90% of all tire failures occur during the last 10% of tread life (90% worn).

So it is false economy and unsafe to use the tires until 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

Front	0.8~1mm
Rear	0.8~1mm



- Visually inspect the tire for cracks and cuts, replacing the tire in case of bad damage. Swelling or high spots indicate internal damage, requiring tire replacement.
- Remove any imbedded stones or other foreign particles from the tread.

⚠ NOTE

Most countries may have their own regulations requiring a minimum tire tread depth; Be sure to follow them.

Have the wheel balance inspected whenever a new tire is installed.

 **WARNING**

To ensure safe handling and stability, use only the recommended standard pressure. Tires that have been punctured and repaired do not have the same capabilities as undamaged tires. Do not exceed 100km/h (60 mph) within 24 hours after repair, and 180 km/h (110 mph) at any time after that.

 **NOTE**

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

Standard Tire (Tubeless)

Front	Size: 120/70R17 M/C (58H)
Rear	Size: 160/60R17 M/C (69H)

 **WARNING**

Use the same manufacturer's tires on both front and rear wheels.

Battery Sulfation

Sulfation occurs when the battery is left in a discharged condition for an extended time. Sulfate is a normal byproduct of the chemical reactions within a battery. But when continuous discharge allows the sulfate to crystallize in the cells, the battery plates become permanently damaged and will not hold a charge. If this happens, you must replace it with a new battery.

Battery Maintenance

Always keep the battery fully charged. Failure to do so can damage the battery and result in a shorter life. If you ride your 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 (refer to Battery Removal)
- Attach the leads from the charger and charge the battery at a rate that is a tenth 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. (see Battery Installation) .

 **CAUTION**

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 sealed battery, never fail to observe the instructions shown in the label on the battery.

Battery Removal

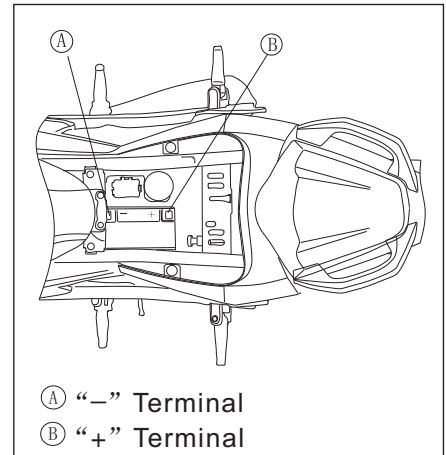
- Remove the front seat.
- Disconnect the wires from the battery, first from the (-) terminal, then the (+) terminal.
- Take the battery out of the case.
- Clean the battery with a solution of baking soda and water. Ensure that the wire connections are clean.

Battery Installation

- Place the battery in the battery case.
- Connect the wire to the (+) terminal first, then connect the wire to the (-) terminal.



Routing the (-) cable to the (+) terminal of the battery or the (+) cable to the (-) terminal can seriously damage the electrical system.



- Coat the terminals with dielectric grease to prevent corrosion.
- Cover the terminals with their caps.
- Reinstall the parts removed.

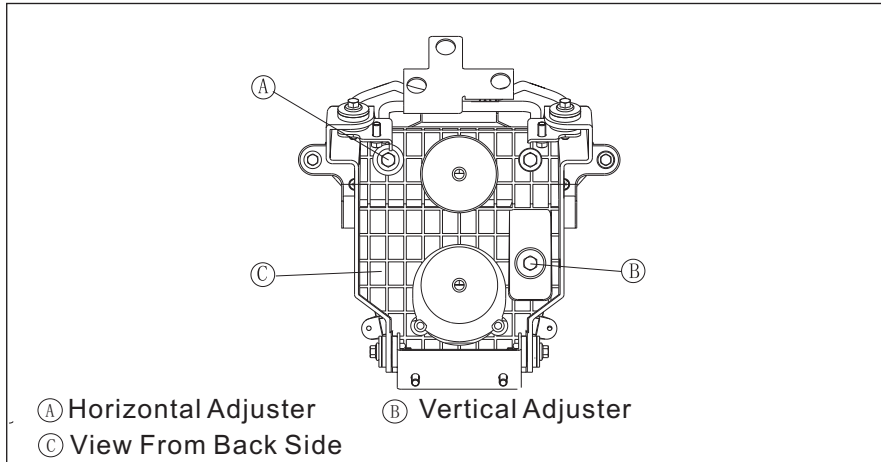
Foot pedal

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

Headlight Beam

Horizontal Adjustment

The headlight beam is adjustable horizontally. If improperly adjusted, the beam will point to left or right. You can use a screw driver to turn the horizontal adjuster clockwise or counterclockwise until the beam points straight ahead.



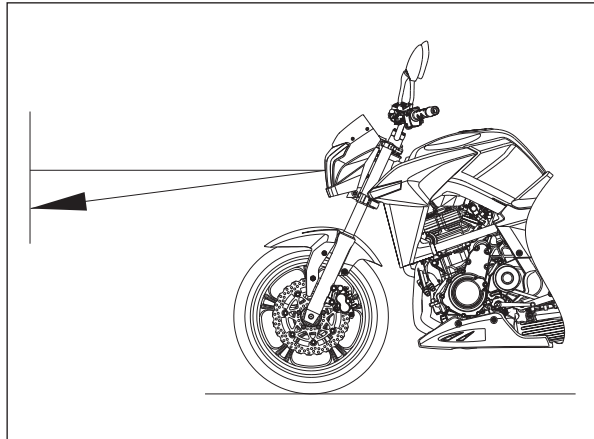
Vertical Adjustment

- The headlight beam is adjustable vertically. If adjusted too low, neither low nor high beam will illuminate the road far enough ahead. If adjusted too high, the high beam will fail to illuminate the

road close ahead, and the low beam will blind oncoming drivers. Turn the vertical adjuster clockwise or counterclockwise to adjust the vertical angle of the beam.

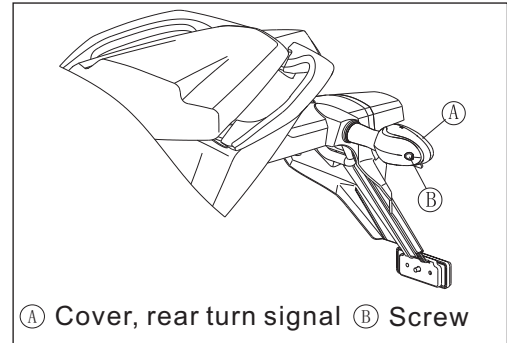


On high beam, the standard point should be slightly below with the motorcycle on its wheels and the rider seated. Adjust the beam according to local regulations.



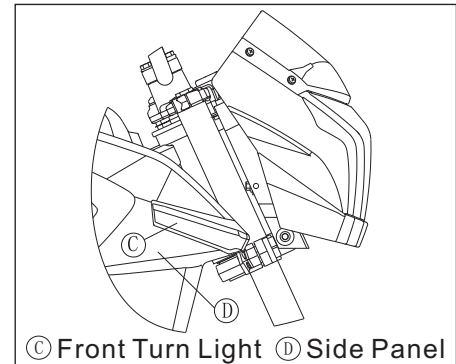
Rear Turn Light

650NK is equipped with LED turn light. If damaged, you need to replace it with a complete turn light.



Front Turn Light

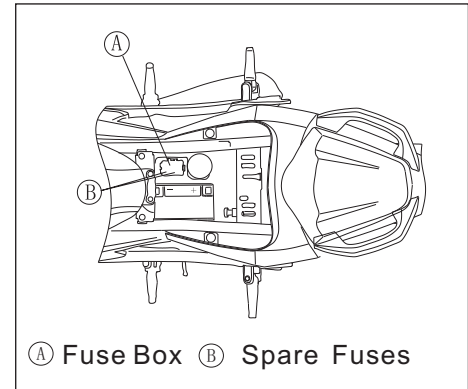
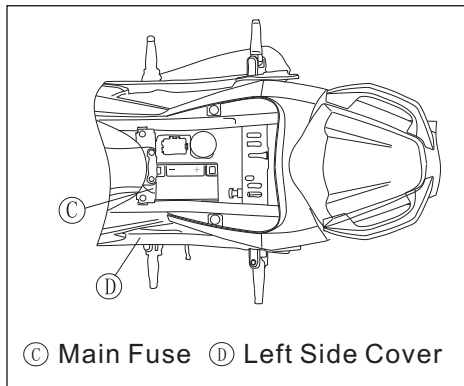
When replacing the front LED turn light, you need to remove the side panel.



Fuses

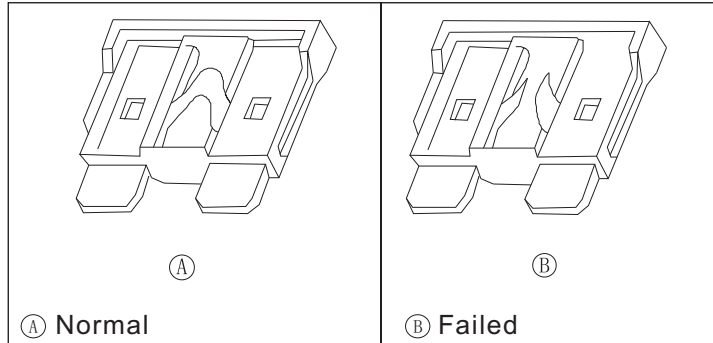
Fuse box is located under the front seat. The main fuse is fitted on the starter relay under the left side cover. If a fuse is blown, inspect the electrical system to determine the cause and replace it with the same ampere.

- Remove the front seat
- Remove the left side cover



 **WARNING**

Don't use any substitute for the standard fuse. Replace the blown fuse with a new one of the same ampere .



Cleaning Your 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 its finish from harmful UV rays, pollutants, and reduce the amount of dust reaching its surfaces.

- Always wash the motorcycle before the engine and muffler cool down.
- Avoid applying degreaser to seals, brake pads, and tires.
- Always use non-abrasive wax and cleaner.
- Avoid all harsh chemicals, solvents, detergents, and household cleaning products like ammonia-based window cleaners.
- Gasoline, brake fluid, and coolant will damage the finish of painted and plastic surfaces: wash them off immediately.
- Avoid wire brushes, steel wool, and all other abrasive pads or brushes.
- 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 delicate areas such as air intakes, fuel line, brake components, electrical components, muffler outlets and fuel tank openings.

Washing Your Motorcycle

- Rinse with cold water from a garden hose 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 from 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 dry the brakes and restores them to 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, immediately wash your motorcycle with cold water. Don't use warm water to wash your vehicle as it accelerates the chemical reaction of the salt. After drying, apply an anti-corrosion sprays on all metal or chrome surfaces to prevent corrosion. In the case of riding in the rain or washing the motorcycle, condensation may form on the inside of the headlight lens. To remove the moisture, start the engine and turn on the headlight, gradually the condensation formed on the inside of the lens will clear off.

Painted Surfaces

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

Windshield And Other Plastic Parts

After washing, use a soft cloth to gently dry off plastic parts. When dry, treat the windshield, headlight lens, and other unpainted plastic parts with an approved plastic cleaner/polisher product.

 CAUTION
--

<p>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-locking agents, or other harsh chemicals. If a plastic part comes in contact with any harsh chemical substance, wash it off with water and a mild neutral detergent immediately, and then inspect for damage. Avoid using abrasive pads or brushes to clean plastic parts, as they will damage the plastic parts' finish.</p>
--

Chrome and Aluminum

Chrome plating and uncoated aluminum parts exposed to road salt or salt in the air in coastal areas are susceptible to corrosion if not properly cleaned. Coated aluminum should be cleaned with a mild neutral detergent and finished with a spay polish. Both painted and unpainted aluminum wheels can be cleaned with non-acid based wheel spray cleaners.

Leather, Vinyl, and Rubber

If your motorcycle has leather accessories, special care must be taken. Use a leather cleaner/treatment to clean and care leather accessories. Washing leather parts with detergent and water will damage them, shortening their life.

Vinyl parts should be cleaned with the rest of your motorcycle, then treated with a vinyl treatment. The sidewalls of tires and other rubber components should be treated with a rubber protectant to preserve their life.



WARNING

Special care must be taken not to get any rubber protectant on the tire tread surface when treating. This 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 to warm the oil, shut it off, then drain the engine oil.



WARNING

Motorcycle oil is a toxic substance. Dispose the used oil properly. Contact your local authorities for approved disposal methods or possible recycling. Plus, keep the used oil out of reach of children.

- Fill in 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 “OFF” . 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. Contact your local authorities for approved disposal methods.

- Empty the fuel system by running the engine at idle speed until the engine stalls. (if left in for a long time, the fuel will break down and clog the fuel system.)
- Reduce tire pressure by 20%.

- Set the motorcycle on a box or stand so that both wheels are raised off the ground. (If this can't be done, put boards under the front and rear wheels to keep dampness away from the tire rubber.)
- Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or in the brakes.
- Lubricate the drive train and all cables.
- Ensure that the battery is fully charged before storage. Remove the battery and store it out of the sun and in a cool, dry place.
- 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.
- Fuel the fuel tank.
- Check all the points listed in Daily Safety Checks section.
- Lubricate the pivots, bolts and nuts.

WARNING LABELS ON MOTORCYCLE

Please read all warning labels on the motorcycle and heed their instructions before your first riding. If any of the labels depicted in this manual differ from the labels on your ATV, always read and follow the instructions of the labels on the ATV.

EFI ERRORS CODING TABLE

Short Flashing [S.F.] =Units Digit of Error Number

Long Flashing [L.F.] = Tens Digit of Error Number

S.C. = Short Circuit to battery

S.C.G = Short Circuit to Ground

O.C. = Open Circuit

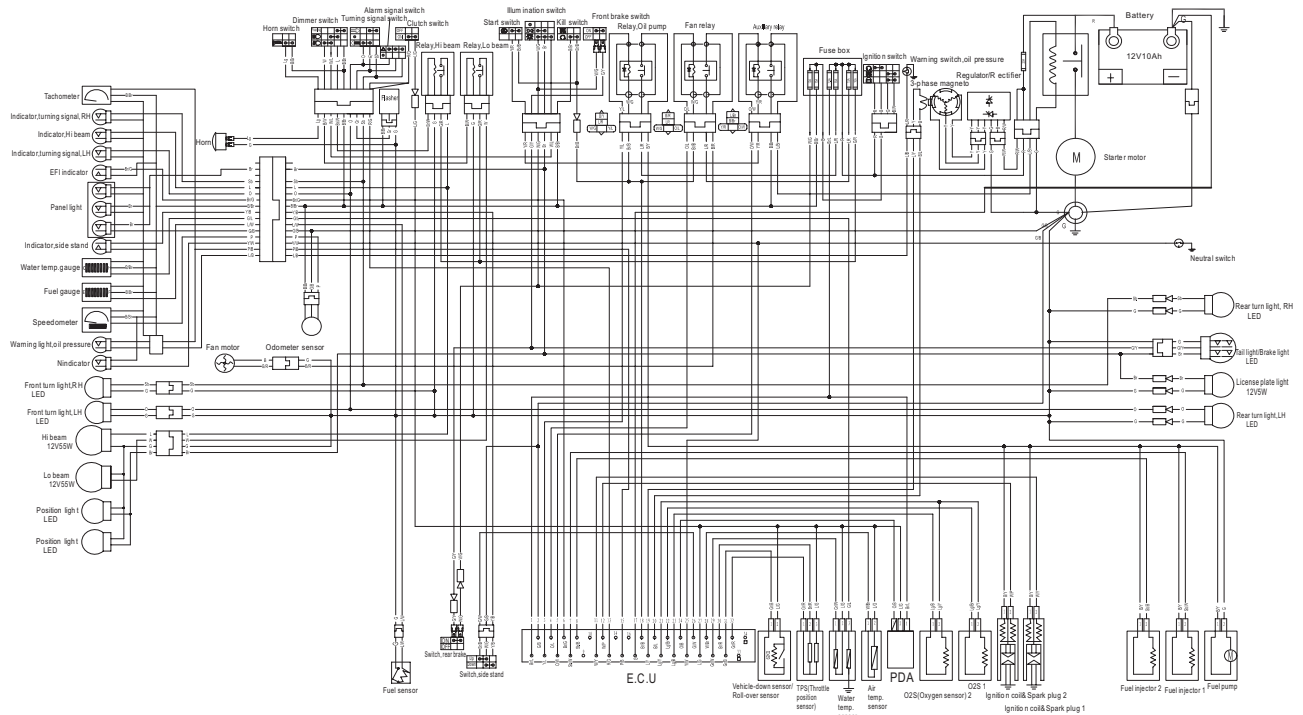
The error indicator light is at right and lower corner of dashboard. If the indicator flashes, then it means EFI system has something wrong. Below table shows what kind of error every flashing condition stands for. There are two different kind of flashing. Long flashing means tens digit and short flashing means units digit. Long flashing occurs firstly and then short flashing occurs. One Long Flashing means ten, two Long flashing means twenty and so on. For instance, as for error code “23” , after error indicator lighted and will have 2 times of long flashing and then 3 times of short flashing.

ERRORS TYPE	ERROR CODE	FLASHING TIMES
ERROR_TPS(Throttle Position Sensor) _LOW	1	1(S.F.)
ERROR_TPS(Throttle Position Sensor) _HIGH	2	2(S.F.)
ERROR_TH ₂ O (Water Temp. Sensor) _LOW	3	3(S.F.)
ERROR_TH ₂ O (Water Temp. Sensor) _HIGH	4	4(S.F.)
ERROR_TAIR (Air temp. Sensor) _LOW	5	5(S.F.)
ERROR_TAIR (Air temp. Sensor) _HIGH	6	6(S.F.)
ERROR_PAIR (Air Pressure Sensor) _LOW	7	7(S.F.)
ERROR_PAIR(Air Pressure Sensor) _HIGH	8	8(S.F.)
ERROR_VB(Battery Voltage) _LOW	9	9(S.F.)
ERROR_VB(Battery Voltage) _HIGH	10	1(L.F.)
ERROR_INJ1(1 cylinder injector) _SC	11	1(L.F.)+1 (S.F.)
ERROR_INJ1(1cylinder injector) _SCG	12	1(L.F.)+2 (S.F.)
ERROR_INJ1(1 cylinder injector) _OC	13	1(L.F.)+3 (S.F.)
ERROR_INJ2(2 cylinder injector) _SC	14	1(L.F.) + 4(S.F.)
ERROR_INJ2(2 cylinder injector) _SCG	15	1(L.F.) + 5(S.F.)
ERROR_INJ2(2 cylinder injector) _OC	16	1(L.F.) + 6 (S.F.)
ERROR_FANR (Fan Relay) _SC	23	2(L.F.) + 3 (S.F.)

ERRORS TYPE	ERROR CODE	FLASHING TIMES
ERROR_FANR (Fan Relay) _SCG	24	2(L.F.) + 4(S.F.)
ERROR_FANR (Fan Relay) _OC	25	2(L.F.) + 5 (S.F.)
ERROR_MAINR (Main Relay) _SC	26	2(L.F.) + 6(S.F.)
ERROR_MAINR (Main Relay) _SCG	27	2 (L.F.) + 7(S.F.)
ERROR_MAINR (Main Relay) _OC	28	2(L.F.) + 8(S.F.)
ERROR_ENSTR (Auxiliary Starter Relay) _SC	29	2(L.F.) + 9 (S.F.)
ERROR_ENSTR (Auxiliary Starter Relay) _SCG	30	3 (L.F.)
ERROR_ENSTR (Auxiliary Starter Relay) _OC	31	3(L.F.) + 1 (S.F.)
ERROR_RPMO(Engine RPM Output) _SC	32	3(L.F.) + 2 (S.F.)
ERROR_RPMO(Engine RPM Output) _SCG	33	3(L.F.) + 3 (S.F.)
ERROR_RPMO(Engine RPM Output) _OC	34	3(L.F.) + 4 (S.F.)
ERROR_DLAMP(Error indicator light) _SC	35	3(L.F.) + 5 (S.F.)
ERROR_DLAMP(Error indicator light) _SCG	36	3(L.F.) + 6 (S.F.)
ERROR_DLAMP(Error indicator light) _OC	37	3(L.F.) + 7 (S.F.)
ERROR_LAMBDA1(1 cylinder Oxygen Sensor)	47	4 (L.F.) + 7(S.F.)
ERROR_LAMBDA1(2 cylinder Oxygen Sensor)	48	4 (L.F.) + 8(S.F.)
ERROR_SAFETYSW(Roll-over sensor) 0	49	4 (L.F.) + 9(S.F.)

ERRORS TYPE	ERROR CODE	FLASHING TIMES
ERROR_SAFETYSW(Roll-over sensor) 1	50	5 (L.F.)
ERROR_PK (Pick up) _OC	53	5(L.F.) + 3(S.F.)
ERROR_PK (Pick up)	54	5(L.F.) + 4(S.F.)
ERROR_IGN1(1 cylinder ignition coil) _CURRENT	55	5(L.F.)+ 5 (S.F.)
ERROR_IGN1(2 cylinder ignition coil) _CURRENT	56	5(L.F.)+ 6 (S.F.)

ELECTRIC DIAGRAM



Code	R	RW	RG	B	BlW	BY	Bb	BL	BR	G	GR	GY	GB	GW	GL	L	LR	LB	LW	LG	O	OB	OW	OL	W	WY	WL	WB	WG	WB	WP	P	PB
Color	Red	Red-White	Red-Green	Blue	Blue-White	Blue-Yellow	Black	Black-Red	Green	Green-Red	Green-Yellow	Green-Blue	Green-White	Light Green	Light Blue	Light Yellow	Light Red	Light Blue	Light White	Light Green	Light Yellow	Light Blue	Light Green	Light White	Light Yellow	Light Red	Light Blue	Light White	Light Green	Light Yellow	Light Blue	Light Green	Light White
Code	Y	YW	YR	YB	YL	Gr	GrR	GrW	GrB	Br	BrR	BrL	GrG	GrW	B/W	Lg	LgR	LgG	LgY	LgBr	LgB	Sb	SbW	SbB									
Color	Yellow	Yellow-White	Yellow-Red	Yellow-Blue	Yellow-Light Blue	Green	Green-Red	Green-White	Green-Blue	Brown	Brown-Red	Brown-Light Blue	Green-Green	Green-White	Black/White	Light Green	Light Green-Red	Light Green-Green	Light Green-Yellow	Light Green-Brown	Light Green-Blue	Black	Black-White	Black-Blue									



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