BLUROC

MOTORCYCLES



SPIRIT

OWNER'S MANUAL

Important Cautions

About running-in of a motorcycle

The first 1000 km operation is very important in the entire service life of a motorcycle. A correct running-in can guarantee both the longest service life and the best performance of the vehicle. Running-in can polish machined surfaces and form smooth engagement.

Careful and patient running-in can make the motorcycle stable in driving and give a full play to its excellent performance. It is important not to do any operation that may cause overheat to engine components.

For specific running-in method, please refer to "Running-in of a new vehicle".

Please carefully read the manual and strictly observe all instructions or descriptions.

Special attention shall be paid to the contents emphasized with the terms of "⚠ WARNING" "**caution**" and "**note**", etc.

⚠ WARNING **……**It concerns with personal safety. Ignoring it may result in accident.

Precaution……It refers to operational methods that must be followed or measures that should be taken, so as to prevent damage.

Note……It refers to special explanations to make maintenance or important descriptions more explicit.

The operation manual shall be deemed as a permanent document of the motorcycle. When transfer the vehicle to others, the instruction manual shall also be transferred to the new owner.

The series includes the following model(s):

BLUROC SPIRIT



Foreword

Thank you for your choosing our motorcycle. In design, development and manufacture of the series motorcycle, our company applies the latest advanced technology and equipment to provide you with a motorcycle that is reliable in performance, novel in design and elegant in appearance. Motorcycle driving is one of the most exciting sports. The motorcycle is an ideal means of transport. It can give you infinite driving pleasure. Before driving your motorcycle, please be familiar with all stipulations and requirements mentioned in the instruction manual.

The instruction manual deals in the correct use, maintenance and maintenance of the motorcycle. Observing the following stipulations will provide a guarantee to your motorcycle for a long time use without trouble. The distributor has skillful and well trained technical professionals to provide the best maintenance and service to your motorcycle.

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Chapter 1 User Instructions

Instructions on safe driving of motorcycle

There should be a condition for the motorcycle to serve your well. The condition is paying attention to safety at any time. Therefore, you must observe the traffic laws and follow the six points below.

Wear safety helmet

Safe driving starts from wearing a safety helmet. This is an important factor in motorcycle driving. A high-quality safety helmet is the first thing of personal protection in motorcycle driving. The most serious traffic accident is head injury. Therefore, be sure to wear a safety helmet to drive a motorcycle, and wear a pair of proper protective glasses.

Please be familiar with the vehicle structure

Your driving technique and your understanding of mechanical knowledge are the basis of safe driving. Make exercises in a spacious place without other vehicle and make yourself fully familiar with your motorcycle and control method. Be sure to keep in mind that, skill comes from practice.

Understand the limit of your safe speed

Driving speed depends on road surface conditions, your skills and the weather. Understanding the limit may prevent accident. At any time, accident may be prevented as long as driving in the range of your skill.

Wear well-fitting dress

Loose and fancy dress may make you uncomfortable and unsafe in your driving. Riding on the cradle, a well-fitting dress may give you freedom for activities of your arms and legs. Gloves, boots and safety helmet will show that you are qualified driver. High quality and tight dress shall be your selection.

Pay more attention to safety during driving in rainy weather

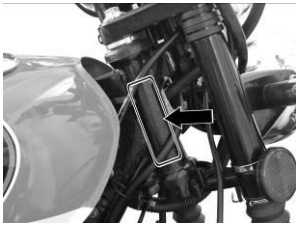
Please note that, in rainy days, the braking distance is two times as much as that in fine weather. Get away from any manhole cover, paint mark or oil stain surface to prevent slipping, wet roads are dangerous. Avoid abrupt steering during acceleration. Be careful when drive over railways and bridges and keep a safe distance with any vehicle in front.

Inspection before driving

Please carefully read all instructions in "inspection before driving" of the manual to guarantee the safety of you and passengers.

Position of serial numbers

Chassis number (or VIN code)



Engine number



Position of metal nameplate



Chassis number (or VIN code) and engine number is necessary for registration of your motorcycle. Such numbers are needed with order components or service, to allow the distributor to provide you with better service.

Chassis number (or VIN code) is on the riser pipe of chassis. Engine number is on the left side of crankcase. Metal nameplate is on the riser pipe of chassis, showing the main technical parameters, manufacturer and date of production of the motorcycle.

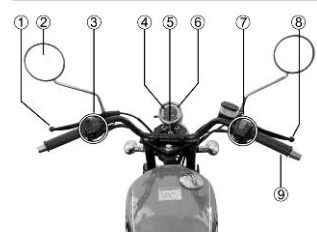
Write the numbers in the spaces below, for future reference.

Chassis number:
Engine number:

Chapter 2 Installation Position of Parts

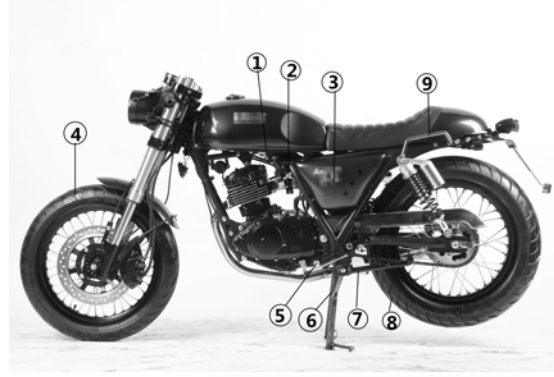
Handle bar instrument

1 Clutch grip
2 Rearview mirror
3 Left handlebar switch
4 Speedometer
5 Ignition switch
6 Tachometer
7 Right handlebar switch
8 Front brake grip
9 Accelerator



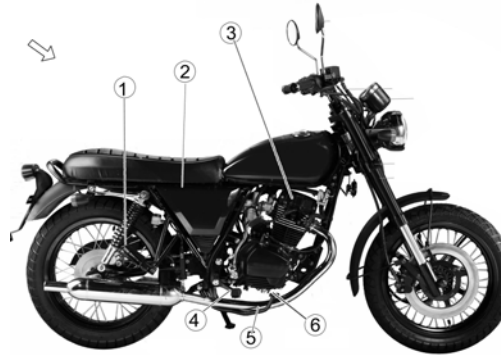
Left side view

1 Fuel pump assembly
2 Fuel injector
3 Air cleaner
4 Front wheel
5 Gear lever
6 Center stand
7 Side stand
8 Rear wheel
9 Rear carrier, LH



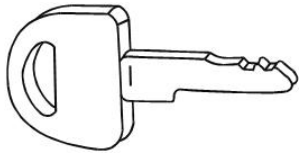
Right side view

1 Back foot shelf
2 Battery and Fuse
3 Spark plug
4 Front foot shelf
5 Rear brake pedal
6 Discharge oil bolt



Chapter 3 Control Part

Key



Two keys are provided. Please use one key and put the other in a safe place for future use.

Instrument panel



Fig 1



Fig 2

High beam indicator lamp ①

When the head light is in high beam, the indicator is lit.

Turning signal lamp ②

When left turning signal lamp is ON, the left turning signal indicator on the panel "⇦" and turning signal lamp will flash.

When right turning signal lamp is ON, the right turning signal indicator on the panel "⇨" and turning signal lamp will flash.

Precaution:

If one of front and rear turning lights is damaged, the indicators on the instrument panel and the turning lights may be lit consistently, or may flash fast or slow. Then, timely locate the cause and carry out troubleshooting.

Engine trouble warning lamp ③

This warning lamp flashes or stays on if an electrical circuit monitoring the engine is not working cor-rectly. If this occurs, have a Pioneer dealer check the self-diagnosis system.

The electrical circuit of the warning lamp can be checked by turning the key to "ON". The warning lamp should come on for a few seconds, and then go off. If the warning lamp does not come on initially when the key is turned to "ON", or if the

warning lamp remains on, have a Pioneer dealer check the electrical circuit.

Fuel empty warning lamp FIG1 ④

When this warning lamp flashes or stays on, refuel as soon as possible.

Fuel meter FIG2 ④

The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear towards "E"(Empty) as the fuel level decreases. When the last fuel meter segment starts flashing, refuel as soon as possible.

Gearshift Indicator FIG 1 ⑤

This indicator will show the current gear where the motorcycle is. There are all 5 gears. The 5 number indicators will be lit in turn on shifting. However, when the gear shifter is set in the neutral mode, they will extinguish, but only neutral indicator (N) is lit.

Neutral indicator lamp FIG 2 ⑤

This indicator lamp comes on when the transmission is in the neutral position.

Odometer ⑥

Records the total distance(km) that the motorcycle has traveled since it was used.

Trip meters FIG 1 ⑦

This show the distance traveled since it was last set to zero.

Tachometer FIG 2 ⑦

It shows the engine rotation speed in number of revolutions per minute.

Speedometer FIG 1 ⑧

Shows the driving speed in km per hour.

Speedometer FIG 1 ⑨

Shows the driving speed in mile per hour.

Reset knob FIG 1⑩

Turn it counterclockwise to reset the mileage number on the trip meter to zero.

Speedometer FIG2 ⑧

Shows the driving speed. It can switch between kilometers and miles.

RESET/SELECT button FIG2 ⑨

Be sure to turn the key to "ON" before using the "R/S" button. To switch the speedometer between kilometers and miles, press the **"RESET/SELECT"** button for at least three seconds.

⚠ WARNING

Be sure to stop the motorcycle before making any setting changes to the multi-function display. Changing settings while riding can distract the operator and increase the risk of an accident.

Ignition switch

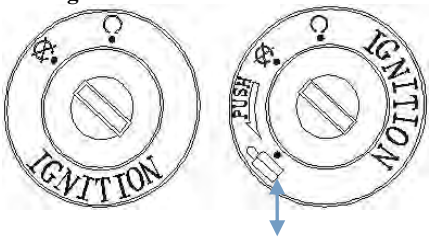


FIG1 (LOCK) FIG2

There are two types, three-position as showed in following sketches, to be used for different models**.**

"⊗" (OFF) position

All circuits are disconnected and the key can be removed.

"○" (ON) position

All igniting circuits are ON and the engine can be started. The key cannot be removed in this position.

"🔒" (LOCK) Position (FIG2)

In order to lock the handlebar, turn the bar to the left, then insert the key. Rotate it clockwise to full stop for locking the handlebar.

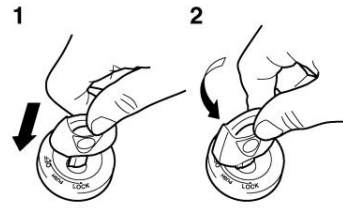
⚠ WARNING

If the handlebar is locked, the motorcycle is never pushed any longer; otherwise you will lose balance.

⚠ WARNING

Never turn the key to "OFF" or "LOCK" while the vehicle is moving. Otherwise the electrical systems will be switched off, which may result in loss of control or an accident.

To lock the steering:



1. Push

2.Turn

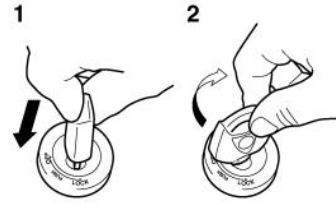
1.Turn the handlebars all the way to the left or right.

2.Push the key in from the "OFF" position , and then turn it to "LOCK" while still pushing it .

3.Remove the key.

To unlock the steering:

To lock the steering:

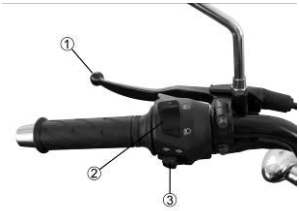


1. Push

2.Turn

Push the key into the main switch, and then turn it to "OFF" while still pushing it .

Left handlebar control system



Clutch grip ①

To start the engine or make a gear shifting, press the grip to release the drive system and cut off the clutch.

Dimmer switch ②

When dimmer switch is turned up to "≡D" (high beam) position, the head light is in high beam and the high beam indicator lamp on the instrument panel is lit. On contrary, when it is turned down to "≡D" (low beam) position, the low beam is lit.

Turning signal operation When the switch is turned to left " ⇦ " position, the left turning signal lamp is lit and the indicator lamp on instrument panel flashes. When the switch is turned to right " ⇨ " position, the right turning signal lamp is lit and the indicator lamp on instrument panel flashes.

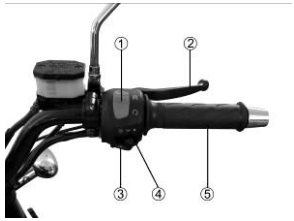
⚠ WARNING

Whenever you are going to change lane or make a turning, timely turn ON the turning signal lamp. After lane change or turning, timely turn the signal light OFF.

Horn button ③

Press " " button and the horn will sound.

Right handlebar control system



Engine shutdown switch ①

The switch is a rocker switch, located on the tip of right handlebar control panel, with the rockshaft at the center of the rocker. When it is pressed in "○" start position, the switch is turned and the engine can be started. It is an emergency switch.

If the switch is pressed in "⊗" position, the starting circuit is completely cut off and the starter motor cannot be started. Do not put the switch in this position during driving.

Front brake grip ②

To apply front wheel brake, slowly press the brake grip on the right handlebar. As the motorcycle adopts hydraulic braking， do not press it abruptly or forcefully.

When the brake grip is pressed,

the brake light will be lit automatically.

Electric start button ③

Press "Ⓢ" button to turn on the start motor circuit. During starting, put in neutral gear position to cut off transmission and guarantee safety.

⚠ WARNING

The starter motor shall be operated not more than 5 seconds. Heavy discharge may cause overheat to circuit and starter motor. If starting is failed after several attempts, stop to check the fuel supply system and starting circuit (refer to "Troubleshooting").

Lighting switch④

" ☼ " ON position When the switch is turned to this position, the head light, front position light, instrument panel light and rear tail light will be lit.

"≡D ◇≡" parking light position When the switch is turned to this position, the front position light, instrument panel light and rear tail light will be lit.

"●" OFF position All the head light, front position light, instrument panel light and rear tail light go OFF.

Accelerator grip⑤

Accelerator grip is used to control the engine speed. To accelerate, turn the grip towards yourself. To decelerate, turn the grip away from yourself.

Fuel tank cap



To open fuel tank cap, insert the key and turn it clockwise. Then, the fuel tank cap can be removed together with the key. To replace the cap, align the arrow on the cap and press the cap, together with the key, into the fuel tank cap hole until a click sound is heard. Then, remove the key.

⚠ WARNING

Make sure that the fuel tank cap is properly installed before riding. Leaking fuel is a fire hazard.

(1) Gasoline level (2) Filler

⚠ WARNING

Do not fill the tank excessively. Never splash fuel to hot engine. No fuel shall be left on the upper part

of the filler, or the fuel may overflow when fuel temperature rises and expands, causing hazard.

During fuel refilling, shutdown the engine and turn the key to OFF position. Smoking or lighting fire is strictly forbidden during fuel refilling.

Gear lever



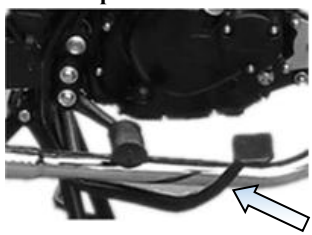
The motorcycle is provided with a 5-speed gear transmission. The gear lever connects to a ratchet mechanism in the transmission. After selecting a gear, the gear lever returns to the home position，so that the next gear can be selected. The neutral gear is between the low gear and two speed gear. From neutral position, press downs the gear lever to engage a low gear. Raise the gear lever one step to move forward a gear. Owing to the ratchet mechanism，it cannot move two or more gears up or down in one operation. To shift from 2-speed gear to low gear, or from low gear to 2-speed gear, it passes the neutral position but not stays there. To engage to neutral gear，stop it in the middle of moving from low gear to 2-speed gear.

Precaution：

When the transmission is in neutral position, the neutral indicator lamp is lit on the instrument board. Despite the lamp is lit, be careful to release the clutch grip slowly to make sure if the transmission is really in neutral position.

When engaging into a low gear during high speed driving, the engagement of clutch may make a sudden increase in engine speed. Before engaging a low gear, slow down the motorcycle to prevent unnecessary wear of components in transmission system.

Rear brake pedal



Press down this pedal to apply rear wheel brake, and the brake indicator light is lit.

Stand



The vehicle is equipped with two stands, a center stand ① and a side stand②.

If you want to use center stand to park the vehicle, grasp the handlebar with left hand and step on bar of stand, then lift rear rack to put vehicle on stand.

If you want to park vehicle with side stand, step on side stand end to front limit position on chassis.

CAUTION:

If you park the vehicle on sloped ground, please let it head higher direction to prevent it from sliding down.

For the sake of driving safety, before setting out, please make sure that stands are return to upper position and they don't loose and swag.

Rear shock damper



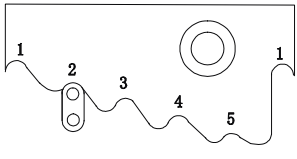


Spring adjustment

The shock damper springs of rear wheel can be adjusted according to the payload, driving mode and road conditions. The adjustment can be one of the five stages. Park the vehicle on its central stand or side stand and turn the spring tension ring to the required position. The first stage is the softest and the fifth stage is the hardest. The second stage is as the factory setting.

WARNING

The springs of both sides must be at the same stage. Otherwise, they may cause an unstable steering bar.



Front fork assy



Steering stem



Disk, front brake Disk, back brake

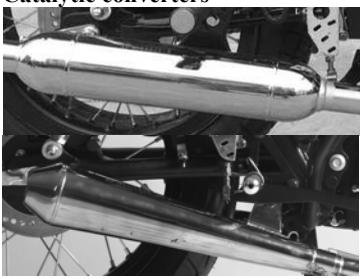




Tire



Catalytic converters



This vehicle is equipped with catalytic converters in the exhaust system.

⚠ WARNING

The exhaust system is hot after operation. To prevent a fire hazard or burns:

- Do not park the vehicle near possible fire hazards such as grass or other materials that easily burn.
- Park the vehicle in a place where pedestrians or children are not likely to touch the hot exhaust system.
- Make sure that the exhaust system has cooled down before doing any maintenance work.
- Do not allow the engine to idle more than a few minutes. Long idling can cause a build-up of heat.

Chapter 4 Fuel and lubrication system

Section 1. Fuel

WARNING

Gasoline is inflammable and explosive. When handling gasoline, attention should be paid to prevent burnt or accident.

- **In places where gasoline is stored or handled, shutdown the engine, do not smoke, and keep away from naked flame or spark.**
- **Refueling shall be made in a well ventilated place. After refueling, immediately clean off any gasoline outside the fuel tank.**

Please #93 or #95 (GB17930-1999) unleaded gasoline. This may prolong the service life of spark plug.

Note!

If the engine produces ping noise, it may be caused by using of improper fuel. Replace with correct fuel.

WARNING

The use of improper gasoline will cause severe damage to internal engine parts, such as the valves and piston rings, as well as to the exhaust system.

Alcohol gasoline

If alcohol-gasoline is used, please use #90 or higher conforming to GB18351-2004. To ensure service life of EFI parts, please use alcohol-gasoline blends (below E10) for EFI type vehicle. Do not use methanol gasoline, even though it may contain cosolvent and anti-corrosion agent.

Note!

- If alcohol-gasoline is exposed to water excessively, ethanol may be separated, resulting in decrease of gasoline octane number. Therefore, the storage time shall not be too long.
- Before using alcohol-gasoline for the first time, make a through cleaning of the fuel supply system and fuel tank.
- Always buy a proper amount of alcohol-gasoline. Once there is a poor fuel tank sealing or a long storage time, moisture content may increase, causing low octane number and resulting in difficult ignition or **weak power.**

⚠ WARNING

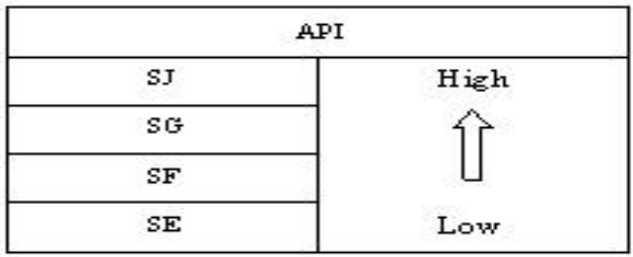
Gasoline is poisonous and can cause injury or death. Handle gasoline with care. Never siphon gasoline by mouth. If you should swallow some gasoline or inhale a lot of gasoline or inhale a lot of gasoline vapor, or get some gasoline in your eyes, see your doctor immediately. If gasoline spills on your skin, wash with soap and water. If gasoline spills on your clothing, change your clothes.

Section 2 . Lubricant

(Please refer to Regular Maintenance Table)

Use high quality 4-stroke engine oil to prolong engine life. Engine oil shall be SG or SJ product in API classification. Engine oil of proper viscosity shall be used according to local air temperature. There are three viscosity levels suitable for the engine, namely, SAE15W-40, SAE10W-30 and SAE5W-30.

Refer to the figure below:



SG or SJ level SAE10W-40 4-stroke lubricant is recommended.

Note:

Lubricant shall be replaced at 1000km or about one month for the first time, every 3000km thereafter. Oil volume is 850ml for replacement or 1300ml after overhaul.

The quality of engine oil is a major factor affecting the service life of engine. Replace engine oil according to the maintenance period stated in maintenance table. When driving in dusty area, engine oil shall be replaced more frequently than the stipulations in the maintenance table.

Explanation:

During cold weather, it is advisable for user to use high quality low temperature lubricating oil. SG 10W-30 or SF 5W-30 is recommended. For temperature below -35°C, the following use time, API SG or higher class 5W-30 lubricant of notable brand is recommended.

Warning:

Inferior lubricant may cause irretrievable loss to the engine and seriously shorten the service life of engine.

Section 3: Electronic Fuel Injection System

ⅰ.Electronic fuel injection system(hereinafter referred to as EFI system)

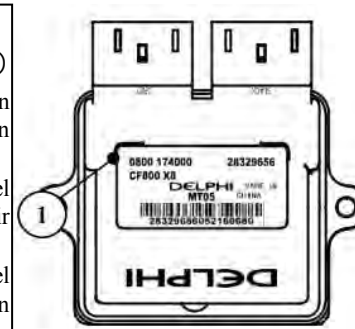
ⅰ.Introduction of EFI system components

1. ECU

According to received information, ECU ① calculates necessary fuel injection quantity in programming mapping way, and sends operation signal of output section to fuel injector.

Light load: when engine load is light, fuel injection time (volume) is determined based on air inlet pressure and engine rotation speed.

Heavy load: when engine load is heavy, fuel injection time (volume) is determined based on throttle valve opening and engine rotation speed.





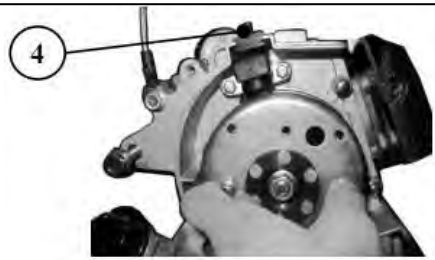


2. Temperature sensor of cylinder wall

Temperature sensor ② of cylinder head pro- -vides engine with engine temperature signal for correcting ignition angle and fuel injection quantity during startup, idling and normal operation.
When engine temperature is low, injection quantity increases.
Thermistor resistance increases when engine temperature decreases, and decreases when temperature increases.

3. Oxygen sensor

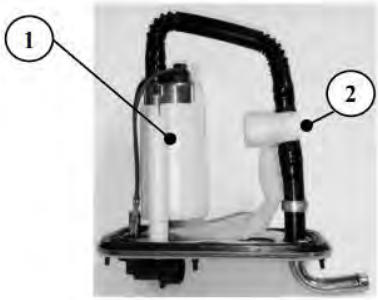
Made of zirconia element (platinum sheet), oxygen sensor ③ changes output voltage based on different oxygen concentration of internal and external surfaces.
Change of voltage relies on oxygen concentr- -ation.
Terminal voltage decreases when oxygen concentration is high; terminal voltage increases when oxygen concentration is low.



Rotation speed

4. Rotation speed (trigger coil, crank position)

Rotation speed sensor ④ generates and sends ignition signal to ECU; according to the signal, ECU calculates and determines injection and ignition time .
Installation clearance: 0.4 to 0.9 mm





5. Fuel pump assembly

Components: fuel pump ① , pressure regula- ting valve ② , fuel pump support, etc.

Placed in fuel tank, **Fuel pump** ① is powered by battery (9 to 15V).

By controlling power supply, ECU manages fuel pump action to provide fuel injector with high pressure fuel.

Placed in fuel tank, **pressure regulating valve** ② keeps high pressure fuel from fuel pump at 2.5MPa, providing fuel injector with stable high pressure fuel.

6. Fuel injector

Fuel injector ③, uses pressurized fuel in fuel pump.

Fuel injector charges fuel via gravity and injects pressurized fuel into air inlet pipe.
Pressure piston controlled by ECU injects necessary amount of fuel at optimal timing during engine operation.

7. Air inlet elbow

Connecting to fuel injector, air inlet elbow ④ is the access for fuel and air to enter cylinder.



8. Throttle valve

Throttle valve ⑤ is a controllable valve to control air to enter engine.

After entering air inlet pipe, air will mix with gasoline to form combustible mixture for combusting and working.



II. Disassembly and assembly of EFI system components

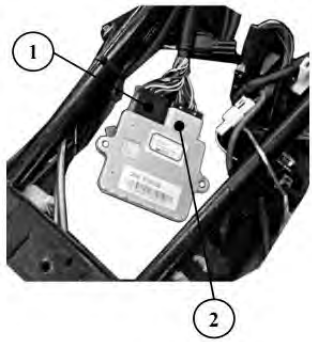
1. ECU

Disassembly:

A:Close ignition switch

B:Remove

C:Disconnect wire group plug-in ① and ②



Assembly:

Before installation, confirm plug-in and ECU slot are free of dust, sundries, water drop, etc.

Press ECU towards plug-in direction gently. After a "snap" sound, it is installed into position.

⚠ WARNING

ECU is not allowed to be disassembled or assembled when its power is on.

Attention:

Installation position: with favorable ventilation and heat dissipation; far away from engine, collision, overheat, exposing to sunlight, waste gas, water and dust, and electromagnetic interference; guarantee waterproof tightness.

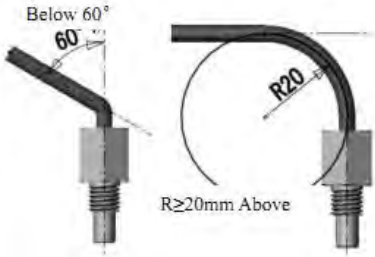
2. Temperature sensor of cylinder head

Disassembly:
A:disconnect wire group plug-in of temperature sensor of cylinder head.
B:disassemble temperature sensor ③ of cylinder head.



Assembly:
Direction of wire group from sensor should be controlled within 60° .
Bending of wire group should be controlled above radius (R20).
Installation torque:
(12±2) N.m.





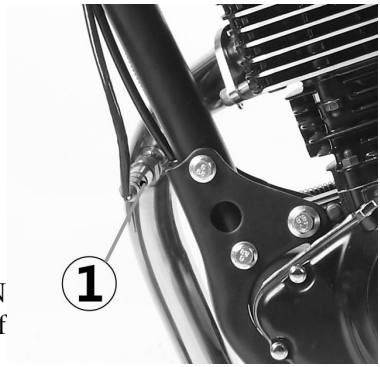
⚠ WARNING

It is prohibited to pull or bend wire excessively.
It is prohibited to disassemble or assemble sensor after connecting plug-in.
It is prohibited for wire group to contact heat source with high temperature, which will damage wire.

3. Oxygen sensor

Disassembly:

Disconnect wire group plug-in of oxygen sensor and disassemble oxygen sensor ①.



Assembly:

Screw oxygen sensor into threaded hole.

Tighten torque: 13N.m to 17N

Connect wire group plug-in of oxygen sensor.

Bending angle of wire group at sensor edge or clamping location should not be less than R20.

⚠ WARNING

It is prohibited to disassemble or assemble sensor after connecting plug-in.

Before installation of a disassembled sensor, it is prohibited to apply anti-rush oil or lubrication oil to the sensor; sintering prevention agent should be applied to it .

Plug-in must be fixed to a motorcycle directly; it is prohibited to be suspended.

It is prohibited for oxygen sensor to bump against hard surface, preventing component damage.

After installation of oxygen sensor, it is prohibited to exert big knocking force on engine, preventing oxygen sensor damage caused by big impact force.

It is prohibited for chemical substances (such as serious carbon deposition, silicone oil, engine oil and lead) from engine to pollute sensor, which will poison oxygen sensor irreversibly.

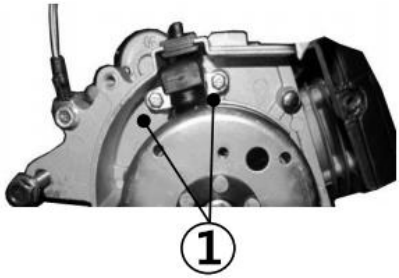
It is prohibited to pull or twine wire group of sensor forcefully, which will damage circuit of oxygen sensor.

It is prohibited to apply grease and cleaning agent to head of oxygen sensor, preventing its corrosion.

5. Crank position sensor

Disassembly:

Disconnect 2 bolts ①.



Assembly:

Installation clearance:
0.4 to 0.9mm

4. Fuel pump assembly

Disassembly:

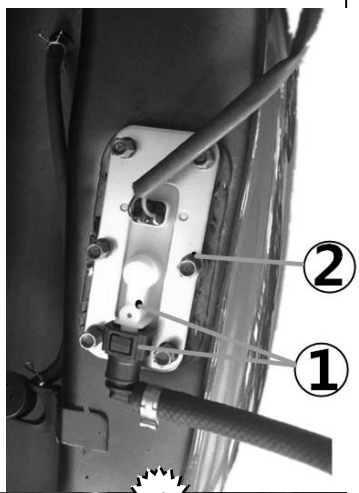
A: disassemble fuel pipe connecting to fuel outlet pipe ①

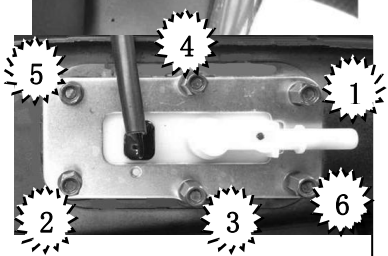
B: disassemble 6 nuts ② and remove fuel pump.

Assembly:

According to disassembly method, assembly follows the sequence of **B ⇨ A**

Tightening torque of screw: 2.2N.m to 2.8 N.m , assembly sequence of screw: 1-2-3-4-5-6.





WARNING

Never touch live line of wire group plug-in by hand. To disconnect plug-in, locking device should he released sufficiently. Hold the plug-in instead of holding wire group directly for disconnection. It is prohibited to exert excessively force, which will lead to wire group rupture and component damage.

6. Fuel injector

Disassembly:

A: disassemble fuel inlet pipe.

B: disconnect wire group plug-in of fuel injector.

C: disassemble 2 bolts ① (M5) and remove 2 fixing pins.

D: screw out fuel injector ② slowly along axial direction.



Fuel injector inspection:

Switch digital multimeter to ohm; connect two probes to two pins of fuel injector; resistance is about 12Ω at 20℃.

⚠ WARNING

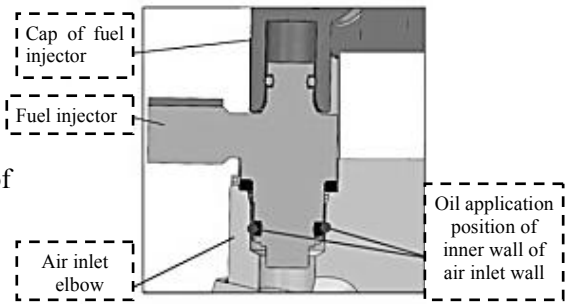
Since gasoline is combustible and explosive, it should be away from high temperature, spark and open flame.

Assembly:

Preparation before assembly:

A: after falling on the ground or colliding, a fuel injector should not be used, which might lead to damage of internal components or deteriorated performance of fuel injector.

B: O-ring and seal component should be free of scratch.



page down

page up **6. Fuel injector**



C: After disassembly and upon reassembly of a improperly installed fuel injector: O-ring must be replaced; a thin layer of paraffin base mineral oil should he applied to O-ring ③ and its cooperative wall hole, with oiling quantity subjecting to dripping free.

Specific assembly steps:

A: align fuel injector with corresponding position of air inlet elbow; screw it in installation hole slowly, with axial pressing force less than 500N as shown in ④.

B: after inserting screw in installation hole and fixing pin of fuel injector, screw it in installation hole of air inlet pipe,with tightening torque of screw ranging from 6 to 10N.m.

⚠ WARNING

Disassembled O-ring of fuel injector must be replaced with a new one to prevent fuel pressure leakage.

No oil should be applied to ⑤.

Be cautious when disassembling or assembling plug-in terminal of wire group of fuel injector to prevent its damage.

Fuel injector should be assembled or disassemble gently. Surface finish of assembly interface of air inlet elbow must be guaranteed.

Prevent corrosive liquid from polluting fuel injector, which will lead to short circuit of coil.

It is prohibited to use 12V voltage to energize fuel injector directly for above 1 minute, which will lead to fuel injector damage.

It is prohibited to energize fuel injector without fuel.

7. Throttle valve

Disassembly:

A: use 10mm open spanner to loosen locking nut ① of accelerator cable.

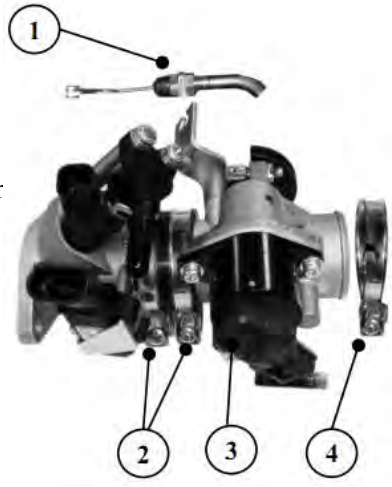
B: take lower end of accelerator cable out of throttle valve slot.

C: take interior wire of accelerator cable out of throttle valve slot.

D: use cross screw driver to remove connecting sleeve clamp ② of air inlet elbow.

E: disconnect wire group plug-in ③

F: disassemble air filter clamp ④



Assembly:

Install throttle valve based on reversed sequence of disassembly.

⚠ WARNING

After disassembling pulling wire of throttle valve, it is prohibited to loosen throttle valve from fully open to fully close status suddenly, which might damage throttle valve and its main body.

It is prohibited to disassemble throttle valve and its idling regulating bolt.

It is prohibited to apply cleaning agent of carburetor to main body components of throttle valve.

It is prohibited to use compressed air for access.

Since stop screw of throttle valve is adjusted upon delivery, its disassembly or rotation is prohibited.

8. Air inlet elbow

Disassembly:

A: use cross screw driver to remove connecting sleeve clamp ⑤ of air inlet elbow.

B: disconnect wire group plug-in ⑥

C: disassemble nut ⑦ and bolt ⑧, then remove air inlet elbow.



Assembly:

Install air inlet pipe based on reversed sequence of disassembly.

Tightening torque of nut ⑦ and bolt ⑧ ranges from 6 to 10N.m.

Ⅲ.Fault diagnosis and maintenance of EFI system

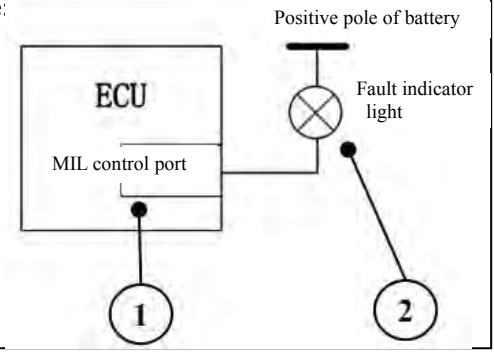
1.Output electric characteristics of fault indicator light

Fault indicator light is on dial of vehicle odometer.

ECU adopts low side control mode for fault indicator light ②, with wiring requirements shown in the figure:

Maximum drive current of MIL control port **①:1A**

Scope of drive voltage: 9-16V.



ii Identification of fault code

Normal system: when turn the key to open position, fault indicator light is on; after engine operation, fault indicator light is off.

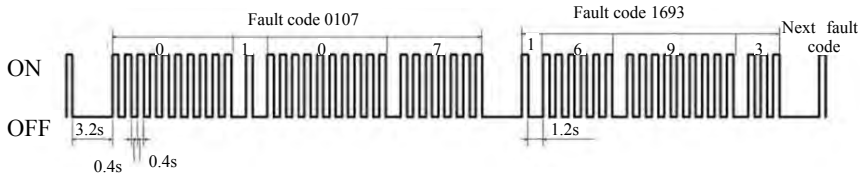
Faulted system: in case of fault, fault indicator light is on all the time upon engine operation; after engine flaming out, turn the key to open position; after waiting for corresponding time, fault light shows flash code till eliminating current fault and resetting current and historical fault codes manually.

Each type of fault mode consists of one group of flash pulse. Each group of fault flash has 1.2s of interval; different fault code has 3.2s of interval.

Flash 10 represents 0.

Instance: take two faults (P0107 and P1693) as instances.

Fault indicator light:



iii Fault code diagnosis list

Item Name	Flash Code and Diagnosis Display of Fault light	Fault Description
Pressure sensor of air inlet	P0107	Low voltage of pressure sensor
	P0108	High voltage of pressure sensor
	P0112	Low voltage of temperature sensor of air inlet
	P0113	Low voltage of temperature sensor of cylinder
Temperature sensor of cylinder wall	P0117	Low voltage of temperature sensor of cylinder
	P0118	High voltage of temperature sensor of cylinder
Position sensor of throttle valve	P0122	Low voltage of position sensor of throttle valve
	P0123	High voltage of position sensor of throttle valve
Oxygen sensor	P0131	Low voltage of oxygen sensor
	P0132	High voltage of oxygen sensor
	P0031	High voltage of oxygen sensor heating
	P0032	Low voltage of oxygen sensor heating
Fuel injector	P0201	Fuel injector fault
Fuel pump assembly	P0230	Low voltage of fuel pump
	P0232	High voltage of fuel pump
Position sensor of crank	P0336	Signal of crank sensor is interrupted
	P0337	Crank sensor has no signal
Ignition coil	P0351	Ignition coil faults

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Item Name	Flash Code and Diagnosis Display of Fault light	Fault Description
Idling control system	P0505	Idling control faults
System voltage	P0562	Low system voltage
	P0563	High system voltage
Fault light	P0650	Fault light faults
Speed-meter	P1693	Low voltage of speed-meter
	P1694	High voltage of speed-meter
Speed meter	P0500	Speed sensor has no signal

***Fault detection position might vary with battery voltage status.**

ⅳ Maintenance guidance

ⅳ .1. Special maintenance tools and instruments

1. Multimeter
2. Special fault diagnostic instrument
3. Fuel pressure gauge

ⅳ .2. General maintenance tools and instruments

1. Please use multimeter to inspect EFI system.
2. Please use quality components for maintenance for maintenance; otherwise, normal working of EFI system is unable to be guaranteed.
3. Please follow standardized maintenance diagnosis flow for maintenance work..
4. During maintenance, components of EFI system are prohibited to be disassembled and removes.

5. During maintenance, electronic components (electronic control unit, sensor, etc.) should be handled gently, preventing falling on the ground and suffering shock.

İV .3. Maintenance attention

1. When disconnecting and connecting plug-in, ignition switch must be at off status, preventing damage of electrical components.

2. With about 250KPa of fuel supply pressure, EFI system adopts high pressure resistant fuel pipe. Without engine operation, the fuel route also keeps high fuel pressure. As a result, do not disassemble fuel pipe randomly during maintenance. If maintenance of fuel system is necessary, the fuel system should undergo pressure releasing before disassembly of fuel pipe.

Pressure releasing method: remove fuel pump relay (or pull out plug of fuel pump), start and leave engine idling till it flames out. After completing maintenance, please supply fuel to fuel pipe of engine, with operation method shown as follows: switch ignition key from OFF to ON and wait for a while. Disassembly and replacing of fuel pipe should be conducted by professional maintenance people in area with favorable ventilation.

3. It is prohibited to operate fuel pump without fuel. which will lead to shortened service life and even burnout. Besides, it is prohibited to **connect positive and negative poles reversely.**

4. when taking a fuel pump out of a fuel tank, plug-in should be disconnected first and power supply of fuel pump should be prevented to avoid generating electric spark and causing fire.

5. When inspecting an ignition system, spark test of spark plug should be conducted only if it is necessary and it should last as short as possible. During testing, throttle valve should not be opened; otherwise, a large amount of unburned gasoline will enter exhaust pipe, damaging three-way catalytic converter **(to conduct spark test of spark plug, plug-in of fuel injector should be pulled out first).**

6. Since idling regulation is entirely completed by EFI system, manual regulation is unnecessary. **Since limit screw of throttle valve has been adjusted in manufacturer upon delivery, it is prohibited to change its initial position.**

7. Before conducting welding operation on the entire vehicle, positive and negative pole cables of battery and ECU (electronic control unit) must be

removed.

ⅳ.4. Parameters of maintenance components

Item	Contents	Specification Parameters
ECU	Storage temperature ℃	-40 ～105
	Working temperature ℃	-20 ～ 85
	Working voltage V（DC）	9～16
Temperature sensor of cylinder wall（R-T characteristics）	-10 ℃ KΩ	58.10 ～68.28
	0 ℃ KΩ	33.15 ～ 8.29
	20 ℃ KΩ	11.99 ～13.43
	40 ℃ KΩ	4.89 ～ 5.33
Temperature sensor of cylinder wall	Working temperature℃	-40 ～200
	Tightening torque N.m	12±2
Oxygen sensor	Working voltage V	12 ～14
	Heating rod resistance Ω(23 ℃)	8 ～15
	Tightening torque N.m	13 ～17
Fuel injector	Working temperature ℃	-30 ～130
	Working voltage V（DC）	14
	Working medium pressure KPa	<500
Idling stepping motor	Resistance Ω（5 ℃～27 ℃）	53±5.3

ⅳ.5. Excessive fuel gas removal function

Instruction: in case of excessive fuel gas, the following 〖Excessive fuel gas removal function〗 operations are able to be conducted.

1. When conducting maintenance operation, leave a vehicle to main supporting (neutral gear position) to prevent accident.
2. Open ignition lock and wait for completion of system self-inspection.
3. Keep accelerator fully opened and press electric start simultaneously to enter excessive fuel gas removal function for 5s till excessive fuel gas is removed.

Ⅴ. Fault diagnosis and troubleshooting

Ⅴ.1. Fault classification

1.

Fault of the following parts might lead to engine start failure

Speed sensor（trigger coil）	Fuel pump assembly	Fuel injector	Ignition coil (flyback transformer
			

2.
With fault of the following parts, engine is able to work at ECU preset value

Pressure sensor of air inlet	Position sensor of throttle valve	Temperature sensor of cylinder wall	Oxygen sensor
			

Ⅴ.2 Diagnosis and troubleshooting of fault without fault code

Instruction: incase of vehicle fault, please check flash of fault indicator light or read fault code via diagnostic instrument first. If there is no corresponding fault code, please conduct fault diagnosis based on the following table till fault is eliminated.

Fault Phenomenon		Cause	Inspection Method	Troubleshooting
Engine start failure or flames out easily after its	Fuel pump has no fuel outlet	Excessively less gasoline in fuel tank	Open ignition switch and check fuel level gauge (or confirm gasoline quantity in fuel tank)	Supplement fuel
		Plug of fuel pump has no voltage	Check fuse and power relay	Change

startup		Poor contact of plug of fuel pump	Check plug-in	Conform plug-in
	Fuel pump has fuel outlet and high voltage cable has spark	Excessively low voltage of battery leads to excessively low fuel pressure and discharge of ignition coil	Use multimeter to measure battery voltage	Charge of change a new battery
		Carbon deposition or incorrect clearance of spark plug	Remove spark plug to check carbon deposit and clearance	Remove carbon deposit or adjust clearance
		Fuel route leakage leads to excessively low fuel pressure	Check fuel pipe for leakage	Change fuel pipe or tighten clamp
Engine idling unstable		Excessively low fuel pressure of fuel route	Connect fuel pressure gauge between fuel pump and fuel injector	Check for abnormal fuel pressure
		Air leakage of idling stepping motor seat	Spray leakage test liquid during engine operation	Check and tighten stepping motor
		Leakage of valve and flange assembling	Spray leakage test liquid during engine operation	Check assembling of valve and flange
Engine idling excessively high		Stepping motor stuck	Check stepping motor seat for sundries or fault	Remove sundries or change stepping motor
Insufficient output power		Excessively low fuel pressure of fuel route	Connect pressure gauge between fuel pump and fuel injector	Check fuel pressure for abnormity

Ⅴ.3.Diagnosis and troubleshooting of fault code

Instruction: in case of system fault and fault light flashes, read fault code via fault light or diagnosis instrument and confirm fault

location based on " iii **Fault code diagnosis list".** Conduct diagnosis and troubleshooting based on follow-up operation

1. Generally, causes of fault are divided into four circumstances:

- Plug-in fails to be plugged properly
- Connecting wire is poor
- Plug-in is corroded with poor contact
- Components are poor
- ECU is poor

2. **Maintenance methods:**

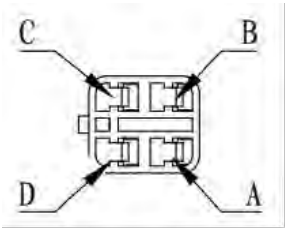
- Check wire and plug in
- Replace components with those from original manufacturer
- Check a component for fault
- Check system(ECU) reference voltage

Important note:

1. All judgments below are based on the fact functions of entire vehicle, engine, wire group and other system components are normal.

2. Prior to checking start, check sensor and wire group plug-in for looseness and poor connection before conducting the following operation and checking.

Ⅴ .3.1. Oxygen sensor fault

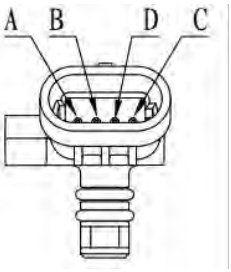


1. Check heating rod resistance of oxygen sensor:

- Close ignition switch;
- Pull out plug-in of oxygen sensor;
- Measure resistance between pin C and D of oxygen sensor

Check whether resistance conforms to standard (between 8Ω and 15Ωat 23℃)

Yes: heating rod resistance of sensor is normal; conduct operation 2.
No: change oxygen sensor.
2. Check heating voltage of oxygen sensor:
● Close ignition switch;
● Pull out plug-in of oxygen sensor;
● Open ignition switch; start and keep a vehicle idling.
● Waiting for 20s, use multimeter to measure voltage of corresponding pin at wire group side (i.e. corresponding to pin C and D of oxygen sensor);
Check whether voltage conforms to standard (12V to 16V)
Yes: ECU system controls heating normally; conduct operation 3.
No: check wire group.
3. Check output signal voltage of oxygen sensor:
● Close ignition switch and connect plug-in of oxygen sensor;
● Start and keep a vehicle idling (or by means of driving it), heating engine till temperature of cylinder head around 60℃;
● Switch multimeter to DC voltage; contact black and red probes with pin A and B of oxygen sensor separately;
● Check change of multimeter voltage:
Check whether output voltage changes between 0 and 1V.
Yes: output voltage of oxygen sensor is normal; conduct wire group checking.
No: replace sensor.
4. Change oxygen sensor:
A user must change oxygen sensor with the same model from original manufacturer.



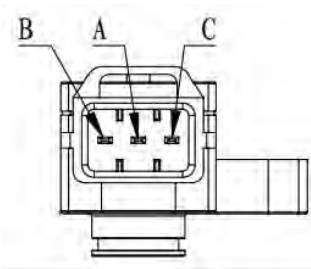
Ⅴ.3.2. Pressure sensor of air inlet

1. Check input voltage of pressure sensor of air inlet:
● Close ignition switch;
● Pull out plug-in of pressure sensor of air inlet;
● Open ignition switch (without starting an engine);
● Measure voltage between corresponding pins at wire group end

(i.e. corresponding to pin B and D of pressure sensor of air inlet)
Check whether input voltage conforms to standard (4.75V to 5.25V)
Yes: power supply of ECU system is normal; change sensor.
No: check wire group.
2. Change pressure sensor of air inlet:
● A user must change pressure sensor of air inlet with the same model from original manufacturer.
3. Check resistance of air inlet temperature:
● Close ignition switch;
● Pull out plug-in of pressure sensor of air inlet and use multimeter to measure resistance of two pins of a sensor;
Standard:

R-T Characteristics	
Temperature ℃	Resistance KΩ
-10	8.11～9.71
0	5.21～6.04
20	2.32～2.54
40	1.10～1.21

Check whether resistance falls within standard scope.
Yes: resistance of inlet temperature is normal; check wire group
No: change pressure sensor of air inlet.
4. Change sensor:
A user must change pressure sensor of air inlet with the same model from original manufacturer.



V .3.3. Position sensor of throttle valve

1. Check input voltage of position sensor of throttle valve:
● Close ignition switch;

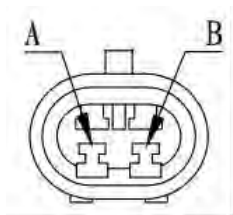
● Pull out plug-in of position sensor of throttle valve;
● Open ignition switch;
● Measure voltage between corresponding pins at wire group end (i.e. corresponding to pin A and C of pressure sensor of air inlet);
Check whether voltage conforms to standard (4.75V to 5.25V)
Yes: power supply of ECU system is normal; change position sensor of throttle valve.
No: check wire group.
2. Change position sensor of throttle valve:
A user must change position sensor of throttle valve with the same model from original manufacturer.
Attention:

WARNING **Position sensor of throttle valve must be changed by professional people.**

V .3.4. Temperature sensor of cylinder wall

1. Check resistance of temperature sensor of cylinder wall:
● Close ignition switch;
● Pull out plug-in of temperature sensor of cylinder wall; use multimeter to measure resistance of pin A and B;
Standards:

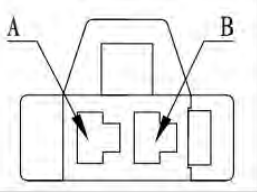
R-T Characteristics	
Temperature ℃	Resistance KΩ
-10	58.1~68.28
0	33.15～38.29
20	11.99～13.43
40	4.89～5.33



Check whether resistance falls within standard scope.
Yes: temperature sensor of cylinder wall is normal; check wire group.

No: change temperature sensor of cylinder wall.
3. Change temperature sensor of cylinder wall:
A user must change temperature sensor of cylinder wall with the same model from original manufacturer.

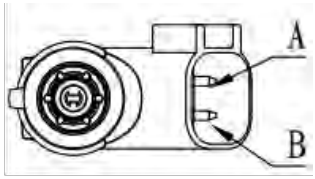
Ⅴ .3.5. Position sensor of crank



1. check resistance of position sensor of crank:
● Close ignition switch;
● Pull out plug-in of position sensor of crank; use multimeter to measure resistance of two pins.

Check whether resistance conforms to standard (100Ω~200Ω）
Yes: Position sensor of crank is normal; check wire group.
No: Change position sensor of crank

Ⅴ .3.6. Fuel injector



1. Check resistance of fuel injector coil
● Close ignition switch
● Pull out plug-in of fuel injector; use multimeter to measure resistance between pin A and B of fuel injector:
Check whether resistance conforms to standard（8.5Ω～15.5Ω）
Yes: Fuel injector is normal; check wire group.
No: Change fuel injector.

2. Change fuel injector:
● A user must change fuel injector with the same model from original manufacturer.

3. Attention:
● When installing fuel injector, silicone oil is suggested to be used for lubricating assembly junction surface of fuel injector seal ring and air inlet manifold.
● Prevent corrosive liquid from polluting fuel injector, which will

lead to short circuit of coil.

● After falling on the ground or colliding, a fuel injector is prohibited to be used, which might lead to damage of internal components or deteriorated performance of fuel injector.

● It is prohibited to use 12V voltage to energize fuel injector directly for above 1 minute, which will lead to fuel injector damage.

● It is prohibited to energize fuel injector without fuel.

⚠ WARNING

Fuel injector must be change by professional people.

Ⅴ .3.7. Fuel pump assembly

Before checking start, the following operations are able to be conducted only when Battery voltage is around 12V

1. Check fuel pump voltage:

● Close ignition switch;

● Pull out plug-in of fuel pump;

● Open ignition switch; use multimeter to measure voltage of corresponding pin at wire group end of fuel pump (measure is required to be completed within 3s after opening ignition switch—in this case, fuel pump relay is connected);

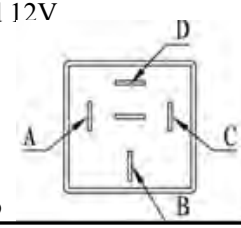


Diagram of pin of fuel pump relay

Check whether voltage conforms to standard (around 12V)

Yes: power supply of the system is normal; change fuel pump.

No: conduct operation 2.

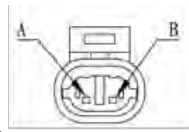
2. Check lines of fuel pump:

● Close ignition switch;

● Pull out ECU plug-in, open ignition switch and check whether corresponding pins of wire group are connected:

No.	Inspection Points	Standard	Judgment	
			Yes	No
a	Fuel pump relay A pin-ECU_J2-9 pin	Connected	Circuit is connected ;change an ECU with known good condition to check again	Open circuit of fuel pump relay
b	Fuel pump relay B pin-fuel pump A pin	Connected		Fuel pump power +12V open circuit
c	Negative pole of power-fuel pump B pin	Connected		Open circuit of fuel pump power grounding

- Close ignition switch and connect ECU plug-in;
- Open ignition switch and check for connection based on the following table(measure is required to be completed within 3s after opening ignition switch—in this case, fuel pump relay is connected).



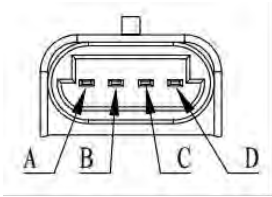
No.	Inspection Points	Standard	Judgment	
			Yes	No
d	Fuel pump relay B pin-positive pole of power	Measure voltage 12V	Fuel pump has rotation sound	Fuel pump relay+12V open circuit
e	Fuel pump A(+)B(-)and power voltage			Fuel pump power +12V open circuit; change fuel pump relay

3. Change fuel pump assembly:

- A user must change fuel pump assembly with the same model

from original manufacturer.
4. Attention:
● When leaving a vehicle out of service for a long time, it should be started regularly (15 to 20 minutes of idling operation are suggested to be conducted every other month)
● Fuel tank is suggested to be cleaned once every 10,000Km, preventing strainer blocking caused by excessive sundries in it .
It is prohibited to energize fuel pump without fuel.

Ⅴ.3.8. Idling stepping motor



1. Check resistance of coil of idling stepping motor
● Pull out plug-in of idling stepping motor; use multimeter to measure resistance of pin A&B as well as C&D of stepping motor:
Check whether resistance conform to standard(53 ± 5.3Ωfrom 5℃ to 27℃)
Yes: Idling stepping motor is normal; check wire group.
No: Change idling stepping motor.
2. Change idling stepping motor:
● A user must change idling stepping motor with the same model from original manufacturer.
● It is prohibited to pull or push it on shaft manually; otherwise actuator will be damaged permanently; motor shaft must be moved by driver.

3.Attention:
WARNING **Idling stepping motor is not allowed to be disassembled or assembled when its power is on.**

Ⅴ.3.9. Throttle valve

Since throttle valve has been set properly before its delivery, it is

prohibited to be adjusted and disassembled in any way.

1. Assembly attention:

● Assembly of throttle valve and engine should prevent sundries and water from entering throttle valve access.

● Plug-in should be inserted and pulled out carefully, preventing damage of wiring pin and reducing unnecessary inserting and pulling out.

2. Change throttle valve

A user must change throttle valve with identical specification.

3. Maintenance attention

● A user should remove sundries, grease and carbon deposition in throttle valve regularly based on actual utilization.

● It is prohibited to adjust idling regulating screws.

It is prohibited for a user to disassemble position sensor of throttle valve(to be removed by professional maintenance people).

vi. Regular maintenance schedule

Item Name		Regular Maintenance 1	Regular Maintenance 2	Regular Maintenance 3	Regular Maintenance 4	Regular Maintenance 5	……
Travelled mileage		5000km	10000km	15000km	20000 km	25000km	……
Major operation contents	Fuel system	Check fuel pipe; Change it, if necessary	Check fuel pipe& injector, change pipe or clean injector, if necessary	Check fuel pipe& injector, change pipe or clean injector, if necessary	Check fuel pipe& injector, change pipe or clean injector, if necessary	Check fuel pipe; Change it, if necessary	……
	Filtration system	Check air filter; clean it, if necessary. Check gasoline filter, change it ,if necessary. Every regular Maintenance					……
	Air inlet system	——	Check throttle valve; clean it, if necessary	——	Check throttle valve; clean it, if necessary	——	……
	Ignition system	——	Check spark plug; Change it, if necessary	——	Check spark plug; Change it , if necessary	——	……
	System diagnosis	Reading fault of diagnostic instrument					……

Note: 1. When driving it in area with excessive moisture or dust, maintenance should be conducted more frequently.

2. After driving it in rainy days, maintenance should be conducted more frequently.

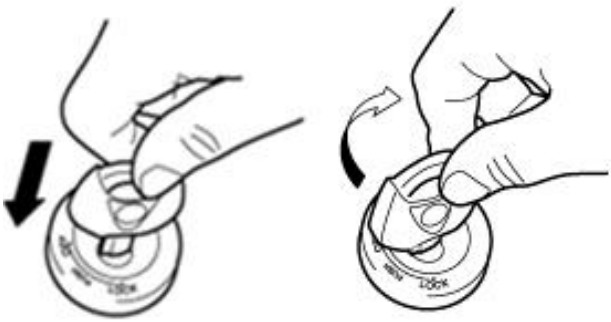
3. After driving it in the field, maintenance should he conducted more frequently.

ⅶ. Restore factory settings

Instruction:
in case of the following circumstance, operation of 〖Restore factory settings〗 should be conducted:

1. After changing stepping motor.
2. After changing fuel injector.
3. After changing or maintaining valve assembly.

Operation method:
Method Ⅰ: open/close ignition lock rapidly for 5 times (about 0.5s of interval) and keep closing ignition lock for above 15s to complete reset.



Method Ⅱ: use fault diagnostic instrument and conduct reset based on its operation instruction.

Chapter 5 Running-in of new motorcycle

The importance of correct new vehicle running-in was mentioned in Foreword. The correct running-in method is as follows.

Maximum speed

The maximum speed during running-in period is shown in the table.

First 800 km	<5000 rpm
At 1600 km	<7500 rpm
After 1600 km	<10000 rpm

Changes of engine speed

Do not drive at a constant engine speed for a long time. For a better running-in, properly increase and reduce the throttle opening. Change engine speed from time to time to let various engine parts get "bearing" pressure. When the pressure is "unloaded", the engine parts will cool down, helping the fitting of different parts. During running-in period, engine load may be properly increased. Apply some load to engine parts to guarantee good fitting. This is every important, but do not apply excessive load to the engine.

Avoid driving at a low speed

Running at a certain low engine speed (with light load) can only polish the parts but cannot get a good running-in. So long as the upper limit of recommended throttle opening is not exceeded, drive the vehicle in various gears with proper acceleration. However, never drive at the maximum acceleration during the first 1600 km.

Make oil circulating before driving

After starting of warm or cold engine and before applying load or driving, let the engine run at idle speed for an adequate time. This allows lubricant to flow to all import engine parts, so as to reduce wearing and increase the service life. This also helps the engine to warm-up sufficiently.

First maintenance inspection

The maintenance of the first 1000 km is the most important. During running-in period, all engine parts have been run-in and other parts engaged. Then, all parts shall be adjusted, all fasteners be tightened, contaminated engine oil be replaced and filter element be replaced.

Timely making 1000 km maintenance can guarantee a long engine life and the best engine performance.

Precaution：

1000 km maintenance shall be carried out according to the "Troubleshooting" in the manual. Pay special attention to the "precaution" and "warning" in the section.

Chapter 6 Inspection before Driving

Before driving, make sure to carefully check the following items. Never ignore the importance of the inspection.

Contents	Purpose
Steering handlebar	1、 Smooth 2、Free steering 3、No loose
Lighting	Operate all lamps -- head light, tail light, brake light, instrument board lighting lamp, turning signal lamps
Transmission oil	Proper oil level
Brake	1、 Adjust clearance of rear brake pedal and front brake grip 2、 No "spongy" feeling 3、 No leakage
Indicators	Neutral gear, gear position, oil level indicators (or turning signal indicators)
Accelerator	1、 Proper free play in accelerator wire 2、 Free fuel flow and reliable accelerator throttle valve returning to closed position
Tires	1、 Correct air pressure 2、 Proper tread pattern depth 3、 No injury or cut
Horn	Correct function
Clutch	1、 Proper free play in clutch wire 2、 Smooth operation and full releasing.
Fuel	Adequate fuel for the distance to drive.
Driving chain	1、 Proper tightness 2、 Proper lubrication

Chapter 7 Essentials of Driving

⚠ WARNING

If it is the first time for you to drive this type of motorcycle, you are advised to practice on a road away from highways, until you have completely been familiar with the control and operation of the vehicle.

Before driving, make sure that the side stand is returned to the uplift position.

Do not make gear shifting or deceleration in course of turning. Slow down to a safe speed before turning.

Do not shift into a low gear during turning.

It is dangerous to drive a motorcycle with a single hand. During driving, take a firm hold to the handlebar with both hands and put your feet on the foot board. In any event, never free your both hands from the handlebar.

On a wet road, the friction force is low and so is the brake force and turning capability. Therefore, decelerate in advance.

Observe the traffic laws and speed limit.

Engine starting

Make sure the fuel is enough and the engine shutdown switch in " ○ " position. Insert the ignition key in ignition switch and turn it to ON position. If the transmission is in neutral position, the neutral indicator lamp is lit.

⚠ WARNING

Make it a habit that, engage the neutral gear and firmly press

the clutch grip before starting the engine. This can prevent dash forward in case of mistaking gear engagement.

Press the electric starting button for ignition. Never rotate the accelerator grip when pressing the starting button.

Note：

After engine ignition, immediately release the starting button, to avoid adverse effects to the engine.

If the engine is not started after 5 seconds, wait for 10 seconds before making another attempt to prevent damaging the battery.

In case of failure in engine starting after two or three attempts, rotate the accelerator grip for 1/8 or 1/4 turns and try again.

A motorcycle not used for a long time and poor atomizing fuel may result in starting difficulty. In this case, do not rotate the accelerator grip, but repeat starting.

⚠ WARNING

Never start the engine in a room with poor or no ventilation. It is because carbon monoxide gas is poisonous. Never leave the motorcycle unattended with a running engine.

Precaution：

Do not allow the engine run for a long time without driving, or the engine may get overheat causing damage to internal parts or chrome plating of exhaust system.

Start driving the motorcycle

Precaution：

Start the engine with the transmission in neutral position, the clutch engaged and driver riding in normal driving position.

Firmly press the clutch grip, wait a little moment, press down the gear lever to engage the first gear, rotate the accelerator grip slowly to you and smoothly and slowly release the clutch grip. When the clutch is engaged, the motorcycle will move forward.

To change into a higher speed gear, firstly decelerate a little, release the accelerator and, at the same time, press the clutch grip, shift the gear lever to the next higher speed gear position and release the clutch grip, slightly rotate the accelerator. In this way, the highest gear can be engaged gradually.

Note：

For high speed driving, always avoid releasing the accelerator suddenly. it is advised to wait a moment when the engine is running at 3000-5000rpm before fully releasing the accelerator. This can prevent the engine from shutdown due to abnormal combustion.

Use of transformation device

Transformation device is able to allow the engine running smoothly within normal range of operation. The transmission gear ratio is carefully selected for the engine performance. Driver shall select gears suitable to general conditions but shall not use the clutch for the purpose of speed control. To decelerate, shift to a low gear to allow the engine running in a normal speed range.

Precaution：

① The engine speed shall not be in the red range of the tachometer in any gear.

Driving on a slope

② To shift from a high gear to a low gear, control the speed in a safe speed range before gear shifting. Otherwise, abrupt deceleration (sudden rise of engine speed) may happen, causing gear impacts, sever parts wearing, or overbalance of the vehicle. It is dangerous.

Slope climbing:

● When going up a steep slope, the motorcycle may decelerate due to insufficient power. Then, immediately shift to a low gear to allow the engine running a normal power range. Pay attention that, gear shifting shall be made quickly to keep adequate forward momentum of the motorcycle.

● When going down a slope, use the engine for braking, by shifting into a lower gear.

● Be sure to keep in mind that, never drive too fast down a slope! Never allow the engine to run a very high speed for a long time.

Use of brake and parking method

Rotate the accelerator grip outward to fully close the throttle.

At the same time, apply the front and rear brakes with even forces.

Use gear shifting to slow down.

Before the motorcycle is stopped, firmly press the clutch grip, shift into neutral gear and observe the neutral indicator to make sure the neutral gear is engaged.

⚠ WARNING

The faster the vehicle is driven, the longer the braking distance will be. Be sure to make correct estimation of the distance between

you and the vehicle or object in front of you for adequate braking performance.

An inexperienced driver always uses the rear brake only. This will cause premature wearing and too long a braking distance.

It is dangerous to use front brake only. This may cause slipping and out of control. On wet highway or other dull road surface and during turning, be extremely careful to apply the brake gently. Hard braking on rough or dull road surface is very dangerous.

The motorcycle shall be parked on stable and flat ground.

To park your motorcycle on a gentle slope by using the side stand, engage the first gear to prevent sliding off the side stand. Remember to shift to neutral gear before starting the engine.

Turn the ignition switch to OFF position to shutdown the engine.

Remove the key from ignition switch.

Lock the steering bar for safety.

Chapter 8 Inspection and Maintenance

The following table shows the interval of regular maintenance in travel distance or number of months. At the end of an interval, be sure to carry out the specified inspection, lubrication and maintenance. If your motorcycle is used with heavy loads, such as high power driving in a dusty environment, the maintenance shall be carried out more frequently. Your distributor can give your further guide. The parts of steering gear, shock absorber, bearings and wheels are critical components, and require professional skills to repair. In the light of safety, it is advisable to the inspection and maintenance done by your distributor or qualified maintenance staff.

Precaution：

In regular maintenance, it may be necessary to replace one or more parts. For part replacement, it is advisable to use genuine parts or equivalent products. No matter if you are experienced in vehicle maintenance or not, the items with * mark shall be handled by your distributor or qualified maintenance staff. For the items without such mark, you can do it by yourself according to the instructions.

⚠ WARNING

After correct running-in of 1000 km, maintenance is mandatory to ensure the safety of your motorcycle and give it a full play of its performance.

Be sure to make regular maintenance thoroughly according to the instructions in the manual.

List of Regular Maintenance

Interval: based on odometer reading or number of months	**km**	**1000**	**4000**	**8000**
	Number of months	**5**	**20**	**40**
*Battery (specific gravity of electrolyte)		I	I	I
Spark plug		I	C	R
Clutch		I	I	I
*Valve clearance		I	I	I
Air filter		-	C	C
*Fuel hose		I	I	I
		Replace every 4 years		
Engine oil and oil filter		R	R	R
Oil filter screen		C	C	C
*Chassis bolt and nut		T	T	T
Transmission oil		R	R	R
*Brake		I	I	I
Front fork		-	I	I
Tyres		I	I	I
Driving chain		I	I	I
		Clean and lubricate every 1000 km		
*Steering gear		I	I	I
*Rear shock absorber		-	I	I
*Cylinder head nut and exhaust pipe bolt		T	T	T

Note: Inspection: I, Tightening: T, Cleaning: C, Replace: R

Lubrication Table

Interval / Item	Every 6000 km or 6 months	Every 12000 km or 12 months
Accelerator wire	Engine oil	-
Clutch wire	Engine oil	-
Speedometer wire	-	Grease
Driving chain	Lubricate every 1000 km	
*Brake cam shaft	-	Grease
Accelerator grip	-	Grease
Brake wire	Engine oil	-
Speedometer gear case and wheel bearing	-	Grease
Brake pedal	Grease or engine oil	-
*Steering gear	Lubricate every two years or every 20000 km	

Special note:

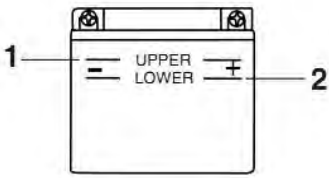
To secure your ride please conduct termly check and tightening of spoke according to the following sheet at local distributor or professional maintenance shop.

item	mileage（Km）					
	500	1500	3000	5000	8000	Every 3000 hereafter
check	√	√	√	√	√	√
tighten/change	√	√	√	√	√	√
Note: If spoke cap or spoke is worn, it must be changed immediately.						

Battery

Battery is normally stored inside the guard board on the right side of the frame. The battery for the model may be of conventional type or maintenance-free type or lithium type.

Direction for use of conventional type battery:



1. Maximum level mark
2. Minimum level mark

Before using, fill electrolyte to a level between the upper and lower limits. During using, the fluid level must be kept between the upper limit and lower limit.

⚠ WARNING

Once the battery has been in use, no diluted sulfuric acid shall be added. If the fluid level drops below the lower limit, fill distilled water to the upper limit. Never use tap water.

Precaution:

Never damage, clog or alter the vent pipe for battery. Please make sure that the vent hose is connected to the vent fitting of battery, with the other end kept always open. The vent pipe and battery shall be installed correctly.

The polarity of battery wiring shall be always correct. Connect the red wire to positive (+) and the green wire to negative (-). Wrong connection may damage the charging system and battery.

Note:

After the first 1000 km and every 3000 km, have the specific gravity of each battery cell checked by your distributor, by using an electrolyte hydrometer.

1. Safety

① Electrolyte contains strong acid and shall be prevented from contacting the skin.

During operation, wear safety helmet and safety clothing.

② In case that electrolyte gets in eyes, immediately wash the eyes with plenty of clear water for at least 15 minutes, before going to hospital.

③ In case that electrolyte is drunk, drink a large amount of water or milk, and then milk or vegetable oil containing magnesia.

④ Keep away from reach by children.

2. Electrolyte filling

Before filling electrolyte, remove battery from the vehicle.

Check if the electrolyte conforms to specification requirements.

Direction for use of lithium or maintenance-free battery:



No electrolyte filling is necessary before and after battery using. To prolong the service life, fully recharge it before using.

Note：

No matter what type it is, the battery may discharges and power may drop after a long store time. After removing from the vehicle and fully recharge, store it in a cool and well ventilated place.

When the vehicle is not used for a long time, remove the negative (-) wire from battery.

Spark plug

After the first 1000 km and every 3000 km thereafter, clean off any carbon deposit from spark plug by using a small steel wire brush or a spark plug cleaner. Readjust the spark plug gap with a thickness feeler to keep it between 0.6 - 0.7 mm. Replace spark plug every 6000 km.

When cleaning off carbon deposit, observe the color of the ceramic tip of spark plug. The color can tell you if standard spark plug suit your usage. If a standard spark plug shows wet or very dark, it may be better to use a spark plug with lower caloric value. A normal working spark plug shall be light gray or cotton yellow. If a spark plug is very white or even glowing, it means the spark plug was working in overheated conditions. Replace it with a spark plug of higher caloric value.

Precaution:

Spark plug shall not be over tightened to prevent the threads of cylinder head from being damaged. When spark plug is removed, prevent any impurities from getting into the engine through spark plug hole.

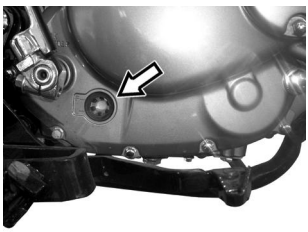
Standard spark plug for the motorcycle is carefully selected and suitable for most operations. If the color of spark plug is found different from standard spark plug, it is advisable to contact your distributor before

replacing with spark plug in a different heat resisting range. An improper spark plug may cause serious damage to the engine. A spark plug of other brand may result in operational difficulties. Therefore, consult with your distributor before selecting other brand spark plug.

Engine oil

A long service life of the engine depends on using high quality engine oil and regular oil replacement. Oil level check and regular oil replacement are very important tasks.

Check engine oil level



Precaution：

Engine oil window shows the oil level. When oil level is low, never start the engine. Fill oil until the oil level is just below the upper limit of oil window.

Replacement of engine oil and oil filter

Replace engine oil and oil strainer after the first 1000 km and every 3000 km thereafter. Oil replacement shall be carried out when the engine is still warm, so as to thoroughly drain old oil from the engine. The method is as follows:

1. Park the motorcycle by using the central stand.
2. Remove oil filler cap.





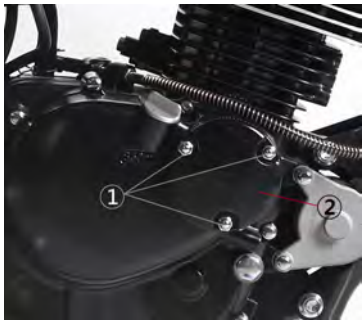
3. Remove drain plug from strainer cover on the engine bottom to drain oil.

Note：Be careful not to remove the neutral gear positioning screwed plug to avoid dropping of neutral gear cam pin and spring, resulting in difficult gear shifting.

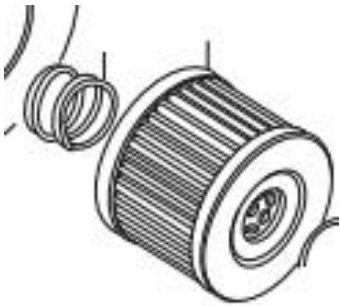


4、Remove three screws from filter element cover.

① Cap nut
② Filter element cover



5、Remove filter element cover, pull out oil filter element and replace it with a new one.



Precaution：

Insert the opening part of oil filter element in the engine and check if the element is installed firmly.

6、Before reinstalling the filter element cover, check for any mistake in installation of the spring and gasket of oil filter element.

Precaution：

The gasket shall be replaced with a new one each time when the

element is replaced.

7、Install the filter element cover and screw on the nut. Do not fasten the nut excessively tight.

8、Tighten the oil drain ring and fill fresh engine oil about right amount into the oil filler, before gently tightening the top cover.

9、Start the engine and allow it running idle speed for several seconds.

Precaution:

Carefully check for any oil leakage around the filter element cover.

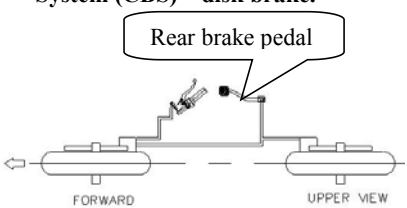
10、Shutdown the engine and wait for a minute before checking the oil level from engine oil window. The oil shall be kept on "F" (full) line. If the oil level is below "F" line, replenish until it reaches the "F".

Precaution:

Please use the engine oil recommended in "Instructions on fuel and engine oil".

Brake

There are Combination Braking System (CBS) disk brake.



The Combination Braking System(CBS) means that when you step the Rear brake pedal, rear brake and front brake will work at the same time. This set let the rider who be used only rear brake more safety. Of course, in case of an emergency case ,you must be used rear and f ront brake both together , so that ensures enough braking force .

Check the brake after first 1000 km and every 3000 km thereafter.

Correct braking operation is very important to safe driving. Be sure to carry out regular inspection of brake system by qualified distributor.

⚠ WARNING

Brake is related to personal safely and shall be kept in good order.

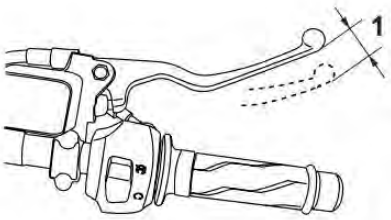
If the brake system needs repair, you are strongly recommended to have the job done by your distributor. They are equipped with complete tools

and proficient techniques and capable to do it in a safe and economical way.

Front brake

For the brake, the distance from natural status to braking action is known as "free play".

The front brake is a disk brake, the free play of brake lever measured at lever bracket shall be 2-5.0mm (0.08-0.10in).



1. Brake lever free play

Hydraulic brake system shall be checked everyday, as follows:

1、Check for leakage in the front wheel brake system.

2、Check for any leakage or crack in oil pressure pipe.

3、The front brake lever shall have a certain back spring force.

4、Check wearing conditions of front wheel brake lining.



Precaution：

Wheel disk brake system is a high pressure brake. For safety, the replacement of oil pipe and hydraulic oil shall not exceed the interval specified in the maintenance schedule in the manual.

Brake fluid

⚠ WARNING

It is harmful if brake fluid is drunk by mistake or contacts the eyes or skin. If it is drunk by mistake, spit it out by force. If it contacts skin or eyes, wash with plenty of clear water and go to hospital.

Precaution：

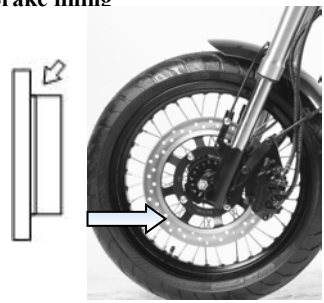
The vehicle uses ethanol series hydraulic oil. It shall not be mixed with silicate or petroleum fluid. Otherwise, the brake system may be

seriously damaged. Never use unpacked fluid or any fluid left over in the last maintenance, because moisture may get into the old fluid. Only SAE J1703 brake fluid shall be used. Pay attention not to splash hydraulic oil to paint or plastic surface, to prevent corrosion.

Check the fluid level in the brake fluid tank. Replenish with specified hydraulic fluid if the level is low. Along with wearing of brake lining, fluid in the tank may flow to the pipe and the level may become low. Brake fluid replenishment shall be considered as an import item in regular maintenance.



Brake lining

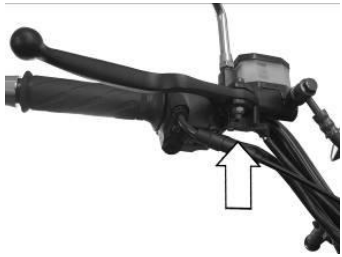


The essential of checking the front wheel brake lining is to see if the lining is worn to the limit mark. If wearing exceeds the mark, the brake lining shall be replaced with a new one.

! WARNING

Do not drive immediately after replacing a new wheel disk brake lining. Press the braking grip for several times to allow the brake lining fully extended, the grip spring force restored, and the brake fluid is circulated smoothly.

Front brake light switch



The switch of front brake light is located below the brake grip. Loosen the screw and move the switch position back and forth to find a proper point so that the lamp is lit immediately

when pressure is applied but before the grip is fully pressed.

Rear brake

Adjustment of rear-wheel brake

The rear brake is disk brake, refer to the paragraphs for front brake disk brake for maintenance.

The brake pedal free play should measure 3.5-6 mm (0.14-0.24 in) as shown. Periodically check the brake pedal free play and, if necessary, have a dealer adjust it.



① Free play

WARNING

An incorrect brake pedal free play indicates a hazardous condition in the brake system. Do not operate the motorcycle until the brake system has been checked or repaired by a dealer.

Silencer



WARNING

Please keep away from the motorcycle silencer after a long time driving, to avoid being burnt.

Fuse



The fuse box is located inside the guard board on the right side of the chassis. A fuse is provided for all the electrical system. In case of any trouble to electrical system, check the fuse first. If the fuse is blown out, replace it with the spare fuse (15A) in the fuse box.

Precaution：

Always replace the blown fuse with

a new one of the specified amperage. Never use aluminum foil, steel wire or other things as substitute for fuse. If a new fuse is blown in a short time, it means there is a major electric trouble. Contact your distributor immediately.

Replacement of bulb

The rating of bulbs can be found in Chapter 13 Parameter List. Always replace a bulb with a new one of the same rating. Otherwise, overload to electric system and premature bulb damage may be caused.

Precaution：

The head light is generally reflection lamp. Do not touch the reflector during bulb replacement, so as to prevent reduction of service life.

For turning signal light, tail light and brake light, when installing light shield, do not excessively tighten the fixing screws to avoid damaging the light shield.

Air filter

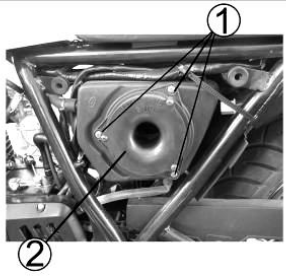
If the air filter element is clogged by dust, the output power may reduce and the intake resistance may increase; The fuel consumption will also increase. Therefore, the air filter element shall be checked and cleaned every 3000 km, as follows.

Precaution：

If the motorcycle is working in dusty conditions, the air filter shall be checked and cleaned more frequently before schedule.

1、Remove the left side guard board.

2、Unscrew the air filter outer cover screw (1) and take out the air filter sleeve (2).



3、Take out the air filter foamed plastic sleeve shell.

4、Separate the foamed plastic from the outer frame.

Precaution：

● During cleaning the filter

element, check for any damage to the filter element and replace when necessary.

- Never start the engine without the filter element installed, or the engine wearing may be increased.

Clean the foam type filter as follows:

1、Fill a pan of proper size with incombustible cleaning solution. Immerge the filter element in the cleaning solution and wash it.

2、Press the filter element with both palms to squeeze out cleaning solution. Never twist the filter element to avoid damaging.

3、Soak the filter element in engine oil tank and squeeze oil out, keeping it slightly wet.

Precaution：

Before and during cleaning, attention should be paid to check the filter element for any crack. Replace it if any crack is found.

4、Reinstall the filter in reverse order. Make sure the filter element is firmly fixed in correct position and reliably sealed.

Cleaning of paper filter element

Cleaning method is as follows:

1、Remove the left side guard board.

2、Remove the tensioning band screw of air filter connector. Pull out the intake pipe and separate it from the filter.

3、Take out the filter element

4、Pat the filter element while rotating it, to remove dust, and blow off remaining dust by using compressed air.

5、The filter element is made of paper and cannot be cleaned by using any oil-based agent.

Precaution：

Before and during cleaning, pay attention to check the filter element for any contamination, crack or damage. Replace it with a new one when necessary.

Reinstall the filter in reverse

order. Make sure the filter element is firmly fixed in correct position and reliably sealed.

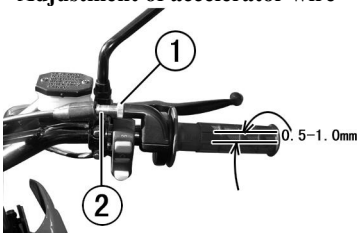
Precaution:

Never start the engine without the air filter installed. The air filter element must be cleaned or replaced more frequently if the motorcycle is used in dusty conditions. Never start the engine without the filter element installed, or the engine wearing may be increased. Be sure to the air filter element is in good working conditions, because this part is very important to engine service life.

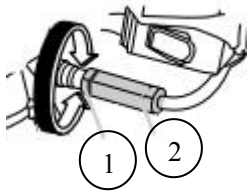
Precaution:

Idle speed adjustment shall be carried out while the engine is fully warmed up.

Adjustment of accelerator wire



① **Locking nut** ②**Adjuster**



1、 Loosen the locking nut.

2、 Rotate the adjuster to make the wire clearance between 0.5 - 1.0 mm.

3、 After clearance adjustment, tighten the locking nut once again.

Precaution:

After accelerator wire adjustment, check the operation of accelerator grip. Engine idle speed shall not increase due to the adjustment, and the grip shall return to the closed position automatically.

Adjustment of valve clearance

The valve clearance shall be checked and adjusted under the cooling condition of engines.

1. Remove the fan guard and cylinder head cover.

2. Turn the magnetor rotor anticlockwise to align the marker T of the rotor with the vertical line projected on the right case cover. Make sure that the piston is on the

top of the compression stroke.

3. Insert a clearance gauge between the adjusting screw and valve stem to ensure a proper clearance of the exhaust valve.

4. Standard valve clearance

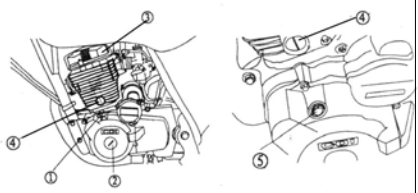
Intake valve clearance:

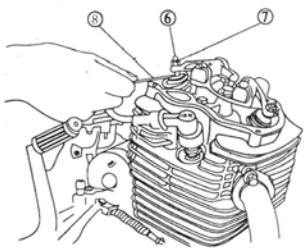
0.04-0.05mm

Exhaust valve clearance:

0.05-0.06mm

5. To obtain a proper valve clearance, loose the adjusting nut and then turn the mating screw. Turn the adjusting nut on the completion of adjustment and measure the clearance until it meets the criteria.





Note:

As the valve clearance imposes a marked impact on the engine performance, inspection and adjustment shall be severely observed at a regular time interval specified in the Scheduled Maintenance Scheme.

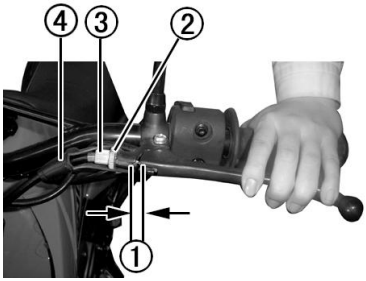
The valve clearance increases with the passage of time and thus affects engine performances by producing loud noise and abnormal suction/exhaust processes. Therefore periodic adjustment, preferably done by professionals with special tools, of valve clearance is essential. To obtain an optimal valve clearance, the adjustment is recommended to be finished by the motorcycle distributors or the maintenance center.

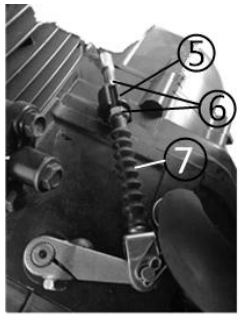
Valve clearance adjustment is essential for new motorcycles on the completion of their first 1000 km.

Adjustment of clutch

Clutch adjustment is made through adjusting the tension of wire rope for clutch grip. Before feeling the gear disengagement by pressing the clutch grip, the wire clearance

measured at clutch grip shall be 4 mm. If the clutch wire clearance is found incorrect, carry out adjustment as follows.





Loosen nut (2) and rotate the grip tensioning ring (3) clockwise to the stop. Loosen the wire rope adjusting ring lock nut (6), and rotate the wire tensioning ring (5) back and forth, until the grip clearance is about 4 mm. Grip tensioning ring (3) can be used for fine tuning. After the adjustment is completed, tighten locking nut (2) and (6), and cover them with rubber sleeve (4).

Adjustment of driving chain



①Adjusting bolt ②Locking nut ③Mark ④Rear wheel shaft nut

To adjust:

1、 Park the motorcycle with central stand.

2、 Loosen rear wheel shaft nut.

3、 Loosen the locking nut.

4、 Rotate the adjusting bolt left and right to adjust the chain.

Note：

When a new chain is installed, it is necessary to check both chain wheels. Replace if necessary.

The tension of driving chain shall be adjusted every 1000 km, to keep a removable distance of 20 - 30 mm in the midpoint of the two chain wheels.

Precaution:

The open end of driving chain connection clip shall point away from the direction of rotation.



Cleaning and lubrication of driving chain

Dirt on driving chain may intensify the wearing of driving chain and chain wheels. Therefore, clean the driving chain every 1000 km with cleaning solvent, and lubricate it with special chain lubricant or engine oil.

Tires

Check the tire air pressure and tread pattern after first 1000 km and every 3000 km thereafter. Besides regular check, make it habit to check the tire air pressure from time to time, to ensure maximal safety and long life.

Tire pressure

A low tire pressure may intensify tire wearing and badly affect the driving stability, causing difficulties in turning. But, a too high tire pressure may reduce the contact area between tires and road surface, causing wheel-slip and even out of control. It is necessary to always keep the tire pressure within specified limit. Tire pressure adjustment shall be made when the tire is cold.

Tread pattern

When driving a motorcycle with over-worn tires, the driving stability is low and it may get out of control. When the depth of front wheel tread pattern is reduced to 1.6 mm or less, it is advisable to replace the cover tire. When the tread pattern of rear wheel is reduced to 2 mm or less, replace the tire with a new one.

WARNING:

Problems may happen if no standard tire is used. You are sincerely recommended to use standard tire.

Correct tire inflation pressure is very important for normal vehicle performance and driving safety. Check the tire wear and inflation pressure from time to time.

Chapter 9 Measures to Reduce Pollution

To reduce exhaust emission and noise pollution, please follow the several points below:

Use special purpose lubricant

Use unleaded gasoline

Observe any abnormal engine noise

Chapter 10
Troubleshooting

If the engine cannot be started, check the following items to locate the cause.

1、If there is fuel in fuel tank.

2、If fuel pump has no fuel outlet.

3、 If it is confirmed that fuel pump has fuel outlet, take the next step to check the ignition system**.**

⚠ WARNING

Never allow fuel to flow everywhere. Collect it in a vessel. Keep fuel away from hot engine and exhaust pipe. During the operation, keep away from any flame or heat source.

Smoking is strictly prohibited during fuel system checking. Carry out the work in a spacious place.



1、 Remove spark plug and connect it with the high voltage cable.

2、 Pull out plug-in of fuel pump

3、 Turn the ignition switch to ON position and the engine shutdown switch to "○ " position. Place the spark plug near the engine, and start the engine. If the ignition system is in working order, there shall be blue sparks jumping over the spark plug gap; If there is no spark, contact your distributor for repair.

⚠ WARNING

Do not make the above check with the spark plug fixed near fuel injector to avoid fire hazard by igniting the vaporizing fuel in cylinder.

To avoid electric shock, it is advisable to put the metal part of spark-plug in contact to a metal part without paint on the vehicle body. To avoid disaster by electric shock, any person suffering from heart diseases shall not do the check.

Engine shutdown

1、 Check the fuel volume in fuel tank.

2、 Check sparks of ignition system.

3、 Check no-load operation of the engine.

Note：

Before any troubleshooting, it is advisable to consult with your distributor in advance. If the motorcycle is still in warranty period, be sure to contact your distributor before making any attempt to repair by yourself. Tampering with the vehicle in warranty period may invalidate the basis of warranty.

Table of Engine Troubleshooting

Trouble		Cause	Remedy
Engine start failure or flames out easily after its startup		**See from ⅴ.2 Diagnosis and troubleshooting of fault without fault code of Section 3: Electronic Fuel Injection System, Chapter4**	
Abnormal engine operation	Abnormal noise from engine	1、Serious worn out cylinder and piston 2、Serious worn out needle bearings in small and big ends of connecting rod 3、Premature ignition 4、Excessive carbon deposit in combustion chamber 5、Overheated spark plug	1、Replace cylinder body and piston 2、Replace bearing and relate parts 3、Adjust ignition time 4、Clean out carbon deposit 5、Replace spark plug
	Unstable engine operation	1、Water or dirt in carburetor 2、Clogged fuel passage 3、Leaking crankcase 4、Leaking connection between carburetor and engine **5、**Over-rich or over-thin gas mixture	**1、Clean the carburetor** **2、Clean or replace fuel pipe** **3、Replace sealing** **4、Tighten screw** **5、Adjust carburetor**
	Overheat engine	**1、Low gear driving over a long time** **2、Over loaded driving or long time driving with heavy load** **3、Over-rich or over-thin gas mixture** **4、Unqualified engine oil or insufficient transmission oil** **5、Slipping clutch** **6、Too tight chain** **7. Unreleased brake**	1、Change gear position and control time 2、Control load-carrying and rest from time to time for cooling 3、Adjust carburetor 4、Replace with qualified engine oil and fill oil to transmission case 5、Adjust free play or replace clutch, friction lining and spring 6、Adjust tension 7.Adjust brake clearance

Chapter 11 Storage Method

If the motorcycle is not used for a long time in winter or other seasons, it is necessary to carry out special maintenance with appropriate materials, equipment and techniques.

Motorcycle

When a motorcycle is not used for a long time, make preparation before storage: Wash the motorcycle, park it with the central stand on a solid and flat ground and prevent it from rolling. Turn the handlebar of motorcycle to the left side and lock it. Remove the ignition key. For safety, select a place suitable for long time storage. To re-use the vehicle, carry out a complete inspection to ensure normal performance of all parts of the motorcycle.

Fuel

Before storing the motorcycle, empty the fuel tank. Gasoline used in motorcycle is highly inflammable and even explosive under certain conditions. Therefore, never allow the motorcycle to get close to any fire. Never park the vehicle in a place storing articles subject to spontaneous combustion (such as grains, coal, cotton, etc.), because fire hazard may happen when the fuel in the vehicle contacts naked flame**.**

Tires

Make tire inflation to normal pressure value. Keep the outside of tire clean. Avoid exposing to sunshine or moisture for a long time. Avoid contacting acid, alkali and oil to prevent tire corrosion.

Battery

When the vehicle is not used for a long time, remove the battery and fully recharge it before storing it in a place out of reach of children. Then, recharge it every month in summer and every two

months in winter. If the battery is installed on the vehicle for a long time, recharge it every month.

Steps during storage

For conventional battery, check electrolyte level every month. If the fluid level is low, timely replenish it with distilled water or pure water to the highest level mark. (Never use electrolyte or tap water)

Battery shall be kept clean. Corrosion may happen if electrolyte is splashed to the vehicle body, terminal or wires. In case of corrosion, wash immediately with clear water and apply a coat of grease after drying off.

Insufficient power may cause difficulty in engine starting, weak horn sounding and no flashing turning signal light. Then, immediately recharge the battery for 15-20 hours. Note that, storing a low battery for a long time may cause battery damage.

When a battery has whitened plate electrodes, low power or low fluid level below the lower limit, and cannot restore the performance after a long time storage even after recharging, it means the service life has been terminated.

Steps of returning service

1、Clean the entire motorcycle.

2、Remove spark plug before reinstalling spark plug.

3、Reinstall battery.

Note：

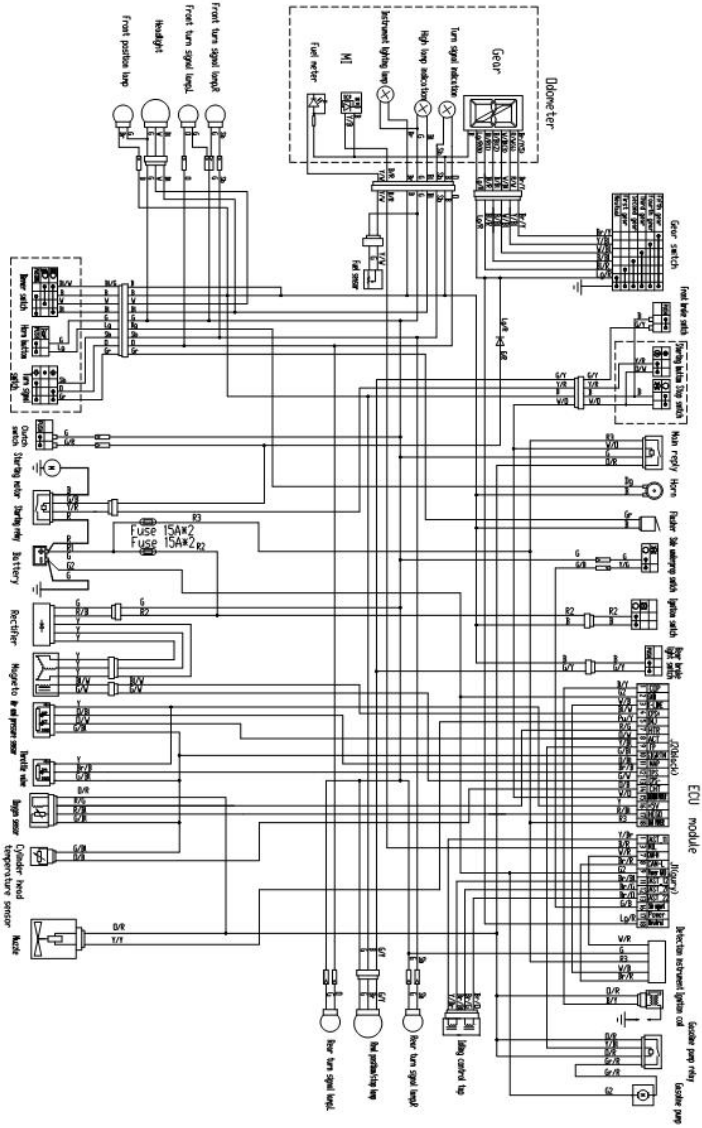
Make sure to connect the positive connector before the negative one.

4、Adjust tire pressure according to the tire part of the the manual.

5、Lubricate all parts that require lubrication according to the manual.

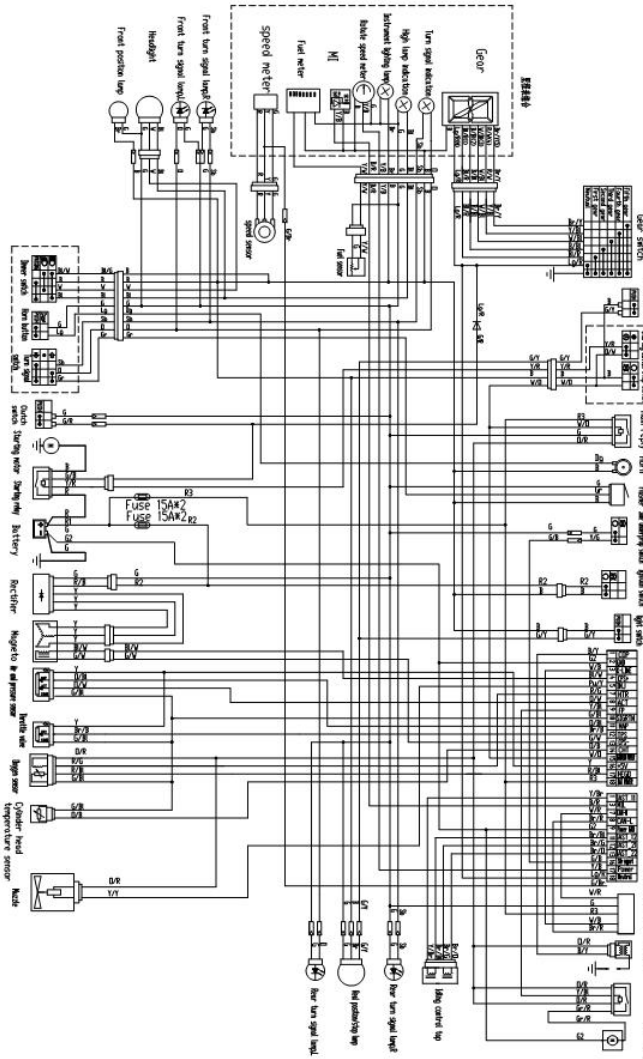
6、"Check before driving" as instructed in the manual.

Chapter 12 Circuit Diagram



XF125R-B

XF125R-B(C)


Front position lamp
Headlight
Front turn signal lamp(R)
Front turn signal lamp(L)
speed meter
Fuel meter
MI
Brake signal switch
Instrument lighting lamp
High beam indicator
Turn signal indicator
Gear
Gear switch
Front brake switch
Clutch switch
Starter motor
Starter relay
Battery
Rectifier
Magneto
Throttle valve
Oxygen sensor
Cylinder head temperature sensor
Nozzle
Fuse 15A*2
Fuse 15A*2
Horn
Flasher
Ignition switch
Rear brake light switch
ECU module
Injection actuator/ignition coil
Gasoline pump relay
Gasoline pump
Rear turn signal lamp(L)
Rear turn signal lamp(R)
Relay control box

Chapter 13 Parameter List

Model	Bluroc Hunt S	Bluroc Spirit
Dimensional parameters		
Overall dimension (L ×W ×H) mm	1940×835×1080	1900×735×980
Wheelbase mm	1340	1310
Minimum ground clearance mm	175	145
Turning clearance circle diameter mm	5100	5200
Castor angle（°）	29	
Steering handlebar turning angle (°) (left / right)	42	
Mass/volume		
Overall mass kg	118±5	116
Max. loading mass kg	80	
Fuel tank capacity L	14	
Engine		
Model	K157FMI	
Type	Single cylinder, 4-stroke, air cooling	
Cylinder bore×stroke mm	57.0×48.80	
Total displacement ml	125	
Compression ratio	9.3：1	
Max. power and corresponding speed kW/(r/min)	8.0/9500	
Max. torque and corresponding speed N. m/ (r/min)	9.0Nm /8000r/min	
Min. fuel consumption g/kW·h	367	
Min. stable idle speed r/min	1450±100	
Ignition mode	ECU	
Starting mode	Electric	
Lubrication mode	Pressure and splashing	
Lubricant	SAE 10W/30	
Fuel	#93 or higher unleaded gasoline	
Air filter type	Polyurethane foam filter element	
Gas distribution mode	Overhead cam valve	
Transmission device		
Clutch type	Wet type normal pressure multi disc	
Transmission type	Foot operated 5-gear transmission	
Primary reduction ratio	3.471	
Final stage reduction ratio	2.800	
Transmission ratio 1st gear	3.000	
2nd gear	1.857	
3rd gear	1.368	
4th gear	1.095	
5th gear	0.913	
Vehicle type		
Wheel rim type	Spoke type	

Model	Bluroc Hunt S	Bluroc Spirit
Dimensional parameters		
Tire size Front/ Rear	110/70-17 / 130/70-17	110/70-17/ 140/70-17
Tire pressure kPa (front/ rear)	225/225	
Brake type Front	Disk	
Rear	Disk	
Brake control mode (front/ rear)	Hand brake/foot brake	
Shock absorber type Front	Spring oil damping	
Rear	Spring oil damping	
Electric system		
Spark plug model	CR7E	
Head light specification	Semi-closed 12V 35W/35W	
Turning light	12V 10W	12V 0.85W
Front position light	12V 4W	12V 5W
Brake light / rear-position light	12V 21W/5W	12V 3W/1.27W
Meter indicator light	12V 2W	
Fuse size	15A	
Battery	12V 9Ah	
Horn model	Electromagnetic vibration type 12V 3A 105dB(A)	
Model or type of speedometer	Electronic	
Radio jamming suppression type	Non-shielded spark plug ignition suppresser +throttled spark plug	

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