OPERATIONAL INSTRUCTION

XY125-37



IMPORTANT INFORMATION

Please read the user's manual carefully before going on the first riding. This manual contains a large amount of information of operation and cautions, which will help you to handle and control of the motorcycle. For your safety, please pay a great importance to the cautions as follows:

WARNING

——Any ignorance of the mentioned-below information may lead to safety problems.

CAUTION

——Any ignorance of the mentioned-below information may cause the damage of motorcycle parts or it may compromise the driving safety of the motorcycle itself.

Please fill in the blank with the serial Nos. of the motorcycle,

Frame No.:

Engine No.:

Distributor:

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I . MAIN TECHNICAL DATA

Length	1945mm	Bore * Stroke	54×54
Width	720mm	Compression ratio	9.0:1
Height	1385mm	Max power	6.3Kw/8000r/min
Wheelbase	1255mm	Max torque	9.0N.m/5500r/min
Gross weight	101kg	Idle Speed	1500±150r/min
Max loading weight	150kg	Displacement	124ml
Front wheel type	70/90-17/225 kPa	Spark plug type	A7RTC
Rear wheel type	80/90-17/230 kPa	Spark plug gap	0.65mm-0.75mm
Max speed	≥80km/h	Valve gap	Intake valve: 0.01 ~ 0.03mm
Stopping distance	≦7m（30km/h）		Exhaust valve: 0.01 ~ 0.03mm
Climbing ability	≥25°	Economical speed consumption of fuel	≤1.9L/100km
Lubricant volume	0.8L	Overcurrent protection	10A、15A
Fuel tank volume	4.7L	Battery	12V/5Ah
Transmission ratio		Headlight	12V/7.2W/14.5W
Gear I	3.272	Taillight/Brake signal light	12V-1.35W/2.55W
Gear II	1.937	Turning signal light Fr	12V/2.1W×2
Gear III	1.353	Turning signal light Re	12V1.1W×2
Gear IV	1.043	Turning instruction light	12V-0.5W
End level transmission ratio	2.571	Meter light	12V-0.5W
Initial level transmission ratio	3.722	Far-reaching light instruction	12V-0.5W
Minimum ground clearance	150mm		

II . OPERATION INSTRUCTION

This instruction book illustrates the notes for the standard and safe operation method, and basic maintenance.

To ensure you're comfortable and safe riding experience, please read this instruction book carefully.

The pictures and illustrations in this book may be different from the actual vehicle, due to the difference of model.

The vehicle is specifically designed for two people (Including the rider himself)

⚠ CAUTION

- ***Do not use polluted fuel.***
- ***Using polluted fuel may possibly cause stain inside the fuel tank, which in turn block the fuel line, and occurs failure when the engine starts, or even cause severe damage to the engine.***
- ***Do not use sub-standard or polluted engine oil***
- ***Always use decent engine oil, so the engine's performance and longevity can be ensured.***
- ***If any failure occurs under the inappropriate usage of polluted oil or petrol, these failures can be worked out through warranty***

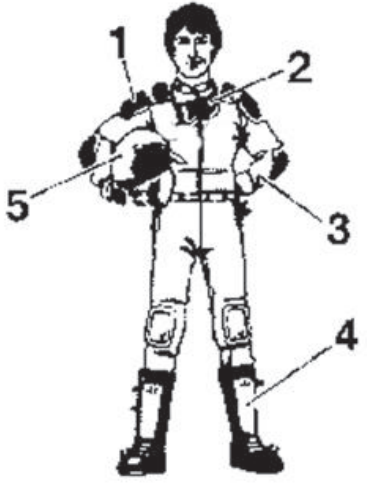
Protective wear

Protective wear such as helmet with protective mask, dust proof glasses and gloves should be worn during drive for the sake of personal safety.

The passenger should wear high boots or long clothes to protect legs from hurt by the heated exhaust silencer during ride.

Loose clothes are not suitable for motorcycle drive or ride as they may get caught on the operating lever, kick lever, footrest or wheel, resulting in danger.

- Always wear helmet
- Wear goggles
- Drive safely
- Pay attention to the muffler which may be on fire because of heat during riding.



1.Protective clothing 2.goggles 3.gloves
4.high boots 5.helmet

Preparation before operation

- Read the operating instruction carefully.
- Maintaining & checking before operation.
- Keep the engine switched off and away from fire.
- There exist harmful substance such as co in the waste gas, please start engine at the draughty area.

Proper Dress

- Always wear helmet, gloves and safety goggles throughout
- Do not suggest wearing the uniform which can easily affect operation, it's very dangerous if uniform was hitched by brake beam or driving chain.
- To avoid affecting brake or gearing, do not suggest to wear the slipper during riding.
- Many automobile and motor accident happened is because the drivers ignore riders.
- Make yourself conspicuous to avoid accident which is not caused by you.
- Dress flashy or reflective clothes.
- Do not ride at the other driver's blindness area.

CAUTION

- ***Do not take on the helmet which is easily increase hurt or death probability when accident.***
- ***Make sure passenger always wear helmet to protect eyes, and dress protecting clothes when driving.***

Operation

- The driver should make himself orientate naturally, keep driving favoring.
- Please check yourself whether are unnatural, anxious or excited
- Rider's gesture is very effective to safe operating. Please always keep sitting in the middle of the saddle, particularly do not sit in backseat. in case lightening the weight in front and trembling of handle.
- Passenger should stay on the vehicle, or hold on the driver, with putting feet on the rear footrest.
- When making a turn, make your body tend to the way you turn, if not., there may be dangerous.
- When driving on the circuitous & uneven road, it is not safe if you do not follow safety caution.
- To drive safely on this circuitous & uneven road, driver should reduce the speed a half as normal speed, and relax shoulder & waist, clench the handgrip.
- When driving, clench the handgrip without one hand or two hands, even lift up the front wheel, that is easily to roll-over, and arouse serious accident.

Modification of the vehicle

⚠ CAUTION

- ***Any unauthorized modification of the vehicle or replacement of the original parts cannot ensure driving safety and is illicit. The user must observe the regulations of the traffic control authorities. We are not responsible for any vehicle unauthorized modification.***

Loading of goods

⚠ CAUTION

- ***The design of the motorcycle requires distribution of the carried goods in certain extent of equilibrium and improper arrangement of goods will adversely affect the performance and stability of the vehicle. The manufacturer shall not take any responsibility due to the reason mentioned above.***

Accessory

- To avoid wearing out battery, do not attach any other lighting equipment except SHINERAY's original accessory.
- Check the accessories carefully, insure they will not block your sight, lower ground clearance and slant angle, limit moving of suspension, diversion, or control function.
- Do not add electric equipment, in case that would exceed capacity of vehicle electric system, lower light luminance and engine power.
- The vehicle is designed without side-car or trailer, because it will affect loading capacity seriously.

Muffler

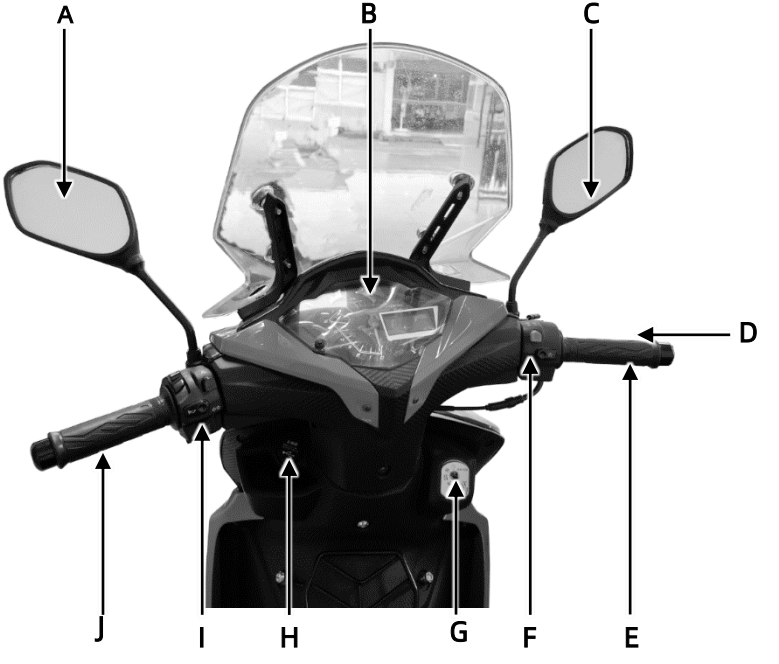
- Passenger should especially pay attention to avoid scalding by the muffler when driving.

⚠ CAUTION

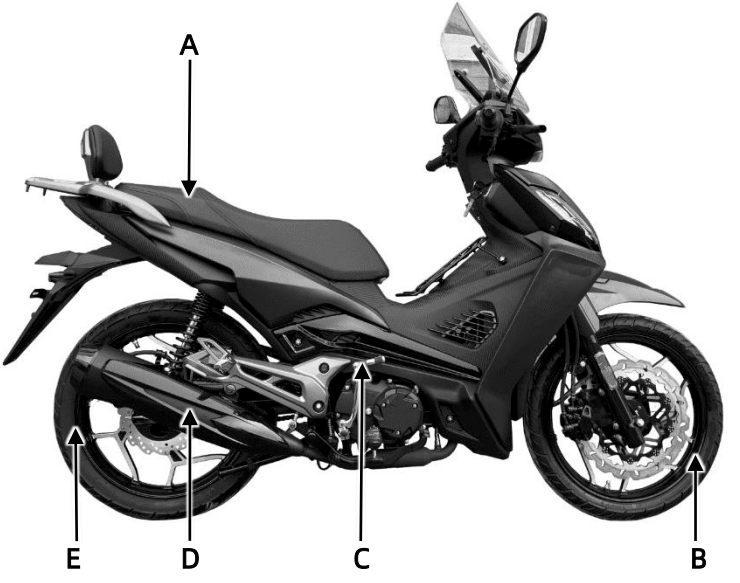
- ***To avoid scalding by muffler, do not park the vehicle at the walkway.***
- ***Passenger should attention that avoid scalded by the muffler***
- ***Hay or rattan plant will arouse fire if too closed to the muffler.***

III. PARTS POSITION

A. Left rear view mirror
B. Meter
C. Right rear view mirror
D. Front brake lever
E. Throttle twist grip
F. Switches on Right Handlebar
G. Ignition & Steer switch
H. USB
I. Switches on Left Handlebar
J. Left handlebar



A. Seat assy
B. Front wheel
C. Kick starter
D. Muffler
E. Rear wheel

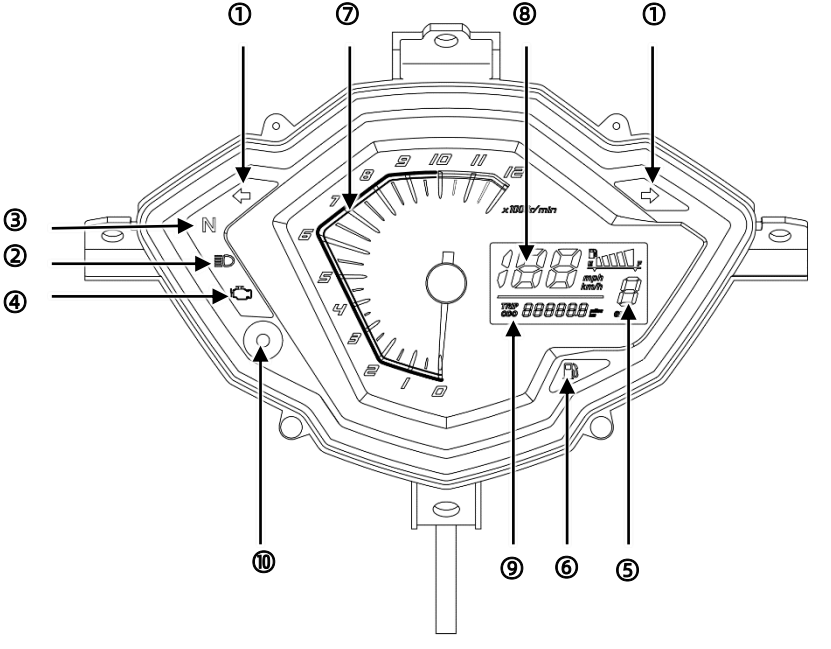


A. Front turn light
B. Real shock absorber
C. Rear turn light
D. Side stand
E. Main stand assy
F. Gear change pedal
G. Front turn light



Meter reading and usage

① Direction indicator lights
② High-beam light
③ Neutral warning light
④ Engine failure warning light
⑤ Gear position display
⑥ Fuel reserve warning light
⑦ Tachometer
⑧ Speedometer
⑨ Odometer
⑩ Button



1)Direction indicator lights “ ”

The light flashes when activating the left or right hand turning indicator using the control lever on the left-hand switch.

2)High-beam light “ ”

The light comes on when activating the high-beam light using the control on the left-hand switch.

3)Neutral warning light “ ”

This indicator comes on when the drive select lever is in the “N” position.

4)Engine failure warning light “ ”

When the ignition key is turned, the engine control unit runs a self-test, the light comes on for a few seconds and then goes off if no fault is found

If the light comes on while the engine is running, it means that there is an engine or injection system failure.

5)Gear position display

The gear position is displayed.

6)Fuel reserve warning light “ ”

The fuel level display will indicate the fuel volume. When the fuel is getting low the fuel pump symbol will flash.

7)Tachometer

Indicates engine rpm.

Maintain the engine speed within 10000 rpm

WARNING

- *The motor can be ruined by exceeding 10000 rpm.*

8)Speedometer

The meter speed displays with digital display, display range (0 - 199Km/h). When the speed is higher than 199Km/h, speed display value is 199Km/h.

9)Odometer

Indicate riding distance (Km).

10) Button

Button function:

1.Metric/imperial units switch: Press the button for 2s when ignition switch is at ON position.

2.Mileage/trip switch: Short(0.3s) press the button in normal display interface.

3.Trip reset: Press the button for 2s in trip display status to reset the digits.

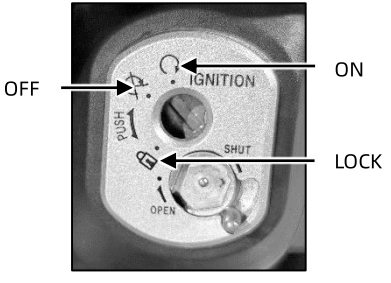
4.Background light switch: Press the button for 2s in ODO display interface.

Operating system

Switch instruction

Main Switch used to Start or switch off the Engine.

Position	Function	Key Removable
⊗	OFF (all circuits disconnected)	Yes
↻	ON (all main circuits connected)	No
🔒	Steering locked and all circuits disconnected	Yes



⚠ CAUTION

- *Do not move the Key position when Riding, if the key is on ⊗ position during riding, all electric system will out of Action; So during riding do not move the main switch Key in case of accident. If it's necessary, rider should stop the motorcycle before taking out the key.*
- *Before take out from motorcycle, make sure the handle bar is knocked.*
- *If the engine is not started when the key is put on ↻ position, the battery will discharge.*
- *Do not use the key with other sharp Metal keys or key box, in case of scratching the upper board or leads to other kind of lost (suggest to use cloth or leather made key box).*

R.H. handlebar switch

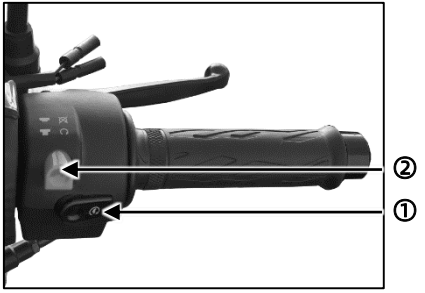
The right-hand switch features the following controls:

1) Engine start button

Pressing the button (1) with the key in position and the switch (2) in position, the engine starts.

2) Engine kill switch.

Flicked to position, disables engine starting and running.
Flicked to position, enables engine starting and running.



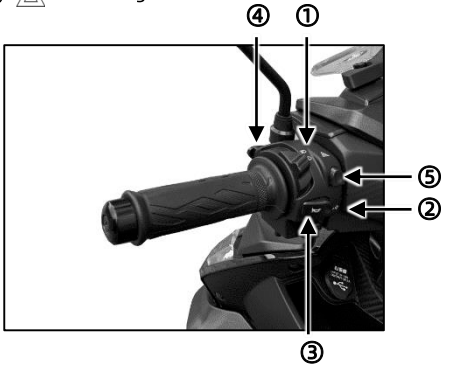
L.H. handlebar switch

The left-hand switch features the following controls:

1) High beam
   Low beam
2) Left-hand turning indicators (self-cancelling)
   Right-hand turning indicators (self-cancelling)

To deactivate the turning indicators, press the control lever after it is returned to the center.

3) Warning horn
4) Overtaking Light
5) Hazard Light



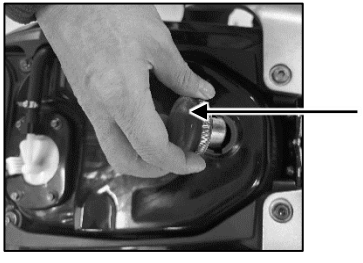
Fuel

Fuel filling

The capacity of the fuel tank is 4.7L.

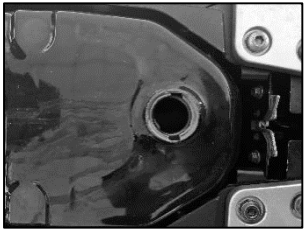
The recommended fuel is lead free gasoline of No.92III(RON 92) or higher grade.

Place the motorcycle on a horizontal surface with main stand. Unlock the saddle lock and remove the saddle. Remove the fuel tank cap (as shown in the picture below) and filling with recommended fuel. Reverse the previous operation after filling.



⚠ WARNING

- *Gasoline is flammable and volatile. Please operate in a well ventilated area and ensure that the engine is turned off before refueling. Stay away from fire.*
- *Do not refuel excessively. The fuel level must not exceed the fuel blocking ring at the fuel tank opening. And leave some space to prevent fuel expansion. After refueling, make sure the fuel tank cap is well tightened.*
- *Avoid repeated and prolonged contact or breathing of gasoline.*
- *Keep the fuel out of reach of children.*



IV. CORRECT DRIVING

Engine starting

Set the key of the ignition switch to "  " position.
Set the emergency stop switch to "" position.
Ascertain the gear is in neutral position by checking the neutral position lamp is lighted.
Ascertain the fuel level in the tank.

To start engine

Start the engine by the electric cell motor. Each time you push down the start button, it is recommended that you stop pushing when firing sound of the engine combustion is heard and the engine is fired and running. If the engine is not firing, please stop pushing down the start button in 5 seconds, and wait for more than 5 seconds before next start.
Slightly turn the throttle twist grip by about 1/8 turn but never over 1/4 turn to increase intake air and restart the engine again if the engine started but stalled during idling in cold seasons, and keep the engine running at a higher speed so as to warm up the engine for about 10 seconds or more.

⚠ CAUTION

- ***The engine can only be started when the gear is in neutral position or clutch is OFF. Otherwise accident may happen.***
- ***Unnecessary long time idle running (especially at a high speed) may be harmful to the engine.***

To stop engine running:

You can also stop the engine running by turn the ignition key to "  " position to cut off all electrical power.

If the start fails

If the engine can't be started, or the motorcycle is not moving, the points below should be checked:

- If there is fuel in the tank.
- If the motorcycle is properly operated according to the instruction book shows.
- If the fuse is melted.
- If the engine start button is working properly.
- If the battery is finished with power which cause the engine start button not working, please try the kick start.

Run-in of engine

Run-in of the engine is very important. Any operation without run-in (or improper operation) will cause serious damages or failures of function

A.Engine without run-in and the one has been run in have big difference in their power and torque performance.

B.The well run-in engine: the initial wear-out of the parts is well renewed, which eases the damage to the parts in fierce movements, and extend the service life of the engine.

C.Requirements

1).Never fully open the throttle when the new motorcycle has not been ridden for more than 350km.

2).When riding in each gear, the speed should less than 80% of its allowed speed (the opening of the throttle should be less than 80%), and shift the gear in time.

3).Do not let your engine bear too much load in the first 350km.

Maintenance of the engine:

A.When the engine has run in for 800-1000km, a duly check should be taken.

1).Replace the engine oil (the capacity of the engine oil is 0.8L)

2).The adjustment of the valve clearance inside cylinder head is allowed (carried out by dealer service stuffs)

B.After finishing 800-1000km run-in, please activate ordinary maintenance.

1).Check the spark plug, adjust the clearance and clean up the carbon deposit.

2).Replace the engine oil

3).Tighten each fastener

4).Clean the air cleaner

Checking before operations

In order to ensure safety, vehicles must be checked and maintained on time.

Please make sure thorough inspection for the vehicle is finished each time before you ride.

1、Engine oil level checking: Insufficient engine oil will cause earlier abrasion, and damages.

2、Fuel level checking, tighten up the fuel tank cap, and check if the fuel pipe is twisted.

3、Transmission chain checking, loosen chain will fall out of the sprocket, severely worn out chain may break, insufficient lubrication may cause the abrasion to the chain and sprocket, and if the chain is getting too tight, then the transmission system will be suffering extra burden, which in turn abase the chain or break the transmission.

4、Check the tire, to see if the tire is under abrasion, tire with scratch or grooves abnormal should be replaced, the tire tread's depth should meets the legal regulation, moreover, tire pressure inspection is also crucial. Both factors mentioned above is key to the motorcycle performance and safety.

5、Brake system checking, to see if the brake system is working normally. Brake fluid amount and the state of the brake shoe should be checked. The brake fluid checking should be done before the engine started, if the level of the fluid is lower than the minimum level line, the cause maybe leaking or the abrasion of the brake shoe. To avoid the utter incompetence of the brake system. Please go to SHINERAY's technician for professional inspection and suggestions, we will also help you to check the condition of the brake pipe, disk and brake shoe, also the distance of the brake lever and pedal.

6、Cable checking, Please check if all the cable for control is correctly installed, and moves smoothly.

7、Throttle checking, check the throttle grip, throttle cable to see if there is enough gap, and if the acceleration process is smooth, and turning off process is fast and clear.

8、Lights and horn checking, please kindly check if the illumination and the horn are working normally.

9、Rear view mirror checking, sit on the vehicle and keep your body vertical to the ground, see if you get a clear view of the world behind you from the rear view mirror.

10、Steering bar adjusting, sit vertically on the seat, check if the steering bar is at the best position for your safe and comfortable operation, also without the tangle of cables..

⚠ CAUTION

- *When you check, please make sure your conformity to the safety rules and law.*
- *The exhaustion contains harmful gas, like CO, so please make sure when you make the checking with the engine started, keep it in ventilated place.*
- *The checking should be launched in flat and hard ground, with stable support.*
- *Watch our for fire when the engine is just switched off, because the engine and muffler are still quite hot then.*
- *Before you repair or mend, the engine should be switched off and the key should be pulled out.*
- *If the problems still exist after calibration, please immediately get contact with our authorized workshops , dealers or appointed repair shops .*

Gear shift

①.When you ride on the motorcycle and the engine is idling, push the gear shifting pedal down by left foot fingers to change the gear from neutral to 1st gear position.

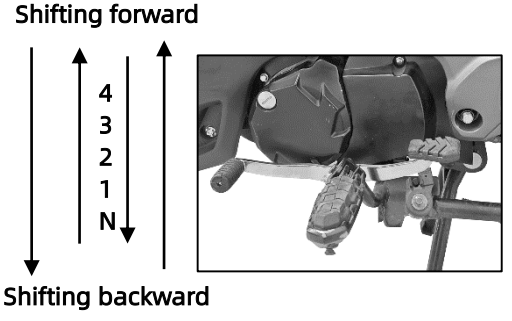
②.Gradually turn the throttle twist grip to increase the speed of the engine to about 3000 r/min, When the motorcycle reaches a balanced state of running, return back the throttle twist grip and then push up the shifting pedal to change the gear to the 2nd position.

③.The gear can be shifted up to 3rd-4th gear position in the same way.

④.If you push down the shifting pedal instead of push up, you can change down the gear position.

Gear down operation

If you want to speed up drastically, for example, when passing another motorcycle, gearing down can provide faster acceleration, but if the speed gets too high, damage for the engine may be caused by over-speed.



Operation

- Before starting the engine, please make sure the side stand is at the right position.
- If the side stand can't be moved smoothly, please check the lubrication of the side stand joint.
- Shift the gear properly according to the motor speed,
- In order to keep the fuel consumption at a lower state, and also to ensure the longevity, please do not accelerate or decelerate too drastically.

< Running in >

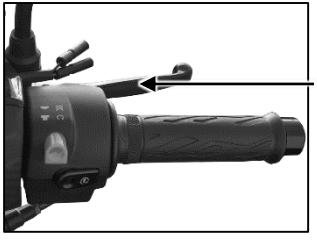
Make 1000km running in at the speed of 6000rpm, this can provide better longevity

⚠ CAUTION

- ***Always start the vehicle from gear I, and make the starting process as slow and carefully as possible.***
- ***During the riding, if there is any abnormal noise, please contact the authorized distributors for inspection, and take necessary step.***
- ***Keep the speed under the legal limit.***

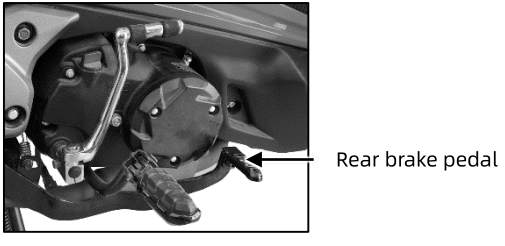
Front brake lever

The front brake lever located on the right hand side is used to slow down or stop the vehicle.



Rear brake pedal

The rear brake pedal is located on the right side of the motorcycle. When the pedal is depressed for braking, the stop light will illuminate.



< Engine brake >

The engine can work as a brake if you rotate the throttle grip in as reversed direction, And if you need stronger braking power, lowering the gear to IV or III is suggested, meanwhile, if you need the motorcycle roll march in a lasting decelerating state, or decelerates quickly, you may use the vehicle brake and use the engine brake at the same time.

⚠ CAUTION

- ***When the motorcycle running over speed, do not switch to the lower gear, in case to reduce the speed suddenly and cause damage to the engine and transmission system; and even cause shaking of rear section of the vehicle.***

Park

- Shift the gear to neutral, and switch off the motorcycle.
- Turn off the throttle.
- Please use the main stand to keep the motorcycle steady, and keep the motorcycle on the horizontal ground, or else, the vehicle will fall down.

⚠ CAUTION

- ➢ *Park the motorcycle in safe and traffic free place.*
- ➢ *The muffler could be severely hot, please pull off the motorcycle away from the place of easy access.*

< Park with side stand >

Place the motorcycle on horizontal ground, activate the side stand, and move the steering bar to the left side.

- If the motorcycle is placed on the terrains below, the motorcycle may possibly fall down.
- If the steering bar is moved to the right side, or the motorcycle is side stand on slopes, sandy, rough or soft ground, the vehicle is prone to fall down.
- In unavoidable situations, necessary steps must be taken to ensure the stability.

Rearview mirror

Before driving, must adjust the rearview mirror angle.

⚠ WARNING

- ➢ *Don't put anything on the back seat to avoid interfere with vision mirror.*
- ➢ *Don't adjust mirror while you are riding.*

⚠ CAUTION

- ➢ *To use soft paper or similar material to clean mirror, you can use detergent, but plea se don't spray detergent on the mirror directly.*

ΠΡΟΓΡΑΜΜΑ ΕΡΓΑΣΙΩΝ ΣΥΝΤΗΡΗΣΗΣ
Βλέπε στο σύνδεσμο "ΣΥΝΤΗΡΗΣΗ"

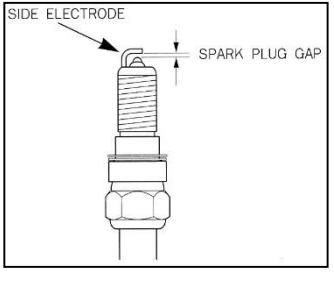
https://rb.gy/pk87bn

Spark plug

Remove the spark plug cap. Remove the spark plug with a socket wrench. Visually check whether there is any damage with the spark plug insulator and ablation with the electrodes. If yes, replace them.

Check the spark plug electrode gap with a plug gauge. Spark plug electrode gap 0.65-0.75mm. Carefully adjust the electrode gap. Then clear away the accumulated carbon and contaminants with a spark plug cleaner or string wire. Check that the spark plug sealing gasket is in good condition.

To mount the spark plug, manually screw up the spark plug first, and then tighten it with a socket wrench. Put on the spark plug cap.



Lubricating oil

Using high quality engine oil designed for four stroke engine will extend the life length of the engine. Please select the SE, SF or SG type high quality engine oil classified in API

Please apply Shell 15W/40-SF engine oil in summer and 10W/30-SF in winter

⚠ CAUTION

- ***The insufficiency or poor quality of the engine oil will lead to the premature wear-out of the engine.***

Substitution of the engine oil

Engine oil plays a very important role in the normal operation of the engine and for that reason, it is necessary to check the motorcycle for Engine oil periodically and renew the oil once every 800-1000 km of drive by the following procedures.

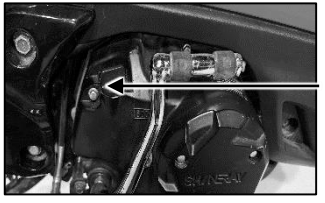
Note: When replacing the engine oil, please clean the short and long oil rulers and to replace with both oil filters. The engine oil should be replaced at an operating temperature.

Unscrew the draining nut when the engine is hot and then drain the old engine oil.

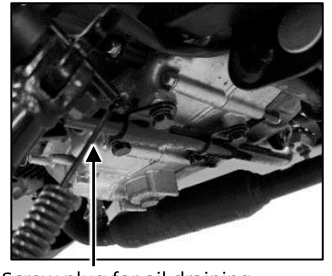
Clean the filter and then install. Fill with 0.8L new engine oil. Start the engine for idle running with 2-3 minutes.

Check whether or not the engine oil level is among the lowest

and highest level of the oil ruler.



Machine oil gauge



Screw plug for oil draining

CAUTION

- ***When the engine is at a operating temperature, the engine oil might be very hot, so do not make yourself burnt.***
- ***Place the motorcycle flatly, take off the plug, then fill the engine oil in the container. Clean the plug thoroughly.***
- ***Since all the oil has been used up, clean the gasket and tighten the gasket and plug together to 18 - 22N.m***
- ***Oil ruler must be mounted properly, or the oil ruler will fail to function and strengthen wear-out of the engine.***

Cleaning the sump

- Drain off the engine oil thoroughly.
- Disassemble each parts
- Clean each part respectively.
- Fuel with the appointed engine oil.
- This work only can be done by professional stuff, please have your sump cleaned at the authorized service station.

The oil drain plug (filtering net cover) remove

Out the filter net

The filtering net is dross clean

According to the original machine assembly reduction

Check-up & adjustment of air valve gap

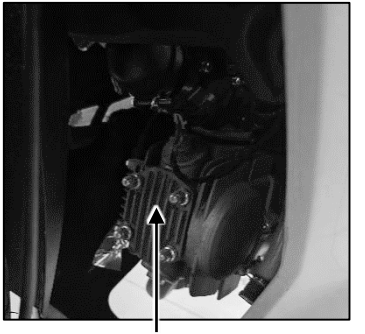
Noise will stem from too big gap of the air valve. However, if there is too small gap or even no gap at all, closing of the valve will be hindered, which will cause burn of the valve and output drop. Therefore, the air valve gap must be checked periodically. The gap of the air valve should be inspected and adjusted with a cold engine by the following procedures:

①.Remove the caps of the central hole and the top hole(the ignition timing observation hole)in the left crankcase cover.

②.Remove the caps of the two air valves on the cylinder head.

③.Insert the "T" key into the central hole of the crankcase cover, jam it against ghee nut of the flying wheel and then turn the flying wheel clockwise until the engraved "T" mark on the flying wheel aligns with the engraved line on the top of the crankcase cover. Swing the rocking arm slightly. A loose rocking arm (which indicates the existence of clearance) shows that the piston is in the lower stop position of the compressing stroke. I n this case, continuously turn the "T" key clockwise for 360 degrees until the alignment of those engraved marks, where the valve can be adjusted. Afterwards, check the valve gap by inserting a feeler in between the valve adjusting screw and the end of the valve.

The specified air valve gap:0.01-0.03mm for the intake and exhaust valves respectively.



Central hole cover

Check-up, cleaning of air filter

Take out the air filter and check if it is contaminated.

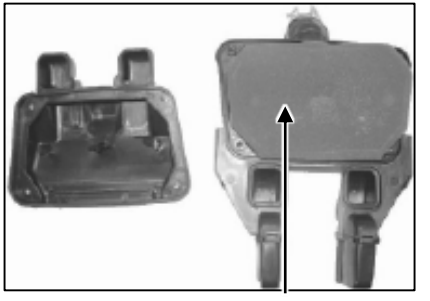
Dismounting:

Open the right side cover. Remove the right side cover screw of the filter, open the right cover and disassemble the air filter.

Cleaning:

Wash the filter in clean washing oil and wipe it dry with dry cloth. Soak the filter element in clean engine lub oil. Squeeze it dry and fit it back to position.

Recommended oil:15W/40QE



Air cleaner element

⚠ CAUTION

- ***The air filter element for use must be intact or the engine will suck in dust and dirt, resulting a shorter service life of the engine.***
- ***Water should be prevented from entering into the filter in washing the vehicle.***
- ***The filter shall never be cleaned with gasoline or any other agent of a low ignition point.***

Throttle control cable adjustment

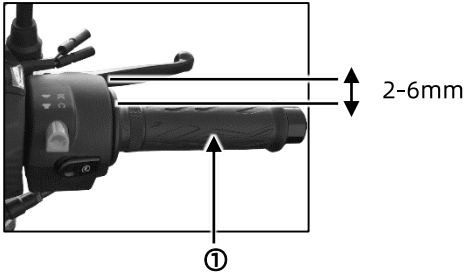
To check proper adjustment of the throttle control transmission, operate as follows:

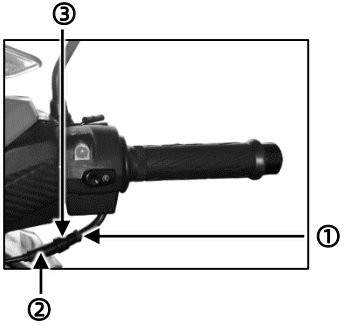
-Turn throttle twistgrip (1) and make sure it has about 2 mm free play;

-Should this not be the case, move the two protective rubber washers (2);

-loosen the lock nuts (3) and act on the adjuster (4) to adjust the play;

-Tighten back the lock nuts (3);





WARNING

Using the motorcycle with a damaged throttle control cable considerably compromises safe riding.

Exhaust gas contains poisonous carbon monoxide. Never run the engine indoors.

Brake system

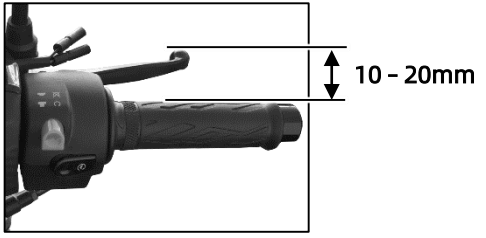
The front and the rear brake is disk type, due to the abrasion of the brake shoes, the brake fluid will be getting less as time goes by.

The performance can't be adjusted, but the brake fluid level and brake shoe abrasion are the two most important factors, that needs to be checked on time.

The brake system should be checked frequently, to ensure there is no leaking.

Front Brake

The front brake lever should have a free operating stroke of 10-20mm as shown in the next figure.

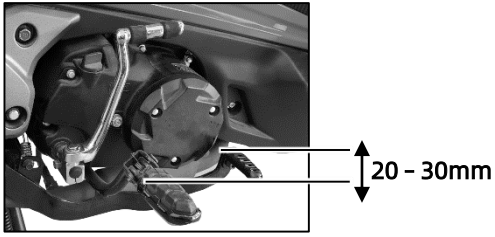


Rear brake pedal adjustment:

1. Preparation: Lift the motorcycle with the side stand.
2. Locate the adjustment part: On the pull-rod which connects the rear brake pedal and the brake drum, find the adjustment screw with a lock nut.
3. Adjust the free play:

- First, use a wrench to loosen the lock nut on the adjustment screw counterclockwise.
- Turn the adjustment screw clockwise: to reduce the pedal free travel (for more sensitive braking).
- Turn the adjustment screw counterclockwise: to increase the pedal free travel (to prevent brake drag).

4. Check: After adjustment, gently press the pedal. There should be a 10-20mm free play (the distance with no braking force at the beginning of the press). When pressed fully, the brake should be powerful and without sticking.



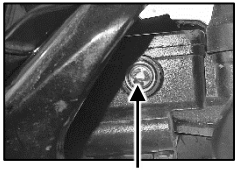
5. Fix the position: Once the gap is appropriate, tighten the lock nut clockwise to prevent the adjustment screw from loosening. Additional check: When pressing the rear brake pedal, the brake light should light up promptly. If not, check the position of the brake light switch.

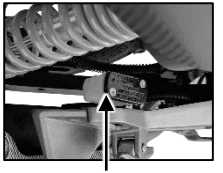
⚠ WARNING

- ***In the absence of the required free play, the brake pads will apidly wear, resulting in the risk of TOTAL BRAKE INEFFI-CIENCY or rear brake lock.***

Brake oil

Brake oil cup is connected with brake oil pump. The oil cup contains a clear check window ① (as shown in the picture below). Place the oil cup in a horizontal position. The brake oil level should not below the lower edge of the check window to avoid the risk of brake travel increasing due to air entering. The brake oil level should not over the upper edge of the check window. If the brake oil if found to be turbidity, impurities or odor, the brake oil must be drained completely and refilled.



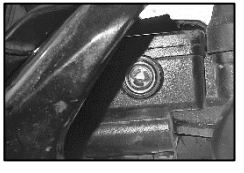


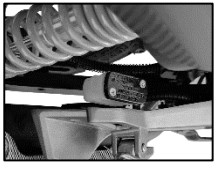
⚠ WARNING

- *Once the brake lever operating becomes heavier, there might be air entering or brake defectiveness which brings risk of riding, please ask an official dealer for further inspection.*
- *The brake fluid used is DOT4 non-petroleum based brake fluid.*
- *Brake fluid should not be mixed with other impurities, otherwise chemical changes may occur and the braking performance will be reduced.*
- *Brake fluid has strong corrosiveness. Do not splash onto the surface of painted or plastic parts; If it is contacted with the eyes or skin, rinse with plenty of water and seek medical attention immediately.*

Brake oil refilling

Place the brake oil cup in a horizontal position, remove the bolts and the cover, and replenish the brake fluid to the corresponding position.



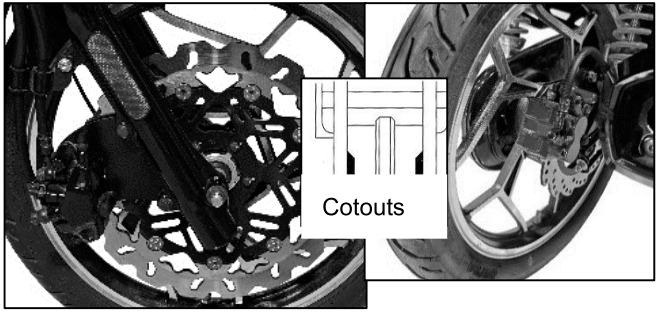


⚠ CAUTION

- *The brake fluid is strongly corrosive, never splash it onto the surfaces of spray painted or plastic pieces; in case it splashes into the eyes or on the skin, immediately flush with large amounts of fresh water and see a doctor.*

Brake piece checking

Operating brake, if the wears limit line of the brake shoe touch to the side of the brake disc. It shows that the brake shoe has touched the wear limit.



Running system

Tire specifications and tire pressure

Check the tire pressure with a tire pressure gauge to see whether the pressure conforms to the recommended value.

< Scratches/damage >

Check the tread and side whether with scratches and damage.

Check the tread whether has abnormal wear indication.

Checking the tread and side whether with nails, stone, etc., these things may have been penetrated into tire.

- Checking wear indicator (wear limit mark), see the tread depth whether enough.
- Replaced new tires if indicator visible.

⚠ CAUTION

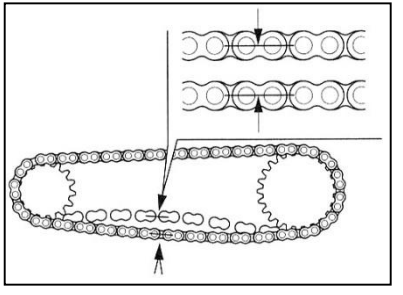
➢ ***If tire pressure is not enough, or it has crack, damage or abnormal wear, would cause the steering wheel jitter and flat tire.***

Driving chain

Driving chain tension inspection

Park the motorcycle on level ground with main stand, and shift the transmission to the neutral position. Check the driving chain tension. Press the chain with a finger up and down to check the amount of movement of the lower chain.

Driving chain tension: 10-20mm.

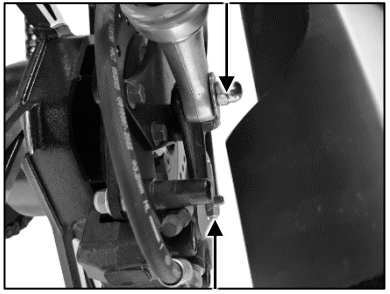


If the chain is too loose or too tight, make adjustment.

Adjusting methods:

Unscrew the rear wheel spindle nut and turn the adjusting bolt on the chain adjuster until the specified tension is achieved, and then fasten the rear wheel spindle nut, and check the flexibility for free rotation of the rear wheel and the consistency of the front and rear wheels.

Unscrew the rear wheel spindle nut



Adjustment

⚠ CAUTION

- *The scale lines of the chain adjuster on both sides must be consistent with each other.*

⚠ WARNING

- *The rear wheel spindle nut must be firmly screwed up to the tightening torque of 45-55N.m.*
- *Clean and inspection of chain*
- *First, remove the chain by detaching the spring locking pieces and the removable chain plate.*
- *Use cleaning liquid to wash the driving chain and remove dust and mud, and then air dry it; check the chain for abrasion or cracking, and replace it in case of damage.*
- *Remount the chain and coat it with chain-specific lubricant; while mounting the chain, the spring locking pieces shall be in the opposite direction with the chain movement, the left and right scale lines of the chain adjuster shall be consistent and the chain swag (tension) shall be 10-20mm.*
- *Inspect the abrasion of major / minor sprocket. In case of serious tooth abrasion, teeth missing or broken teeth, replace it.*

⚠ CAUTION

- *This model uses the oil seal chain, so the selected washing oil shall be in corrosive to the oil seal; while assembling the chain, the locking piece coupling spindle shall be coated with appropriate amount of chain-specific lubricating oil.*

⚠ WARNING

- *While mounting the spring locking pieces, its opening end shall be in the opposite direction with the normal movement of the driving chain.*

Battery checking

Battery level checking

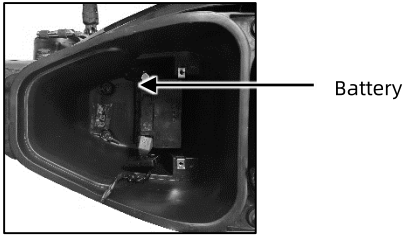
The battery is located in the storage box under the saddle, disassemble 2 self-tapping screw, remove the battery cover, battery and is free of maintenance. There is no need to check the electrolyte level. Clean the battery terminals regularly.

The condition of charging will significantly influence the life length of the battery.

To remove the battery

Firstly, disconnect the negative pole, then the positive pole. Remove the battery and replace with a new one (of the same type and specification), then connect the positive pole first and the negative pole last

.



CAUTION

- ***Never remove the cover, or the battery will be damaged.***
- ***Pay attention to the installation positions of different battery.***
- ***If the motorcycle has not been used for quite a long time, please remove the battery from the motorcycle to charge. Keep the temperature staying in an interval of 0 to 35 degree centigrade. Avoid direct sunlight and please charge the battery every 3 months.***

Charging the battery

The battery is losing power every day, even if it is not used. Please disconnect the battery cord, and strictly follow the instruction in the operation manual while charging battery.

The charging amperage and time of charging should not exceed the required standards. Charging at high amperage will negatively influence the life of the battery.

Please regularly use special charging devices to charge the maintenance free battery. You can also apply such device to test overload voltage, the stability of the battery. In addition, this charging device will avoid overcharging of the battery.

If you find the battery is out of charge when starting the motorcycle, please charge the battery as soon as possible. Bat-

tery will be damaged if it stands in a status of being uncharged for a long period.

⚠ WARNING

- ***Keep the battery away from burning flame when charging, or the hydrogen ejecting from the battery when charging will cause fire.***
- ***Never let your clothes, skin and eyes get touch with the acid from battery, it may cause burn and blindness. If such situation happens, please use water to wash thoroughly. If the acid has splashed into your eyes, please wash for 5 minutes and then go for medical.***
- ***If the acid splashes on your clothes, it will corrode your clothes and burn your skin. So, undress the clothes and then clean up the acid on the clothes.***

Replacement of fuse

Turn off the ignition switch and check if the fuse is blown.
When replacing the fuse, always get a fuse of the specified rating.

- Before replacing the fuse, first find out why it is blown.
- Disassemble 2 self-tapping screw, remove the battery cover
- The fuse is located nearby the battery.
- To remove the fuse:

Open the fuse cover and take out the blown fuse.
If the fuse is not well in contact, it will create heat and easily leads to circuit failure.

- To assemble it:

Insert the fuse in the holder and position the cover back in place.
Be sure to gently pull the fuse to ascertain that the fuse has good contact. A loose fuse will generate heat.

⚠ WARNING

- ***To replace the battery (lamps), use only the original components of the prescribed specification.***
- ***f components are not original or out of specification, the fuse can easily be blown, and the battery will not be in balanced status.***
- ***When washing the tractor, do not wash it with high-pressure water jet.***

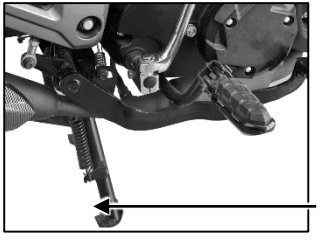
⚠ CAUTION

- ***To remove the fuse:***
- ***Care should be taken when removing the fuse, as its holder is very small. If the fuse does not have good contact after opening the cover, it may generate heat and lead to circuit failure.***

- ***To assemble the fuse:***
- ***Insert the fuse in its holder.***
- ***Be sure to gently pull the fuse to ascertain that the fuse is well in contact. A loose fuse will generate heat.***

Main stand

Shore up the main stand, the motorcycle in proper position. Check the whether the spring have scratch problem or not, the connector is lubricating or not.

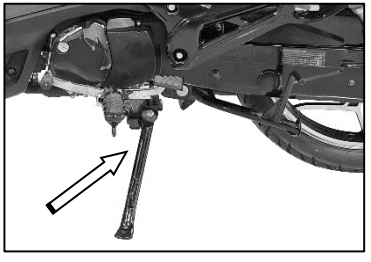


Bolts, nuts and fasteners

All the bolts, nuts and fasteners shall be screwed up as per the maintenance period table. And check all the cotter pins, safety gripping gears, locks, etc.

Side stand

Power goes off with side stand lowered down (as shown in the pic). Motorcycle is able to be started only when the side stand is rised up.



Vehicle washing

Cleaning

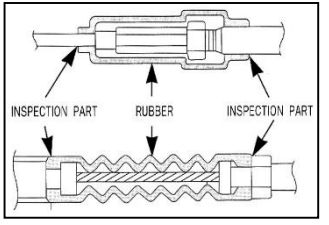
Keep clean of the motorcycle not only make it appear beautiful but also keep its efficient function and extend the service life of many parts on the vehicle

Before cleaning motorcycle:

- Bock the end of exhaust pipe to avoid the water in. Plastic bag and strong rubber tape are available.
- Make sure the spark plug and oil tank lidhave been installed correctly.
- If the oil stain on the engine body is too much, with brush to clean it away.
- Clean away dust and oil stain with soft water pipe.

Rubber part of the cable

Rubber is around the cable outside, to protect the inner part. Keep the cable in proper position. When cleaning, don't wash by water, but by cloth



⚠ CAUTION

- *High pressure of water will make the vehicle hydrops, and will make the function of the brake system, seal parts of transmission and electrical parts deteriorated.*
- *With warm Neutral detergent water to clean the surface when most of the dust is washed away. An old toothbrush or small round brush which used to clean the glass bottle could be used to clean the place which could not catch easily.*
- *Wash with clear water right away, and then wipe dry with soft leather, clean towel and absorbent cloth.*
- *With leather cleaner to clean the seat cushion, keep it is soft and smooth.*
- *When finished, start engine, make it is in an idle state in a few minutes at the same time.*

⚠ WARNING

- ***Moisture brake will reduce the function of brake, and increase the possibility of accident.***
- ***So testing the function of the brake after cleaning. Run the brake under the lower speed many times in order to wipe dry the friction plate.***

Storage

For the motorcycle to be stored for a long period of time, attention should be paid to the prevention of moisture, sunshine and rain attack in order to protect it from unnecessary damage. Special check-ups should be carried out on those important parts and subassemblies before storage.

①.Change lubricating oil.

②.Grease the chain.

③.Dismantle the battery and put it in a shady, cool and well-ventilated place. It is suggested that the battery be charged once a month to preventing it from over discharged and out of function.

④.Clean the vehicle and apply antirust oil to the part vulnerable to rust.

⑤.Inflate the tyre as required and support the vehicle up with the main stand.

⑥.Take out the ignition key and keep it in your well planned place for easy resumption of service.

⑦.Put the covering over the motorcycle.

Standard torque values

Item	Quantity	Thread diameter (mm)	Torque value (N.m)
Cylinder head nut	4	M6	12 ~ 16
Magneto flywheel fastening nut	1	M10×1.25	28 ~ 35
Spark plug	1	M12×1.25	12 ~ 18
Front wheel axle	1	M12×1.25	45 ~ 55
Real wheel axle nut	1	M12×1.25	45 ~ 55
Rear fork shaft nut	2	M12×1.25	45 ~ 55
Engine fixing bolt	2	M10	45 ~ 58
Steering handlebar set bolt	1	M10×1.25×50	35 ~ 45
Steering pin lock nut	1	M24×1	70 ~ 80
Brake caliper fixing bolt	4	M8	20 ~ 32

In addition to the torque values of the important parts as listed above, the torque values for other standard fasteners are as follow:

Name and dimensions	Torque value (N.m)	Name and dimensions	Torque value (N.m)
5mm bolt & nut	4.5 ~ 6	5mm Screw	3.5 ~ 5
6mm bolt & nut	8 ~ 12	6mm Screw	7 ~ 11
8mm bolt & nut	18 ~ 25	6mm spool bolt & nut	10 ~ 14
10mm bolt & nut	30 ~ 40	8mm spool bolt & nut	20 ~ 30
12mm bolt & nut	50 ~ 60	10mm spool bolt & nut	30 ~ 40

VI. ENGINE MANAGEMENT SYSTEM

EFI system composition

The Engine Management System (EMS) is comprised of the following components: Electronic control unit (ECU), throttle body, Idle speed control valve, fuel pump, fuel injector, ignition coil, O2 sensor, throttle position sensor, T-MAP sensor, cylinder head temperature sensor, etc.

The EMS uses sensors to collect parameters such as air flow, temperature of inlet air, cylinder head temperature, atmospheric pressure and the operational state of engine (rpm, load, acceleration and deceleration). All parameters are transferred to the ECU via electronic signal. The ECU outputs control signals after the input signals have been processed. Based on the air flow and engine speed, the fuel injector and ignition coil are controlled by ECU to get the optimal combustible mixture of fuel and air and Ignition timing which meet all engine operating conditions.

Through the engine and actuator components on the vehicle (ignition coil, fuel injector, idle speed control valve and so on), the fuel and spark are precisely controlled and corrected with closed loop.

System composition

1、Sensors:

- Intake air pressure sensor (load information) intake air temperature and pressure sensors
- Throttle position sensor (load information, load range information, acceleration / deceleration information)
- Engine speed sensor (speed information, crankshaft position)
- Intake air temperature sensor (air density information)
- Oxygen sensor (information of the excess air coefficient is more than 1 or less than 1)

2、Actuators:

- Fuel pump relay,
- Fuel pump
- Fuel injector (fuel supply)
- Ignition coil
- High-tension cord
- Spark plug (ignition)
- Throttle, Idle speed control valve (air intake)

3、Electronic control unit

- ECU

VII. OBD2 TROUBLE CODES FOR EURO V

NO.	PARTS	TYPE	DEVICE CIRCUITS	ENABLAE	DTC	DTC NAMING
1	Crankshaft position sensorsensor	Basic require-ment	Not opera-tional/ Not present	I&II	P0335	Crankshaft Position Sensor "A" Circuit
2	Engine coolant tem-perature sensor	Circuit continuity	Circuit High	I&II	P0118	Engine Coolant Temperature Sensor 1 Circuit High
			Circuit Low	I&II	P0117	Engine Coolant Temperature Sensor 1 Circuit Low
			Open Circuit	I&II	P0118	Engine Coolant Temperature Sensor 1 Circuit High
		Circuit rationality	Out of Range	II	P0116	Engine Coolant Temperature Sensor 1 Circuit Range/Performance
			Perfor-mance/ Plausibility	II		
			Signal stuck	II	P0119	Engine Coolant Temperature Sensor 1 Circuit Inter-mittent
3	Intake air tempera-ture sensor	Circuit continuity	Circuit High	I&II	P0113	Intake Air Temperature Sensor 1 Circuit High
			Circuit Low	I&II	P0112	Intake Air Temperature Sensor 1 Circuit Low
			Open Circuit	I&II	P0113	Intake Air Temperature Sensor 1 Circuit High
		Circuit rationality	Out of Range	II	P0111	Intake Air Temperature Sensor 1 Circuit Range/Per-formance

			Performance/ Plausibility	II		
			Signal stuck	II	P0114	Intake Air Temperature Sensor 1 Circuit Intermittent
4	Manifold absolute pressure sensor	Circuit continuity	Circuit High	I&II	P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input
			Circuit Low	I&II	P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input
			Open Circuit	I&II	P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input
		Circuit rationality	Out of Range	II	P0106	Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance
			Performance/ Plausibility	II		
			Signal stuck	II	P0109	Manifold Absolute Pressure/Barometric Pressure Circuit Intermittent
5	O2 sensor (binary/linear) signals (Bank 1 Sensor 1)	Circuit continuity	Circuit High	I&II	P0132	O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)
			Circuit Low	I&II	P0131	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)
			Open Circuit	I&II	P0134	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 1)

		Circuit rationality	Performance/ Plausibility	II	P0133	O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)
6	O2 sensor (binary/linear) signals (Bank 2 Sensor 1)	Circuit continuity	Circuit High	I&II	P0152	O2 Sensor Circuit High Voltage (Bank 2 Sensor 1)
			Circuit Low	I&II	P0151	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1)
			Open Circuit	I&II	P0154	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1)
		Circuit rationality	Performance/ Plausibility	II	P0153	O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)
7	Throttle position sensor	Circuit continuity	Circuit High	I&II	P0123	Throttle/Pedal Position Sensor/Switch "A" Circuit High
			Circuit Low	I&II	P0122	Throttle/Pedal Position Sensor/Switch "A" Circuit Low
			Open Circuit	I&II	P0122	Throttle/Pedal Position Sensor/Switch "A" Circuit Low
		Circuit rationality	Out of Range	II	P0121	Throttle/Pedal Position Sensor/Switch "A" Circuit Range/Performance
			Performance/ Plausibility	II		
			Signal stuck	II	P0124	Throttle/Pedal Position Sensor/Switch "A" Circuit Intermittent

8	Vehicle speed sensor	Circuit continuity	Circuit High	/	P0503	Vehicle Speed Sensor "A" Intermittent/Erratic/High
			Circuit Low	/	P0502	Vehicle Speed Sensor "A" Circuit Low Input
		Circuit rationality	Perfor-mance/ Plausibility	II	P0501	Vehicle Speed Sensor "A" Range/Performance
		Basic require-ment	Not opera-tional/ Not present	I&II	P0503	Vehicle Speed Sensor "A" Intermittent/Er-ratic/High
9	Evaporative emission system purge control valve	Circuit continuity	Circuit High	II	P0459	Evaporative Emission System Purge Control Valve Circuit High
			Circuit Low	I&II	P0458	Evaporative Emission System Purge Control Valve Circuit Low
			Open Circuit	II	P0444	Evaporative Emission System Purge Control Valve Circuit Open
10	Fuel injector (Cylinder 1)	Circuit continuity	Circuit High	/	P0262	Cylinder 1 Injector Circuit High
			Circuit Low	I&II	P0261	Cylinder 1 Injector Circuit Low
			Open Circuit	/	P0201	Injector Circuit/Open – Cylinder 1
11	Fuel injector (Cylinder 2)	Circuit continuity	Circuit High	/	P0265	Cylinder 2 Injector Circuit High
			Circuit Low	I&II	P0264	Cylinder 2 Injector Circuit Low
			Open Circuit	/	P0202	Injector Circuit/Open – Cylinder 2
12			Circuit High	I&II	P0509	Idle Air Control System Circuit High

	Idle air control system	Circuit continuity	Circuit Low	I&II	P0508	Idle Air Control System Circuit Low
			Open Circuit	I&II	P0505	Idle Air Control System Circuit/Open
13	Ignition coil primary control circuits (Cylinder 1)	Circuit continuity	Circuit High	/	P2301	Ignition Coil “A” Primary Control Circuit High
			Circuit Low	I&II	P2300	Ignition Coil “A” Primary Control Circuit Low
			Open Circuit	/	P2300	Ignition Coil “A” Primary Control Circuit Low
14	Ignition coil primary control circuits (Cylinder 2)	Circuit continuity	Circuit High	/	P2304	Ignition Coil “B” Primary Control Circuit High
			Circuit Low	I&II	P2303	Ignition Coil “B” Primary Control Circuit Low
			Open Circuit	/	P2303	Ignition Coil “B” Primary Control Circuit Low
15	O2 sensor heater (Bank 1 Sensor 1)	Circuit continuity	Circuit High	I&II	P0032	HO2S Heater Control Circuit High (Bank 1 Sensor 1)
			Circuit Low	I&II	P0031	HO2S Heater Control Circuit Low (Bank 1 Sensor 1)
			Open Circuit	I&II	P0030	HO2S Heater Control Circuit (Bank 1 Sensor 1)
16	O2 sensor heater (Bank 2 Sensor 1)	Circuit continuity	Circuit High	I&II	P0052	HO2S Heater Control Circuit High (Bank 2 Sensor 1)
			Circuit Low	I&II	P0051	HO2S Heater Control Circuit Low (Bank 2 Sensor 1)
			Open Circuit	I&II	P0050	HO2S Heater Control Circuit (Bank 2 Sensor 1)
17	Secondary air injection system	Circuit continuity	Circuit High	/	P0414	Secondary Air Injection System Switching Valve "A" Circuit Shorted
			Circuit Low	I&II	P0413	Secondary Air Injection System Switching Valve "A" Circuit Open
			Open Circuit	/	P0413	Secondary Air Injection System Switching Valve "A" Circuit Open

18	Fuel pump	Circuit continuity	Circuit High	/	P0629	Fuel Pump “A” Control Circuit High
			Circuit Low	I&II	P0627	Fuel Pump “A” Control Circuit /Open
			Open Circuit	/	P0627	Fuel Pump “A” Control Circuit /Open
19	Power Relay	Circuit continuity	Circuit High	/	P0685	ECM/PCM Power Relay Control Circuit /Open
			Circuit Low	I&II	P0685	ECM/PCM Power Relay Control Circuit /Open
			Open Circuit	/	P0685	ECM/PCM Power Relay Control Circuit /Open
20	Fan Control Relay	Circuit continuity	Circuit High	/	P0692	Fan 1 Control Circuit High
			Circuit Low	I&II	P0691	Fan 1 Control Circuit Low
			Open Circuit	/	P0691	Fan 1 Control Circuit Low
21	Misfire Detected (Bank 1)	/	/	I&II	P0301	Cylinder 1 Misfire Detected
22	Misfire Detected (Bank 2)	/	/	I&II	P0302	Cylinder 2 Misfire Detected
23	Catalyst System Efficiency Below Threshold (Bank 1)	/	/	I&II	P0420	Catalyst System Efficiency Below Threshold Bank 1
24	Catalyst System Efficiency Below Threshold (Bank 2)	/	/	I&II	P0430	Catalyst System Efficiency Below Threshold Bank 2

25	HO2S Heater Control Bank 1 Sensor 2	Circuit continuity	Circuit High	II	P0038	HO2S Heater Control Circuit High Bank 1 Sensor 2
			Open Circuit	II	P0037	HO2S Heater Control Circuit Low Bank 1 Sensor 2
26	HO2S Heater Control Bank 2 Sensor 2	Circuit continuity	Circuit High	II	P0058	HO2S Heater Control Circuit High Bank 2 Sensor 2
			Open Circuit	II	P0057	HO2S Heater Control Circuit Low Bank 2 Sensor 2
27	O2 sensor (bi-nary/linear) signals (Bank 1 Sensor 2)	Circuit continuity	Circuit High	II	P0138	O2 Sensor Circuit High Voltage Bank 1 Sensor 2
			Circuit Low	II	P0137	O2 Sensor Circuit Low Voltage Bank 1 Sensor 2
		Circuit rationality	Perfor-mance/ Plausibility	II	P0139	O2 Sensor Circuit Slow Response Bank 1 Sensor 2
28	O2 sensor (bi-nary/linear) signals (Bank 2 Sensor 2)	Circuit continuity	Circuit High	II	P0158	O2 Sensor Circuit High Voltage Bank 2 Sensor 2
			Circuit Low	II	P0157	O2 Sensor Circuit Low Voltage Bank 2 Sensor 2
		Circuit rationality	Perfor-mance/ Plausibility	II	P0159	O2 Sensor Circuit Slow Response Bank 2 Sensor 2

VIII. ELECTRICAL SYSTEM DIAGRAM

