This manual should be considered a permanent part of the motorcycle and should remain with the motorcycle when resold or otherwise transferred to a new owner or operator. The manual contains important safety information and instructions which should be read carefully before operating the motorcycle.

BATTERY INITIAL CHARGING

1. BATTERY INITIAL CHARGING

Initial charging of the battery is required after filling electrolyte to improve the battery durability.

2. BATTERY INSTALLATION

- ① Fill the electrolyte to the battery.
- ② Leave the battery for 30 minutes.
- ③ Charge the battery by standard charging. This is necessary for reliability of the battery.
- ④ Install the battery to the motorcycle.
- *** STANDARD CHARGING TIME**: 1.0 A for 10 hours

⚠ CAUTION

Do not use the battery without the battery initial charging. Otherwise the battery service life may be shortened.

∕¶ WARNING

The motorcycle use a battery ignition system.

Do not permit to start or operate the motorcycle without the battery otherwise the electrical system will be damage. Always start or ride the motorcycle with the correct battery installed and connected.

FOREWORD

Thank you for choosing a Hyosung motorcycle. We at Hyosung have designed, tested and produced this motorcycle using the most modern technology avail- able to provide you with much happy, enjoyable, safe riding.

Motorcycling is one of the most exhilarating sports and to ensure your riding enjoyment, you should become thoroughly familiar with the information presented in this Owner's Manual before riding the motorcycle.

The proper care and maintenance that your motorcycle requires is out-lined in this manual.

By following these instructions explicitly you will ensure a long trouble-free operating life for your motorcycle. Your dealer has experienced technicians that are trained to provide your machine with the best possible service with the right tools and equipment.

Operative norm:

Q/370100JQH002—2018

All information, illustrations photographs and specifications contained in this manual are based on the latest product information available at the time of publication. Due to improvements or other changes, there may be some discrepancies between information in this manual and your motorcycle.

Hyosung reserves the right to make changes at any time, without notice and without incurring any obligation to make the same or similar changes to motorcycles previously built or sold.

Please note that this manual applies to all specifications for all respective destinations and explains all equipments. Therefore, your model may have different standard features than shown in this manual.



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IMPORTANT

BREAK-IN INFORMATION FOR YOURMOTORCYCLE

The first 1,600 km (1,000 miles) are the most important in the life of your motorcycle.

Proper break-in operation during this time will help ensure maximum life and performance from your new motorcycle.

Hyosung parts are manufactured of high quality materials, and manufactured parts are finished to close tolerances. Proper break-in operation allows the machined surfaces to polish each other and mate smoothly.

Motorcycle reliability and performance depend on special care and restraint exercise during the break- in period. It is especially important that you avoid operating the engine in a manner which could expose the engine parts to excessive heat.

Please refer to the BREAK-IN section for specific break-in recommendations.

WARNING / CAUTION / NOTE

Please read this manual and follow its instructions carefully.

To emphasize special information t he words \[W A RNI NG \] , \[CAUTION \] and \[NOTE \] have special meanings.

Information following these signal words should be carefully reviewed.

🛝 WARNING

The personal safety of the rider may be involved. Disregarding this information could result in injury to the rider.

? CAUTION

These instructions point out special service procedures or precautions that must be followed to avoid damaging the machine.

NOTE

This provides special information to make maintenance easier or important instructions clearer.

MARNING

Noise Control System (muffler assembly)

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED

Owners are warned that the law may prohibit:

- (a) The removal or rendering inoperative by any person other than for the purpose of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its any sale or delivery to the ultimate purchaser or while it is in use.
- (b) The use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

MAINTENANCE:

The exhaust system of this motorcycle requires no periodic maintenance.

The engine should be adjusted to the manufacture's specifications and the spark plug should be kept in good condition. Running the engine with incorrectly operating spark plug or misadjusted fuel injection system may cause permanent damage to the catalyst and to the noise control system.

CONSUMER INFORMATION

SAFE RIDING RECOMMENDATION FOR MOTORCYCLE RIDERS

Motorcycle riding is great fun and an exciting sport. Motorcycle riding also requires he/she to take some extra precautions to ensure the safety of the rider and passenger.

These precautions are:

∕¶ WARNING

- Before first use of the motorcycle read this owner's manual carefully to become familiar with the motorcycle features, and safety and maintenance requirements. Review all instructions, requirements and warnings.
- Before the rider's first use of the motorcycle, make sure that he / she is familiar with the location and operation of all controls, and has been instructed in the proper operation of the motor-cycle.
- For first use of the motorcycle, find a level, open area for the rider to use to become familiar with the operation of controls and the operating and handling characteristics of the motorcycle.

MARNING

- Before each use, perform daily inspections with the rider.
- Specific items to check are listed in the INSPECTION BEFORE RIDING section on page 58 of this owner's manual.
- Make sure the rider wears a helmet, eye protection, and protective clothing (gloves, leather or heavy cloth pants, long sleeved shirt or jacket, boots).
- Permit use only by two per-sons.
- This motorcycle is designed for use only by one rider and one passenger.
- Do not permit anyone to operate the motorcycle under the influence of alcohol or other drugs. It may cause damage to the motorcycle and alter handling characteristics.
- Observe periodic maintenance requirements.
 Your authorized dealer is trained and equipped to perform this ser- vice.
- Drain gasoline from the fuel tank prior to transporting the motorcycle.

 Caution the rider and others near the motorcycle not to get close to or touch any moving parts or any heated areas such as the engine and exhaust sys-tem.

\Lambda WARNING

Do not make any modifications to the motorcycle.

Modifications may make the motorcycle unsafe or illegal in your state.

∕¶ WARNING

The motorcycle is equipped with the side stand ignition interlock sys- tem.

If the transmission is in neutral or the side stand up, you can only start the engine by squeezing the clutch lever.

This side stand ignition interlock system prevents the motorcycle from being started with side stand down.

Make sure that the side stand ignition interlock system is working properly before riding.

CAUTION

The position lamp, meter lamp, tail lamp and license plate lamp on this motorcycle always comes on when the ignition switch is turned to the " \(\cap \)" position.

The head lamp is always lit when starting the engine.

MARNING

- Do not run the engine indoors or where there is little or no ventilation.
 Exhaust gases contain carbon monoxide, a potentially lethal gas that is colorless and odorless.
- Never leave the motorcycle running while unattended, even for a short time.

∕¶ WARNING

Always open the throttle gradually to prevent front wheel lifting. Failure to observe this precaution may result in loss of control and an accident.

∕N WARNING

Keep both hands on the hand- grips at all times when riding. Removing your hands from the handgrips reduces your ability to control the motorcycle and could result in an accident.

MARNING

While operating the motorcycle, the rider should keep both feet on the footrests at all times to avoid injuries resulting from accidents. Moving the rider's feet from the footrests reduces the rider's ability to control the motorcycle and could lead to an accident.

CAUTION

When storing for long period:

- 1. Supply enough the fuel in the fuel tank.
- 2. Remove the battery from the motorcycle.

↑ WARNING

Do not turn the ignition switch to its "%" position or the steering lock to "\(^\text{\text{\text{\text{o}}}}\)" position or the engine stop switch to its "\(^\text{\text{o}}\)" position while riding the motorcycle.

• WEAR A HELMET

∕¶ WARNING

Motorcycle safety equipment starts with a quality safety helmet. One of the most serious injuries that can happen is a head injury. ALWAYS wear a properly approved helmet. You should also wear suitable eve protection.

RIDING APPAREL

∕¶ WARNING

Loose clothing can be uncomfortable and unsafe when riding a motorcycle.

Use good quality motorcycle riding apparel when riding your motorcycle.

INSPECTION BEFORE RIDING

∕¶ WARNING

Review thoroughly the instruct ions in the "INSPECTION BEFORE RIDING" section of this manual.

Do not forget to perform an entire safety inspection to ensure the safety of the rider and its passenger.

• FAMILIARIZE YOURSELF WITH THE MOTORCYCLE

∕¶ WARNING

Your riding skill and mechanical knowledge from the foundation for safe riding practices.

We suggest that you practice riding your motorcycle in a non-traffic situation until you are thoroughly familiar with your machine and its controls.

Remember practice makes perfect.

KNOW YOUR LIMITS

🍂 WARNING

Ride within the boundaries of your own skill at all times. Knowing these limits and staying within them will help you to avoid accidents.

BE EXTRA SAFETY CONSCIOUS ON BAD WEATHER DAYS

∕¶ WARNING

Riding on bad weather days, especially wet ones, requires extra caution.

Braking distances double on a rainy day. Stay off of the painted surface marks, manhole covers and greasy appearing areas as they can be especially slippery. Use extreme caution at railway crossings and on metal gratings and bridges.

Whenever you have a doubt about road condition, slow down!

ACCESSORY INSTALLATION AND PRECAUTION SAFETY TIPS

There are a great variety of accessories available to **Hyosung** owners. **Hyosung** can not have direct control over the quality or suitability of accessories you may wish to purchase except genuine parts.

The addition of unsuitable accessories can lead to unsafe operating conditions. It is not possible for **Hyosung** to test each accessory on the market or combinations of all the available accessories, however, your dealer can assist you in selecting quality accessories and installing them correctly.

Use extreme caution when selectina and installing the accessories for your Hyosung. developed We have some general guidelines which will aid you when deciding whether, and how to equip vour motorcycle.

MARNING

Improper accessories or modifications can make your motorcycle unsafe and can lead to an accident.

Never modify the motorcycle with improper or poorly installed accessories. Follow all instructions in this owner's manual regarding accessories and modifications.

Use genuine Hyosung accessories or equivalent designed and tested for your motorcycle. Consult your dealer if you have any questions.

- 1. In case that additional aerodynamic weight or affecting accessories are installed, they should be mounted as low as possible, as close to the motorcycle and as near the center of gravity as is feasible. The mounting brackets and other attachment hardware should be carefully checked to ensure that it provides for a rigid, unmovable mount. Weak mounts can allow the shifting of the weight and dangerous, create а unstable condition.
- Inspect for proper ground clearance and bank angle. An improperly mounted load could critically reduce these two safety factors. Also determine that the "load" does not interfere with the operation of the suspension, steering or other control operations.
- Accessories fitted to the handle- bars or the front fork area can create serious stability problems. This extra weight will cause the motorcycle to be less responsive to your steering control. The weight may

- also cause oscillations in the front end and lead to instability problems. Accessories added to the machine should be as light as possible and kept to a minimum.
- 4. The motorcycle may be affected bγ lifting а condition or by an instability in cross winds or when being passed or passing large vehicles. Improperly mounted or poorly designed accessories can result in an riding unsafe condition, therefore caution should be used when selecting and installing all accessories.
- Certain accessories displace the rider from his or her normal riding position. This limits the freedom of movement of the rider and may limit his or her control ability.
- Additional electrical accessories may damage the existing electrical system. Severe overloads may damage the wiring harness or create a dangerous situation due to the loss of electrical power

- during the operation of the motorcycle.
- 7. When carrying a load on the motorcycle, mount it as low as possible and as close as possible to the machine. An improperly mounted load can create a high center of gravity which is dangerous and makes the motorcycle difficult handle. The size of "load" can also affect the aerodynamics and handling of the motorcycle.

Balance the load between the left and right side of the motorcycle and fasten it securely.

MODIFICATION

Modification of the motorcycle, or removal of original equipment may render the vehicle unsafe or illegal. Obey all applicable equipment regulations in your area.

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SERIAL NUMBER LOCATION

The frame and/or engine serial numbers are used to register the motorcycle. They are also to assist your dealer in terms of ordering parts or referring to special service information.

The frame number is also known as the VIN or Vehicle Identification Number.



The frame serial number is stamped on the right side of the steering head tube.



The engine serial number is stamped on the right upside of the crankcase assembly.

Metal nameplate is on the riser pipe of chassis, showing the main technical parameters, manufacturer and date of production of the motorcycle.

Please write down the numbers in the box provided below for your future reference.

Frame number :

Engine number:

NAMES OF EACH PARTS

Handle bar instrument



1	Left handle switches	6	Front brake fluid reservoir	
2	Clutch lever	7	Front brake lever	
3	Rear-view mirror	8	Throttle grip	
4	Instrument panel	9	Right handle switches	
5	Ignition switch	10	Fuel tank cap	

Left side view



11	Head lamp & Position lamp	19	Rear turn signal lamp
12	Front turn signal lamp	20	Drive chain
13	Exhaust bolt	21	Passenger footrests
14	Ignition coil (Front and rear)	22	Side stand
15	ECU fuse box	23	Footrests
16	Battery	24	Gearshift lever
17	Seat	25	Spark plug (Front)
18	Brake / Tail lamp	26	Front brake disk

Right side view



27	Rear brake disk	34	Engine oil filter
28	Spark plug (Rear)	35	Engine oil level lens
29	Air cleaner element	36	Engine oil drain bolt
30	Water tank	37	Engine oil filler plug
31	Antifreeze filler plug	38	Rear brake fluid reservoir
32	Draining bolt	39	Muffler
33	Rear brake pedal		

NOTE

" means the invisible parts.

CONTROLS

IGNITION SWITCH



The ignition switch is located on the dashboard below.

The ignition switch has three positions:

⊙"⊠"(OFF)POSITION

In this position, the ignition circuit is interrupted, a running engine stops, and a non-running engine will not start.

The key can be removed.

∕¶ WARNING

Turning the ignition switch to the "position while the motorcycle is moving can be hazardous.

⊙"○"(ON)POSITION

In this position, the ignition circuit is closed and the engine can be started.

The key cannot be removed from the ignition switch in this position.

NOTE

Start the engine immediately after turning the key to the "O" position, or the battery will lose power due to consumption by the lamp.

⊙"[†]"(LOCK)POSITION

When you leave the motorcycle, in order to prevent theft, please turn the steering handlebar to the left and insert and press the key on " 💢 " position, and rotate to the " $^{\circ}$ "

position. Operating correctly, the handlebar cannot move, the engine and electrical system does not work at this time. In this position, the key can be set aside. Do not press down when unlock, press and hold the key to turn the key from "\(^{\text{"}}\)" position.

№ WARNING

Do not operate the steering lock during riding.

Moving the motorcycle while the steering is locked can be hazard- ous. You could lose your balance and fall, or you could drop the motorcycle.

Stop the motorcycle and place it on the side stand if equipped before locking the steering. Never attempt to move the motorcycle when the steering is locked.

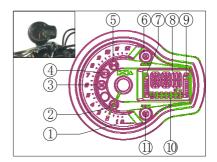
IGNITION KEY

Comes equipped with the two ignition keys.

Keep the spare key in a safe

place.

INSTRUMENT PANEL



MARNING

Operating the display while rid- ing can be hazardous. Removing a hand from the handlebars can reduce your ability to control the motorcycle.

Always keep both hands on the handlebars while riding.

CAUTION

When the ignition switch is turned to the "O" position, the meter lamp and display of the instrument panel will come on.

1) TACHOMETER

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

MARNING

Do not increase the engine rotational speed to the red range on the tachometer.

2 ENGINE WARNING LAMP

The yellow engine warning lamp " comes on and remains lit when the ignition switch is set to " position with the engine stopped as a test of the engine system operation.

As soon as the engine starts, the engine warning lamp " should go out.

If the engine system fails, the engine warning lamp " comes on and remains lit."

∕Î CAUTION

If the engine warning lamp does not come on when the ignition switch is set to "O" position with the engine stopped or fail to go out after the engine start, contact an authorized dealer.

CAUTION

Riding the motorcycle with the engine warning lamp lit after starting the engine can damage the engine and transmission.

Whenever the engine warning lamp is lit while riding, have your authorized dealer or a qualified mechanic inspect the engine system as soon as possible.

③ NEUTRAL INDICATOR LAMP

The green neutral indicator lamp will come on when the transmission is in neutral.

The lamp will go out when you shift into any gear other than neutral.

4 HIGH BEAM INDICATOR LAMP

The blue high beam indicator lamp will come on when the head lamp high beam is turned on.

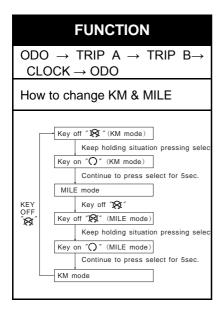
5 TURN SIGNAL INDICATOR LAMP

When the turn signals are being operated either to the

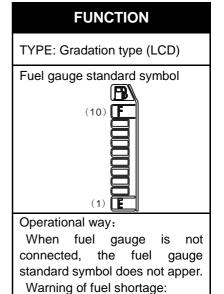
right or to the left, the green indicator will flash at the same time.

6 SELECT SWITCH

Use this switch to adjust the following:



7 FUEL METER



Fuel meter is LCD (Liquid Crystal Display) type, it indi- cates the remaining fuel amount in the fuel tank.

After the resistance enter the (1)

) blink at intervals of 1 sec.

level, Two of symbols (

The fuel meter displays all 10 seg- ments when the fuel tank is full.

The "F" (Full) mark indicates the fuel tank is full.

The "E" (Empty) mark indicates the fuel tank is empty or

nearly so.

When the remaining fuel is approximately 3.5 L, the indicator "E" of the last column and fuel warning lamp " blink.

Fill the fuel tank before the indica tor "E" of the last column and fuel warning lamp "La" blink.

The fuel tank capacity is 12.5 L.

? CAUTION

Before the indicator "E" of the last column and fuel warning lamp " " blink, you should add fuel to the fuel tank at the first opportunity to avoid running out of fuel.

∕!\ CAUTION

For checking the fuel meter, hold the motorcycle vertically and the ignition switch "O".

(8) SPEEDOMETER

The speedometer indicates the road speed in kilometers or miles per hour.

∕¶ WARNING

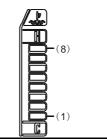
Obey the speed limit and traffic regulation at all times.

9 WATER TEMP GAUGE

FUNCTION

TYPE: Gradation type (LCD)

Water temp gauge standard symbol



Operational way:

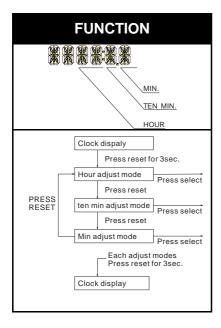
When water temp gauge is not connected, the fuel gauge standard symbol does not apper.

Warning of engine overheating:

After the resistance enter the (8) level, Two of symbols (H, blink at intervals of 1 sec.

10 CLOCK

The clock indicates 24-hour mode.



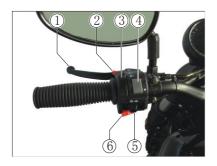
(11) RESET SWITCH

Use this switch to adjust the following:

■ In the Normalmode

Push it for	Adjustment			
1 seconds	Adjust brightness of the instrument panel display $(100\% \rightarrow 75\% \rightarrow 50\% \rightarrow 25\% \rightarrow 100\%)$			
3 seconds	Reset the trip meter to zero, while the display indicates trip meter A or B.			

LEFT HANDLE SWITCHES



① CLUTCH LEVER

The clutch lever is used for disengaging the drive to the rear wheel when starting the engine or shifting the transmission gear.

Squeezing the lever disengages the clutch.

! CAUTION

Use the clutch correctly.

Otherwise, the clutch may be worn quickly.

② "ID" "PASS" SWITCH

Press the "PASS" switch to oper ate the head lamp high beam for using when pass.

With the ignition switch in the "ON" position, push the "PASS"

switch to operate the head lamp high beam.

∕! CAUTION

This switch does not work when the dimmer switch is set to " $\equiv \mathbb{O}$ " position.

3DIMMER SWITCH

Change the direction of the head lamp light.

- "≣D": The head lamp high beam comes on. The high beam indicator lamp also comes on.
- "D": The head lamp low beam comes on.

MARNING

Set the dimmer switch " when other vehicle is running in front or against.

4 HAZARD WARNING SWITCH

" All four turn signa lamps and indicator lamp will flash simulta- neously when the switch is turn on with the ignition switch in "\cap"

position.

" ● ": The turn signal lamps and indicator lamp go off.

Use the hazard warning switch to warn other traffic during emergency parking or when your vehicle is in traffic hazard.

A CAUTION

Turn off the hazard warning switch promptly after use. If the motorcycle is ridden with the hazard warning switch turned on, it may confuse other drivers.

So, the battery service life may be shortened due to electrical consumption.

(5) TURN SIGNAL SWITCH

Using when left, right turn or change direction.

- " Position : Flash the left turn signal lamp.
- " Position : Flash the right turn signal lamp.
 - " △ " (OFF): Pushing the "△" position will stop the turn signal lamp to operate.

CAUTION

Always use the turn signals when you intend to change lanes or make a turn. Always be sure to turn the turn signal switch to the "" position after completing the turn or lane change.

Press the switch to operate the horn.

∕!\ CAUTION

Use the horn switch only in case of needing.

RIGHT HANDLE SWITCHES



① STARTER SWITCH " 👂 "

Use this switch to operate the starting motor.

With the ignition switch in the "O" position, the engine stop switch in the "O" position, and the transmission is in neutral, squeeze the clutch lever and the side stand up and push the starter switch to start the engine.

When the ignition switch is set to " O " position with the engine stopped, the meter lamp will come on and the needle of the speedometer will turn once to the end as a test of electric system operation.

Push the starter switch after the needle of the speedometer turn back to the rest position.

♠ CAUTION

- Release the starter switch immediately after the motorcycle has started.
- Do not engage the starting motor for more than five seconds at a time as it may over-heat the wiring harness and starting motor.

If the engine does not start after several attempts, check the fuel supply and ignition system.

CAUTION

Do not attempt to start the engine until the needle of the speedometer completes a full sweep and returns to the rest position otherwise the engine will start badly.

If the engine does not start or runs badly, turn the ignition switch to the """ position. After 8 seconds, turn the ignition switch on, allow the speedometer needle to complete its sweep and return to the rest position and then attempt to restart. This allows the ISC (Idling Speed Control) solenoid to be initialized.

CAUTION

The position lamp, meter lamp, tail lamp and license plate lamp on this motorcycle always comes on when the ignition switch is turned to the " " position.

The head lamp is always lit when starting the engine.

MARNING

The motorcycle is equipped with the side stand ignition interlock sys- tem.

If the transmission is in neutral or the side stand up, you can only start the engine by squeezing in the clutch lever.

This side stand ignition interlock system prevents the motorcycle from being started with the side stand down.

Make sure that the side stand ignition interlock system is working properly before riding.

② FRONT BRAKE LEVER

The front brake is applied by squeezing the brake lever gently toward the throttle grip.

The front brake is a powerful disk brake system. Do not brake excessively so as to cause the front wheel to lock up or skid. The brake lamp will come on when the lever is squeezed.

MARNING

Apply the brake lightly and with great care on slippery surfaces to avoid skidding.

③ THROTTLE GRIP

Engine speed is controlled by position of the throttle grip. Turn it toward you to increase engine speed. Turn it away from you to decrease the engine speed.

♠ WARNING

Avoid turning the throttle grip during braking.

4 ENGINE STOP SWITCH

"Position: Use in emergency or when motorcycle has fallen over to stop engine quickly."

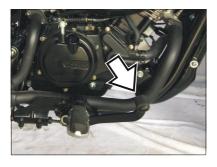
The ignition circuit is off. The engine cannot start or run.

"O" Position: The ignition circuit is on and the engine can start and run. Keep in this position for normal engine operation.

MARNING

Do not operate the engine stop switch into the " " " position while driving at one's pleasure.

REAR BRAKE PEDAL



Depressing the rear brake pedal will apply the rear brake.

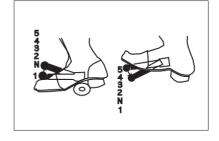
The brake lamp will be illuminated when the rear brake is operated.

MARNING

Apply the brake lightly and with great care on slippery surfaces to avoid skidding.

GEARSHIFT LEVER





The motorcycle is provided with a 5-speed gear transmission. which operates as shown.

To shift properly, squeeze the clutch lever and close the throttle at the same time you operate the gearshift lever.

Whenever a gear is selected, the gearshift lever will return to its nor- mal position ready to select the next gear.

Lift the gearshift lever to upshift

and depress the lever to downshift. Neutral is located between first and 2nd gear.

When neutral is desired, depress or lift the lever halfway between first and 2nd gear.

It is not possible to upshift or downshift more than one gear at a time.

When shifting from first to 2nd gear or 2nd gear to low, neutral will be automatically skipped.

Reduce the motorcyclespeed before down-shifting.

When down-shifting, the engine speed should be increased before the clutch is engaged.

This will preventunnecessary wear on the drive train components and the reartire.

CAUTION

When the transmission is in neutral, the green indicator lamp on the instrument panel will be lit.

However, even though the light is lit luminated. cautiously release the clutch lever slowly to determine whether the transmission is positively in neutral.

STAND



The motorcycle is equipped with the side stand ignition interlock system.

If the transmission is in neutral or the side stand up, you can only start the engine by squeezing the clutch lever.

This side stand ignition interlock system prevents the motorcycle from being started with the side stand down.

No.	Neutral s witch	Clutch lever	Side stand	Engine start
1	•	•	Δ	Possible
2	Δ	•	•	Possible
3	•	Δ	Δ	Impossible
4	Δ	•	Δ	Impossible
5	Δ	Δ	•	Impossible

NOTE			
On or Up			
Δ	Off or Down		

MARNING

Make sure that the side stand ignition interlock system is working properly before riding.

CAUTION

Park the motorcycle on firm, level ground to help prevent it from falling over.

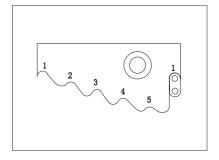
REAR SHOCK ABSORBER



To adjust the spring pre-load, turn the adjuster clockwise or count- er-clockwise to the desired position with the pin spanner.

Position 1 provides the softest spring pre-load and position 5 pro-vides the stiffest.

The motorcycle is delivered from the factory with its adjuster set on position 1.



MARNING

Unequal suspension adjustment can cause poor handling and loss of stability.

Adjust the right and left shock absorber to the same settings.

FUEL AND OIL AND ANTIFREEZE RECOMMENDATION

FUEL

Use unleaded gasoline with an octane rating of 92 or higher.

Unleaded gasoline can extend spark plug life and exhaust components life.

ACAUTION

Spilling gasoline can damage the painted surfaces.

Be careful not to spill any fuel when filling the fuel tank.

Wipe spilled gasoline up immediately.

🛕 WARNING

 When refueling, always shut the engine off and turn the ignition key to the "⋈" position.

Never refuel near the flames, sparks and heat sources.

 Do not overfill the fuel tank.
 Do not fill gasoline above the fuel tank entrance lower end.



To open the fuel tank cap, insert the ignition key into the cap lock and turn it clockwise. With the key inserted, pull back the fuel tank cap.

To close the fuel tank cap, push down the fuel tank cap until the locking pin click into position.

The key must be in the cap lock before installing the cap.

⚠ WARNING

Do not overfill the fuel tank. Stop adding fuel when the fuel level reaches the bottom of the filler neck. If you fill the tank beyond this level, fuel may overflow when it expands due to engine heat or heating by the sun.

MARNING

Gasoline is extremely flammable and toxic.

Always observe the following precautions when refueling your motorcycle.

- Never permit motorcycle refueling by anyone other than an adult.
- Refuel in a well ventilated area.
- Make sure the engine is " A "and avoid spilling fuel on a hot engine.
- Do not smoke, and make sure there are no open flames or sparks in the area.
- Avoid prolonged contact with skin and breathing of gasoline vapors.
- Keep children and pets away during refueling.

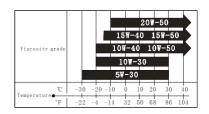
ENGINE OIL

Oil quality is a major contributor to your engine's performance and life. Always select good quality engine oil.

ENGINE OILSPECIFICATION

Classificati on system	Grade	Remarks
API	Over SL	
SAE	10W-30	

If a SAE 10W/40 motor oil is not available, select alternative according to the following chart.



Use the chart to select a viscosity rating based on temperature range in your area.

NOTE

In very cold weather [below -15°C (5F)], use SAE 5W/30 for good starting and smooth operation.

Using a premium quality four stroke motor oil will increase the service life of your motorcycle.

MARNING

- Don't mix the unrecommended oil.
 It could damage the engine.
- When refilling the oil, don't allow the dust to get inside.
- Wipe the spilled oil up immediately.
- Don't put the patch on the filler cap.
- It could disturb the oil to be provided and damage the engine.

Long engine life depends much on the selection of quality oil and the periodic changing of the oil.

Daily oil level checks and periodic changes are two of the most import- ant maintenances to be performed.

○ ENGINE OIL LEVELCHECK

Follow the procedure below to inspect the engine oil level.

- Start the engine and run it for a few minutes.
- 2.Stop the engine and wait three minutes.

🛝 WARNING

The engine and the components of the exhaust system become very hot and remain hot for some time after the engine has been stopped. Before handling these components, wear insulating gloves or wait until the engine and the exhaust system have cooled down.

3.Hold the motorcycle vertically using the stand.

NOTE

Place the motorcycle on firm and flat ground.

4.Inspect the engine oil level through the engine oil level lens

on the right side on the engine.

NOTE

Engine oil expands and oil level increases when the engine oil is hot.

Check and adjust engine oil level when the engine oil is not hot.

CAUTION

Be sure to use the engine oil specified in the FUEL AND OIL RECOMMENDATION section.

∕Î\ CAUTION

Operating the motorcycle with an incorrect amount of engine oil can damage your motorcycle.

Too little or too much engine oil can damage your engine.

Place the motorcycle on level ground.

Check the engine oil level with the engine oil level lens before each use of the motorcycle.

CAUTION

Never operate the motorcycle if the engine oil level is below the "Lower line mark (L)" in the engine oil level lens. Never fill the engine oil above the "Upper line mark (F)". Engine oil level being most suitable about 1 mm under the "Upper line mark (F)" of the engine oil level lens. In case of the engine oil pouring excessively. the engine output being made insufficient.

Be careful not to pour the engine oil excessively.

⊙ ENGINE OIL AND FILTER CHANGE

CAUTION

More frequent servicing may be performed on motorcycles that are used under severe conditions, inspect

- 1 Quantity of Engine oil.
- ② Pollution degree of Engine oil before riding the motorcycle an d then supplement and replace at any time to prevent damage of the engine.

Change the engine oil and filter, after first running 1,000 km and every running 4,000 km.

The engine oil should always be changed when the engine is hot so that the engine oil will be drained thoroughly from the engine.

The procedure is as follows.

ENGINE OIL CAPACITY	
Oil change	1,100ml
Oil and filter change	1,300ml
Engine overhaul	1,400ml

CAUTION

In case of the engine oil being over filled, the engine output will be reduced.

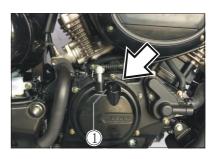
Be careful not to over fill the engine oil.

1. Hold the motorcycle vertically using the centerstand.

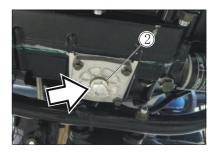
NOTE

Place the motorcycle on firm and flat ground.

- 2.Place a drain pan under the engine.
- 3.Remove the engine oil filler plug①.



4. Drain the engine oil by removing the engine oil drain plug ② located on the bottom of the engine.



MARNING

New and used oil can be hazardous.

Children and pets may be harmed by swallowing new or used oil.

Continuous contact with used engine oil has been found to cause skin cancer in laboratory animals. Brief contact with used oil may irritate skin.

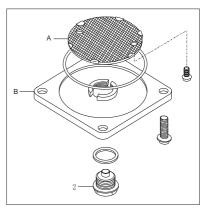
Keep new and used oil and used oil filters away from children and pets. To minimize your exposure to used oil, wear a long-sleeve shirt and moistureproof gloves (such as dishwashing gloves) when changing oil. If oil contacts your skin, wash thoroughly with soap and water. Launder any clothing or rags if wet with oil. Recycle or properly dispose of used oil and filters.

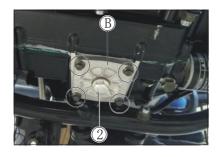
MARNING

- The engine oil temperature may be high enough to burn you when the drain plug is loosened. Wait until the drain plug is cool enough to touch with bare hands before draining oil.
- Do not touch the hot muffler, or the hot muffler can burn you.

⚠ CAUTION

Remove, inspect and clean the oil strainer A by removing the engine oil strainer cap B when replacing the Engine oil (specially, when first replacing).





5. The oil fine filter is located on the lower side of the front end of the engine. No need cleaning during the use of the vehicle. Please replace it if necessary.



CAUTION

When installing the new oil fine filter, verify that the sealing ring is in place

6. Reinstall the engine oil drain plug ② and tighten it securely.

At this time, insert the gasket necessarily.

7. Pour a fresh engine oil through the engine oil filler hole.

Approximately 1,100 ml of the engine oil will be required.

♠ CAUTION

Approximately 1,100 ml of the engine oil must be required when changing the engine oil only without replacing the engine oil filter.

∕!\ CAUTION

In case of the engine oil being over filled, the engine output will be reduced.

Be careful not to over fill the engine oil.

! CAUTION

Failure to use the correct oil can damage your motorcycle.

Engine damage may occur if you use the engine oil that does not meet company specifications.

Be sure to use the engine oil specified in the FUEL AND OIL RECOMMENDATION section.

- 8. Install the engine oil filler plug(1).
- 9. Start the engine and allow it idle for a few minutes. Check to see that no the engine oil is leaking from the engine oil filter and engine oil drain plug 2.
- 10. Check the engine oil level according to Engine Oil Level Check procedure.

∕ CAUTION

Engine oil leaks from around the engine oil filter cap or drain plug indicate incorrect installation or the "O"-ring / gasket damage.

If you find any leaks or are not sure that the engine oil filter cap/ drain plug has been properly installed, have the motorcycle inspected by your dealer or qualified mechanic.

ANTIFREEZE

∕N WARNING

This motorcycle engine is water cooling system. During motorcycle running, the antifreeze is high temperature and high pressure in the cooling system. So, it is strictly forbidden opening the radiator cap in this state, avoiding burn.

The antifreeze must be added in a timely manner and sufficient amount to prevent damaging the engine.

The antifreeze must be added after the engine is stopped and cooled.

∕¶ WARNING

Antifreeze belongs to chemicals, which include toxic substances. If the antifreeze gets into your eyes or skin, wash with plenty of water immediately.

WATER TANK



The right side of the front end of the vehicle fuel tank is provided with a white makeup water tank ① and a radiator cover ②.

The makeup water tank ① is provided with a water level scale line and the antifreeze level in the water tank shall be between the upper and lower scale lines. When the water level is lower than the lower limit, open the radiator cover ②, add special antifreeze to the water tank and do not add tap water or other liquid at will.

Antifreeze replacement

Carry out this work on about 10000 km running or when using the motorcycle for a year.

The operation is following:

1. Please stand the motorcycle on a level ground with stand, take a container and put under the draining bolt③, then remove the bolt③, so antifreeze is outflow.



2.Remove the exhaust bolt 4.



ACAUTION

For all antifreeze fully drained off from the system, remove the exhaust bolt ④, which need to use high-pressure air to blow the exhaust bolt connection on the left side of the engine cylinder head.

There is a seal gasket on the draining bolt ③. If the seal gasket is damaged, it must be replaced.

When drain completed, assemble and tighten the drain bolt ③.

3. Open the antifreeze radiator cover ②.

Slowly add 0.7L antifreeze into radiator cover using measuring glass, at same time observe the exhaust bolt ④ connection on the engine. When antifreeze outflow from the connection on the engine, plug in the exhaust bolt ④, continue to add liquid until all of 0.7L antifreeze is into the radiator.

4. Tighten the radiator cover, start the engine, repeated acceleration and deceleration of

the engine in place until the fan of cooling system turned on (or the needle of water temperature meter point to above the middle of the scale), then turn off the engine.

5.Until engine cool down and water temperature is at 80 degrees (middle scale line) or less, observe the antifreeze from the water tank. If the water level is low, add antifreeze until to the middle of upper and lower scale line. Then tighten the radiator cover.

ACAUTION

First add liquid antifreeze is about 0.75L, replacement and maintenance add at about 0.7 L.

Antifreeze level shall not exceed the upper scale line, nor below the lower scale line.

Antifreeze liquid level should be the water tank between two scale marks, if necessary, add or remove.

Antifreeze selection:

- 1. Antifreeze must not be mixed using.
- 2. The freezing point of antifreeze is normally lower than the local minimum ambient temperature 5-10 degrees.
- 3. The boiling point of antifreeze is more than 107 ° C.

Common fault of cooling system:

Check the makeup water tank, radiator, fan, water pump, rubber water pipe and antifreeze. If antifreeze boiling occurs during vehicle traveling, please find the reason:

- The boiling point of anti-freezing solution is low and unqualified. Replace anti-freezing solution;
- The antifreeze is too little. Please add antifreeze to the specified liquid level;
- There is accumulated gas in cooling system. Please loosen the exhaust bolts on the engine for venting.
- The cooling system is blocked. The radiator and the rubber water pipe should be checked, and the blockage should be eliminated.
- The engine water pump is damaged. Please repair or replace it.

- The fan does not work. It may be that the fan is damaged or the line connection is not good. Please replace the damaged fan or troubleshoot the line connection problem.
- 7. The radiator is damaged. Please repair or replace it.

RIDING TIPS

STARTING THE ENGINE

Before attempting to start the engine make sure :

- 1. Inspect every day once before riding the motorcycle.
- 2. The transmission is in neutral.
- 3. The ignition switch is in the "O" position.
- 4. The engine stop switch is in the "\O" position.
- 5. Moving the side stand to the fully upper position.
- 6. Squeeze the clutch lever.

∕¶ WARNING

Running the engine indoors or in a garage can be hazardous.

Exhaust gas contains carbon monoxide, a gas that is color- less and odorless and can cause death or severe injury.

Only run the engine outdoors where there is a fresh air.

? CAUTION

Running the engine too long without riding may cause the engine to overheat.

Overheating can result in dam- age to internal engine components and discoloration of exhaust pipes.

Shut the engine off if you can not begin your ride promptly.

∕¶ WARNING

The motorcycle are equipped with the side stand ignition interlock sys- tem.

If the transmission is in neutral or the side stand up, you can only start the engine by squeezing in the clutch lever.

This side stand ignition interlock system prevents the motorcycle from being started with the side stand down.

Make sure that the side stand ignition interlock system is working properly before riding.

CAUTION

- Release the starter switch immediately after the motorcycle has started.
- Avoid pressing the starter switch when the engine is running, or the starting motor damage.
- Do not engage the starting motor for more than five seconds at a time as it may over-heat the wiring harness and starting motor.

If the engine does not start after several attempts, check the fuel supply and ignition system. Push the starter switch to start the engine after the needle of the speedometer turn back to the rest position.

The engine warning lamp " "" "
1 comes on when the ignition switch is set to "" position with the engine stopped as a test of engine system operation.

As soon as the engine starts, this lamp should go out.

If the engine system fails, the yellow engine warning lamp " " 1 comes on and remains on.

CAUTION

The position lamp, meter lamp, tail lamp and license plate lamp on this motorcycle always comes on when the ignition switch is turned to the " " position.

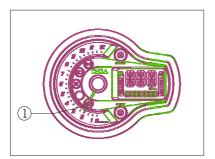
The head lamp is always lit when starting the engine.

CAUTION

Do not attempt to start the engine until the needle of the speedometer completes a full sweep and returns to the rest position otherwise the engine will start badly.

If the engine does not start or runs badly, turn the ignition switch to the """ position. After 8 seconds, turn the ignition switch to the "", allow the speedometer needle to complete its sweep and return to the rest position and then attempt to restart.

This allows the ISC (Idling Speed Control) solenoid to be initialized.



A CAUTION

If the engine warning lamp ① does not come on when the ignition switch is set to "〇" position with the engine stopped or fail to go out after the engine start, contact an authorized dealer.

∕¶ CAUTION

The engine warning lamp ① comes on and remains on when the ignition switch is set to "〇" position with the engine stopped as a test of engine system operation.

As soon as the engine starts, the engine warning lamp ① should go out.

If the engine system fails, the engine warning lamp ① comes on and remains on.

Riding the motorcycle with the engine warning lamp ① lit after starting the engine can damage the engine and transmission.

Whenever the engine warning lamp ① is lit while riding the motorcycle, have your authorized dealer or a qualified mechanic inspect the engine system as soon as possible.

STARTING OFF

MARNING

Sudden side winds, which can occur when being passed by large vehicles, at tunnel exits or in hilly areas, can upset your control.

Reduce your speed and be alert to side winds.

/N WARNING

- Riding this motorcycles at excessive speed increases your chances of losing control of the motorcycle. This may result in an accident. Always ride within the limits of your skills, your motorcycle, and the riding conditions.
- Removing your hands from the handlebars or feet from the footrests during operation can be hazardous.
 If you remove even one hand or foot from the motorcycle, you can reduce your ability to control the motorcycle.
- Always keep both hands on the handlebars and both feet on the footrests of your motorcycle during operation.

Squeeze the clutch lever and pause momentarily. Engage first gear by depressing the gearshift lever downward.

Turn the throttle grip toward you and at the same time release the clutch lever gently and smoothly. As the clutch engages, the motorcycle will start moving forward.

To shift to the next higher gear, accelerate gently, then close the throttle and squeeze the clutch lever simultaneously. Lift the gear- shift lever upward to select the next gear and release the clutch lever and open the throttle again.

Select the gears in this manner until fifth gear is reached.

MARNING

Do not turn the ignition switch to its "" or the steering lock to its lock " position or the engine stop switch to its " position while riding the motorcycle.

MARNING

Opening the throttle suddenly can be hazardous.

The front wheel can lift off the ground and cause loss of control of the motorcycle.

Always open the throttle gradually when you accelerate.

↑ WARNING

Downshifting while the motorcycle is leaned over in a corner may cause rear wheel skid and loss of control.

Reduce your speed and downshift before entering corner.

USING THE TRANSMISSION

The transmission is provided to keep the engine operating smoothly in its normal operating speed range. The gear ratios have been carefully chosen to meet the characteristics of the engine. The rider should always select the most suit- able gear for the prevailing conditions.

∕¶ WARNING

Downshifting when engine speed is too high can;

Cause the rear wheel to skid and lose traction due to increased engine braking, resulting in an accident; or force the engine to overdrive in the lower gear, resulting in engine damage.

∕¶ WARNING

Shifting incorrectly can be hazardous.

Engine and drive chain damage can occur if you do not shift correctly.

Slow down before downshifting and always release the throttle every time you shift gears.

RIDING ON HILLS

When climbing steep hills, the motorcycle may begin to slow down and show lack of power. At this point, you should shift to a lower gear so that the engine will again be operating in its normal power range. Shift gear rapidly to prevent the motorcycle from losing momentum.

When riding down a steep hill, the engine may be used for braking by shifting to a lower gear.

Be careful, however, not to allow the engine to overdrive.

∕N WARNING

Operating this motorcycle on steep hills can be hazardous.

Never operate this motorcycle on steep hills.

- time.
- 3. Downshift through the gears as road speed decreases.
- Select neutral with the clutch lever squeezed towards the grip (disengaged position) just before the motorcycle stops. Neutral position can be confirmed by observing the neutral indicator lamp.

MARNING

Inexperienced riders tend to underutilize the front brake. This can cause excessive stopping distance and lead to a collision. Using only the front or rear brake can cause skidding and loss of control.

Apply both brakes evenly and at the same time.

STOPPING AND PARKING

- Turn the throttle grip away from you to close the throttle completely.
- 2. Apply the front and rear brakes evenly at the same

⚠ WARNING

Hard braking while turning may cause wheel skid and loss of control.

Brake before you begin to turn.

\Lambda WARNING

Hard braking on wet, loose, rough, or other slippery surfaces can cause wheel skid and loss of control.

Brake lightly and carefully on slippery or irregular surfaces.

MARNING

Following another vehicle too closely can lead to a collision. As vehicle speeds increase, stopping distance increases progressively.

Be sure you have a safe stop- ping distance between you and the vehicle in front of you.

Park the motorcycle on a firm, flat surface where it will not fall over

MARNING

A hot muffler can burn you. The muffler will be hot enough to burn you for some time after stopping the engine.

Park the motorcycle where pedestrians or children are not likely to touch the muffler.

- 6. Turn the handlebar all the way to the left.
- 7. Turn the ignition key to the " position.
- 8. Remove the ignitionkey.

BREAK-IN

This section explains how import- ant proper break-in is to achieve maximum life and performance from your new motorcycle.

The following guidelines explain proper break-in procedures.

★MAXIMUM THROTTLE OPENING RECOMMENDATIONS

The table below shows the maxi- mum throttle opening recommendation during the break-in period.

Initial 800 km (500 miles)	Less than 1/2 throttle
Up to 1,600 km	Less than
(1,000 miles)	3/4 throttle

★AVOID CONSTANT LOW SPEED

Operating the engine at constant low speed (light load) can cause parts to glaze and not seat in. Allow the engine to

accelerate freely through the gears, without exceeding the recommended maximum limits. Do not, however, use full throttle for the first 1,600 km (1,000 miles).

★VARY THE ENGINE SPEED

The engine speed should be varied and not held at a constant speed.

This allows the parts to be "loaded" with pressure and then unloaded, allowing the parts to cool.

This aids the mating process of the parts. It is essential that some stress be placed on the engine components during break-in to ensure this mating process.

Do not, though, apply excessive load on the engine.

★ALLOW THE ENGINE OIL TO CIRCULATE BEFORE RIDING

Allow sufficient idling time after warm or cold engine start up before applying load or revving the engine. This allows time for the lubricating oil to reach all critical

engine components.

★BREAKING IN THE NEW TIRES

New tires need proper break-in to assure maximum performance, just as the engine does.

Wear in the tread surface by gradually increasing your cornering lean angles over the first 160 km (100 miles) before attempting maximum performance. Avoid hard acceleration, hard cornering, and hard braking for the first 160 km (100 miles).

MARNING

Failure to perform break-in of the tires could cause tire slip and loss of control.

Use extra care when riding on new tire. Perform proper break- in of the tire as described in this section and avoid hard acceleration, hard cornering, and hard braking for the first 160 km (100 miles).

★OBSERVE YOUR FIRST, AND MOST IMPORTANT1,000 km SERVICE

The 1,000 km (600 miles) service is the most important service your motorcycle will receive.

During break-in procedures, all of the engine components will have worn in and all of the other parts will have seated in.

All adjustments will be restored, all fasteners will be tightened, and the dirty engine oil and engine oil filter will be replaced.

Timely performance of the 1,000 km (600 miles) service will ensure optimum service life and performance from the engine.

ACAUTION

Service should may be performed before 1,000 km (600 miles) on motorcycle that are used under severe conditions.

? CAUTION

The 1,000 km (600 miles) service should be performed as outlined in the INSPECTION AND MAINTENANCE section of this Owner's Manual.

Pay particular attention to the [CAUTION] and [WARNING] in that section.

INSPECTION BEFORE RIDING

∕ WARNING

Failure to inspect the motorcycle before operating it can be hazardous.

Failure to perform proper maintenance can also be hazardous.

Failure to inspect and maintain your motorcycle increases the chances of an accident or equipment damage.

Always inspect your motorcycle each time you use it to make sure it is in safe operating condition. Refer to the INSPECTION AND MAINTENANCE section in this owner's manual.

\Lambda WARNING

Operating this motorcycle with improper tires, or with improper or uneven tire pressure can be hazardous.

If you use improper tires or improper or uneven tire pressure, you may lose control of the motorcycle.

This will increase your risk of an accident.

Always use the size and type tires specified in this owner's manual.

Always maintain proper tire pressure as described in the INSPECTION AND MAINTENANCE section.

MARNING

Operating this motorcycle with improper modifications can be hazardous.

Improper installation of accessories or modification of this motorcycle may cause changes in handling. In some situations, this could lead to an accident.

Never modify this motorcycle through improper installation or use of accessories.

MARNING

Overloading this motorcycle or carrying or towing cargo improperly can be hazardous.

Overloading or improper towing could cause changes in motorcycle handling which could lead to an accident.

Never exceed the stated load capacity for this motorcycle.

Check the condition of the motorcycle to help make sure that you do not have mechanical problems, or you might get stranded somewhere when you ride. Before riding the motorcycle, be sure to check the following items. Be sure your motor- cycle is in good condition for the personal safety of the rider and protection of the motorcycle.

MARNING

Checking maintenance items when the engine is running can be hazardous.

You could be severely injured if your hands or clothing gets caught in moving engine parts.

Shut the engine off when performing maintenance checks, except when checking the lamp, engine stop switch and throttle.

CAUTION

- The engine and muffler are too hot right after engine stopped, please be careful not to be burned.
- Don't inspect the engine indoor where there is little or no ventilation available. The exhaust gas is extremely poisonous.

WHAT TO CHECK	CHECK FOR :	
	 Smoothness 	
Steering	 No restriction of 	
Cicorning	movement	
	No play or looseness	
	 Correct play in the throttle cable 	
	 Smooth operation and 	
Throttle	positive return of the	
	throttle grip to the closed	
	position	
	 Correct lever play 	
Clutch	 Smooth and progressive 	
	action	
	 Proper operation 	
	Fluid level in the reservoir	
	to be above "LOWER"	
	line	
	 Correct pedal and 	
Brakes	lever play	
	No "sponginess"	
	 No fluid leakage 	
	 Brake pads not to be worn 	
	down to the limit line	
Suspension	Smooth movement	
	 Enough fuel for the 	
	planned distance of	
	operation	
Fuel	 Fuel hoses connected 	
	securely	
	 No damage to fuel tank or 	
	cap	

Tank cap closed securely		
WHAT TO CHECK	CHECK FOR:	
Gerashift lever	No damage leverSmooth operation	
Drive chain	 Correct tensionor slack Adequatelubrication No excessive wear or damage 	
Tires	Correct pressureAdequatetreaddepthNo cracks or cuts	
Engine oil	 Correct level and pollution degree of engine oil No engine oil leakage 	
Lamp	Operation of all lamps and indicators	
Horn	Correct function	
Rear-view mirror & Reflector	No dust or damage	
Engine stop	Correct function	
Side stand/ Ignition interlock switch	Proper operation	
	Boltsandnutsare tight	
General condition	 No rattle from any parts of motorcycle with the engine running 	

 No visible evidence of damage

PERIODIC MAINTENANCE

The chart indicates the intervals between periodic service in kilometers.

At the end of each interval, be sure to inspect, check, lubricate and ser- vice as instructed.

If your motorcycle is used under high stress conditions such as continuous full throttle operation, or is operated in a dusty climate, certain services should be performed more often to ensure reliability of the machine as explained in the maintenance section.

Your dealer can provide you with further guide lines.

Steering components, suspensions and require very special and careful servicing. For maximum safety we suggest that you have these items inspected and serviced by your authorized dealer or a qualified service mechanic.

MARNING

Improper maintenance or failure to perform recommended maintenance increases the chance of an accident or motorcycle damage.

Always follow the inspection and maintenance recommendations and schedules in this owner's manual.

Ask your dealer or a qualified mechanic to do the maintenance items marked with a pentagram (\bigstar).

You may perform the unmarked maintenance items by referring to the instructions in this section, if you have mechanical experience.

If you are not sure how to do any of the jobs, have your dealer or a qualified mechanic do them.

∕↑ WARNING

Running the engine indoors or in a garage can be hazardous.

Exhaust gas contains carbon monoxide, a gas that is colorless and odorless and can cause death or severe injury.

Only run the engine outdoors where there is fresh air.

? CAUTION

Using poor quality replacement parts can cause your motorcycle to wear more quickly and may shorten its useful life.

Use only genuine replacement parts or their equivalent.

NOTE

The MAINTENANCE CHART specifies the minimum requirements for maintenance. If you use your motorcycle under severe conditions, perform maintenance more often than shown in the chart. If you have any questions regarding maintenance intervals,

consult your dealer or a qualified mechanic.

★LUBRICATIONPOINTS

Proper lubrication is important for smooth and long life of each working part of your motorcycle and also for safe riding.

It is a good practice to lubricate the motorcycle after a long rough ride or after it gets wet in the rain or after washing it.

Major lubrication points are indicated as follows.

CAUTION

Lubricating switches can damage the switches. Do not apply grease and oil to the switches.

NOTE

"★": Ask your dealer or qualified mechanic to do the maintenance items marked.





① Clutch lever holder & Clutch cable	⑥Front brake lever holder
②Passenger footrests pivot	⑦Throttle cable
③Drive chain	®Speedo sensor
Side stand pivot and spring hook	
⑤Footrests pivot	

O - Motor oil, G - Grease

★ENGINE

First 1,000 km	Every 4,000 km	Every 8,000 km
Clean every 3,000 km - Replace every 12,000 km		2,000 km
Tighten	Tighten	ı
Inspect	Inspect	-
Tighten	Tighten	-
Clean	Clean	Replace
Inspect	Inspect	-
Replace every 4 years		
Replace	Replace	-
Replace	Replace	-
Replace every 10000km		
Inspect	Inspect	-
Inspect	Inspect	-
Inspect	Inspect	-
	1, 000 km Clean every 3,000 l Tighten Inspect Tighten Clean Inspect Repl Replace Replace Replace Inspect Inspect	1,000 km Clean every 3,000 km - Replace every 12 Tighten Tighten Inspect Inspect Tighten Clean Clean Inspect Inspect Replace every 4 year Replace Replace Replace Replace Replace every 1000 Inspect Inspect Inspect Inspect

★ CHASSIS

A OTTAGOTO			
Interval	First 1,000 km	Every 4,000 km	Every 8,000 km
Drive chain ★	Cleanandlubricateevery1,000km		000km
Brake ★	Inspect	Inspect	_
Brake hose ★	Inspect	Inspect	-
	Replace every 4 years		
Brake fluid ★	Inspect	Inspect	-
	Replace every 2 years		
Tire	Inspect	Inspect	-
Steering ★	Inspect	Inspect	-
Front forks ★	-	Inspect	-
Rear shock absorber ★	-	Inspect	-
Chassis nuts and bolts ★	Tighten	Tighten	-
General lubrication	Lubricate	Lubricate	_

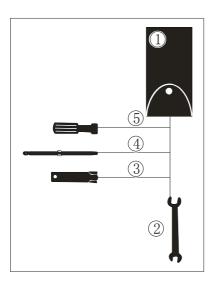
INSPECTION AND MAINTENANCE

TOOL

To assist you in the performance of periodic maintenance, a tool kit is supplied.

The tool kit is located under the front seat.

The tool kit consists of the following items.



No.	NAME
1	Tool bag
2	10 x 12 mm open end spanner
3	Spark plug wrench
4	Combination screw driver
5	Screw driver handle

ENGINE OIL

Check if there is leakage from the crankcase, oil hoses and oil cooler.

FUEL HOSE

Inspect the fuel hoses for damage and fuel leakage. If any defectare found the fuel hoses must be replaced.

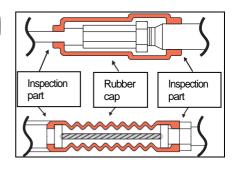
Replace the fuel hoses every 4 years.

FUEL

Check if there is leakage from the fuel tank, fuel pump, hoses and electric fuel injection system.

ANTIFREEZE

Check if there is leakage from the water tank, radiator cover, draining bolt, exhaust bolt and hose connection.



RUBBER CAPOF CABLES

Wipe them up with a cloth or towel when washing.

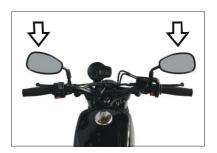


Always check the status of the cable's rubber cap assembly and must be assembled in the correct position.

Check the location of the cable's rubber cap after adjusting the throttle cable play.

REAR-VIEW MIRROR

Check if the mirror shows the rear and/or side views.



REFLECTOR

Check if the reflector is dusty or damaged.

EXHAUST PIPE AND MUFFLER

Inspect the exhaust pipe and muffler joint for loosening.

FRONT AND REAR SUSPENSIONS

Periodically check for the following:

- Keep the front brake lever pulled in and push down on the handlebars repeatedly to compress the front fork.
 - The fork should compress in a smooth movement and must show no traces of oil on the legs.
- Inspect the rear shock absorber for oil leakage and spring condition.
- Ensure that all components are properly tightened and check the front and rear suspension articulated joints for correct operation.
- Inspect whether the steering stem is well assembled while moving front fork up/downwards and/or forward/backward.

CAUTION

In the event of malfunction or if the suspension needs expert servicing, contact an authorized dealer.

BATTERY

○ INSPECTION OF BATTERY SOLUTION LEVEL

The battery is located under the seat.

MF (Maintenance Free) battery of airtight type is used for this motorcycle.

It is not necessary to inspect or supplement battery fluid.

However, have your dealer check the charging condition of the battery periodically.

CAUTION

- Never remove the airtight cover as it is a permanently sealed type battery.
- Keep separate from the motorcycle if not used for a long time to reduce electric discharge and electric leakage.
- Remove the
 ⊕ negative
 wire when storing the
 motorcycle.

MARNING

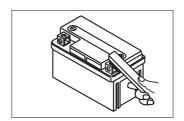
Never invert the battery cables. Ensure that the ignition switch is in position " " " before connecting or disconnecting the battery, otherwise some components might damage.

○ CHECK AND CLEAN OF BATTERYTERMINAL

Clean the battery terminal when it is dusty or rusted.

- Set the ignition switch "⋈" position.
- 2. Remove the seat.
- Check the battery lead wire and terminal.
- 5. Remove the battery.
- 6. Clean the terminal.
- 7. If there is white dust, clean it with warm water.
- Connect the battery wires and grease the terminal lightly.

When reinstalling the battery, be sure to connect the positive \oplus battery wire first, then connect the negative \ominus battery wire.



Make sure to initialize ECU as following when remounting the battery due to change the battery.

To initialize ECU, turn the ignition switch on and off alternately five times for 2 seconds.

O BATTERY INSTALLATION

The battery installation need particular attention to following points:

- 1. Remove the seat.
- Install the ⊕ positive terminal of the battery to face the right side of the motorcycle

into the battery case.

- Connect the ⊕ positive battery wire at the battery terminal.
- Put on the rubber cap at the ⊕positive terminal of the battery.
- 5. Connect the ⊖ negative battery wire at the battery terminal.
- Install the battery support and seat.

CAUTION

If connect the battery wire at the battery first and then install the battery into the battery case, the battery will be installed in the opposite direction [the \oplus positive terminal faces the right side of the motorcycle] because the length of the \oplus positive battery wire has no to spare.

If the battery is installed in the opposite direction, the battery can't be installed into the battery case completely and the electrical problem, such as a short circuit, may occur.

ACAUTION

- Keep the battery away from fires.
- When disconnecting the battery wire, be sure to remove the ⊖ negative battery wire first with the ignition switch" ※ " position, then remove the ⊕ positive battery wire.

When reinstalling the battery, be sure to connect the \oplus positive battery wire first, then connect the \ominus negative battery wire.

- Ensure the battery wires are fastened tightly.
- Incorrect installation of the battery will reverse the terminal position resulting in possible electrical system damage due to incorrect batterylead connection.

The red lead wire must go to the \oplus positive terminal and the black (or black with white tracer) lead wire must go to the \ominus negative terminal.

 Never charge a battery while still in the machine as damage may result to the battery or regulator / rectifier.

AIR CLEANER

The air cleaner is located inside the right engine.



If the air cleaner element has become clogged with dust, intake resistance will be increased, as a result decrease in output power and increase in fuel consumption.

lf ridina under severe conditions must be cleaned or replaced more frequently than maintenance schedule. Check air cleaner and clean the periodically element according following to the procedure.

A CAUTION

Never operate the engine with- out the element in position.

Operating the engine without the air cleaner element will increase engine wear. Always be sure that the air cleaner element is in excellent operational condition.

The life of the engine depends largely on this single component.

⚠ CAUTION

If the air cleaner element is polluted it will result in starting difficulty, engine output reduced, combustion efficiency decline, and sooty smoke (black smoke). At this time, inspect and clean the air cleaner element and con-firm.

To remove the air cleaner element:

- Remove the fixed bolts and remove the air cleaner cover.
- Remove the air cleaner element.



- Clean the air cleaner element for the following :
 - When the air cleaner element clean with the air gun, necessarily blow at the inside by com pressed air.
 - Carefully examine the air cleaner element for tears during cleaning. Replace it with a new one if it is torn.
 - ③ Assemble the element completely or damage severely the engine.
 - ④ Be careful not to allow water to go inside the air cleaner element.

- When the air cleaner element is not installed correctly, dust can go inside and severely damage the engine.
- Be careful not to allow water to go into the element while washing.

CAUTION

Before and during the cleaning operation, inspect the element for tears.

A torn element must be replaced. Be sure to install the element snugly and correctly, so that no incoming air will bypass it.

Remember, rapid wear of the piston rings and cylinder bore is often caused by a defective or poorly fitted element.

↑ WARNING

Operating the engine without the air cleaner element in place can be hazardous.

Never run the engine without the air cleaner element in place.



A CAUTION

More frequent servicing may be performed on the motorcycle that are used under severe conditions, also clean the air cleaner element when replacing the oil to prevent damage of the engine.

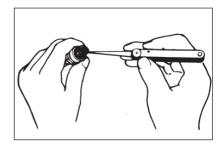
⊙ AIR CLEANER CHAMBER'S OIL DRAIN PLUG

Inspect the air cleaner chamber's oil drain plug and drain water and oil at the periodic maintenance interval.

The air cleaner chamber's oil drain plug is located beneath the air cleaner chamber case.

SPARK PLUG

Check the spark plug every time a scheduled maintenance service is performed.



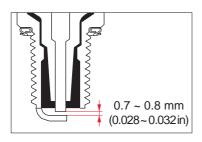
At regular intervals, remove the spark plugs and clean off any car- bon deposits or replace as required.

To remove and clean the spark plugs:

MARNING

Before carrying out the following operations, let the engine and the muffler cool down to ambient temperature, in order to avoid burns.

- 1. Disconnect spark plug caps.
- Remove all the dirt from the base of the spark plugs, then unscrew it and extract it from its seat, taking care that neither dust nor other substances enter the cylinder.
- Make sure that there are neither carbon deposits, nor corrosion marks on the electrode and on the central part: if necessary, clean them with the special cleaners for spark plugs, with an iron wire and/ or a metal brush.
- 4. Energetically blow some air, order to prevent the removed residues from getting into the engine. Change the spark plugs if it cracks shows on insulating material, corroded electrodes or excessive deposits.



- 5. Check the electrode gap with a thickness gauge. The gap must be 0.7 ~ 0.8 mm (0.028 ~ 0.032 in) if necessary, adjust it.
- Make sure that the washer is in good condition. Fit the washer and screw the spark plug finger-tight to avoid damaging the thread.
- Tighten using the spanner sup- plied with the tool kit.
 Screw in each spark plug by one half turn to compress the washer.

TIGHTENING TORQUE		
SPARK	15—20 N-m	
PLUG	(1.5—2.0 kgf-m)	

PLUG REPLACEMENT GUIDE		
Hotter type	CR7E	
Standard type	CR8E	
Colder type	CR9E	

CAUTION

The spark plug must be tightened firmly, otherwise the engine may overheat and severe damage may occur.

Use recommended spark plug only.

A spark plug of the wrong rating may shorten engine life and cause loss of performance.

8. Fit the spark plug caps properly, to prevent it coming off due to engine vibration.

IDLING ADJUSTMENT

This engine features EFI (electronic fuel injection).

The idle speed is not adjustable.

A CAUTION

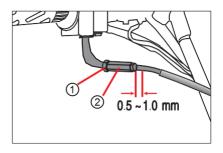
Do not attempt to make any adjustment to the idle speed as it may permanently damage the EFI system.

THROTTLE CABLE PLAY ADJUSTMENT

There should be $0.5 \sim 1.0$ mm $(0.02 \sim 0.04$ in) free play in the throttle cable.

If this is not the case, proceed as follows:

- Position the motorcycle on the stand.
- Withdraw the protection.
- Loosen the lock nut ①.



- Rotate the adjuster ② until achieving the specified free play.
- When finished, tighten the lock nut ① and check free play again.
- Refit the protection.

MARNING

Inadequate throttle cable play can cause engine speed to rise suddenly when you turn the throttle grip. This can lead to loss of rider control.

Adjust the throttle cable play so that engine idle speed does not rise due to throttle grip movement.

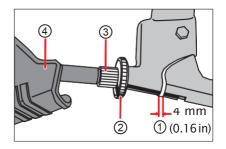
MARNING

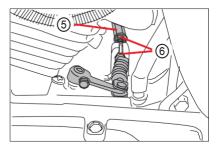
When finished, turn the handle- bars to make sure its movement does not affect the engine idle rpm and check that the throttle grip when opened and then released - returns smoothly to the closed position.

CLUTCH CABLE ADJUSTMENT

At each maintenance interval, adjust the clutch cable play by means of clutch cable adjuster.

The cable play should be 4 mm (0.16 in) as measured at the clutch lever holder before the clutch begins to disengage.





- ①Clutch lever play
- 2Clutch lever adjuster lock nut
- 3Clutch lever adjuster
- 4 Rubber boot
- **©Clutch** cable adjuster
- ⑥Clutch cable adjuster lock nut

If you find the play of the clutch lever incorrect, adjust it in the following way:

⊙ CLUTCH CABLE PLAY ADJUSTMENT

- Abasis adjustment be allowed by the clutch lever adjuster ③.
- Uncover the rubber boot
- Loosen the lock nut ② counter-clockwise.
- Turn the clutch lever adjuster ③in or out to acquire the specified play.
- After end of adjustment, tighten the lock nut ② clockwise fully and cover the rubber boot ④.
- If not adjust by the clutch lever adjuster ③, adjust by the clutch cable adjuster ⑤.
- Loosen the clutch cable adjuster lock nut ®.
- Turn the clutch cable adjuster sin or out to acquire the specified play.
- After end of adjustment, tighten the lock nut ⑥.

 The clutch cable should be lubricated with a light weight oil when- ever it is adjusted.

Clutch cable play

4 mm (0.16 in)

DRIVE CHAIN

The chain may require more frequent adjustment that it is with periodic maintenance depending upon your riding conditions.

Check the chain every 1,000 km.

MARNING

Riding with the chain in poor condition or improperly adjusted can lead to an accident.

Inspect, adjust, and maintain the chain properly before each ride, according to this section.

⊙ INSPECTING THE DRIVE CHAIN

When inspecting the chain, look for the following:

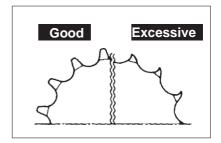
- Loose pins
- Damaged rollers
- Dry or rusted links
- Missing O-ring seals
- Kinked or bindinglinks
- Excessive wear
- Improper chain adjustment

If you find something wrong with the drive chain condition or adjustment, correct the problem if you know how. If necessary, consult your authorized dealer.

Damage to the drive chain means that the sprockets may also be dam-aged.

Inspect the sprockets for the following:

- Excessively worn teeth
- Broken or damagedteeth
- Loose sprocket mounting nuts



If you find any of these problems with your sprocket, consult your dealer.

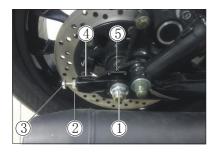
CAUTION

The two sprockets should be inspected for wear when a new chain is installed and replace them if necessary.

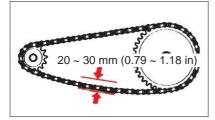
O DRIVE CHAIN ADJUSTMENT

Adjust the drive chain slack to the proper specification. The chain may require more frequent adjustments than periodic maintenance schedule depending upon your riding conditions.

Chain adjust in the following way.







- 1. Place the motorcycle on the center stard.
- 2. Loosen the rear axle nut ①.
- Loosen the drive chain adjuster lock nuts ②, right and left.

- Adjust the slack in the drive chain by the chain adjuster
 right and left, as turning the drive chain adjusting nut 3 clockwise or counter-clockwise.
- 5. For alignment of the front wheel and rear wheel, there are reference mark⑤ on the same position, right and left.

Aligning and adjusting the slack in the drive chain to 20 ~ 30 mm (0.79 ~ 1.18 in), retighten the right and left drive chain adjuster lock nut ② and the rear axle nut① securely and perform a final inspection.

A CAUTION

The drive chain for this motor- cycle is made of the special material.

The chain should be replaced with a 428HO for motorcycle.

Use of another chain may lead to premature chain failure.



The drive chain should be inspected every time before riding.

Excessive chain slack could cause the chain to come off the sprockets and result in accident or serious engine damage.

∕¶ WARNING

Be careful not to touch the muffler when it is hot: a hot muffler can burn you.

○ DRIVE CHAIN CLEANING AND OILING

This drive chain has special "O"-rings.

Clean and oil the chain periodically, as follows:

 Clean the chain with kerosene. If the chain tends to rust, the interval must be shortened. Kerosene is a petroleum product and will provide some lubrication as well as cleaning action. Kerosene can be hazardous. Kerosene is flammable. Children or pets may be harmed from contact with kerosene.

Keep flames and smoking materials away from kerosene. Keep children and pets away from kerosene.

If swallowed, do induce vomiting. Call a physician immediately. Dispose of used kerosene properly.

A CAUTION

Cleaning the chain with gasoline or commercial cleaning solvents can damage "O"-rings and ruin the chain.
Clean the drive chain with kerosene only.

2. After thoroughly washing the chain and allowing it to dry, oil the links with a chain lube or an equivalent.



⚠ CAUTION

Some drive chain lubricants contain solvents and additives which could damage the "O"-rings in your chain.

Use chain lube or an equivalent that is specifically intended for u se with the "O"-ring chains.

BRAKES

The motorcycle utilizes front and rear disk brakes.

Properly operating the brake systems are vital to safe riding. Be sure to perform the brake inspection requirements as schedules.

The brakes should be inspected at periodic inspection by your authorized dealer.

∕¶ WARNING

Failure to properly inspect and maintain your motorcycle brake systems can be hazardous.

Improper maintenance of the brakes increases your chances of having an accident.

Be sure to inspect the brakes before each use of the motorcycle according to the INSPEC TION BEFORE RIDING section.

Always maintain your brakes according to the MAINTENANCE SCHEDULE.

MARNING

Operating the motorcycle in harsh condition can be hazardous if you do not inspect brake wear often.

Operating in mud, water, sand, or other extreme conditions can cause accelerated brake wear. This could lead to an accident.

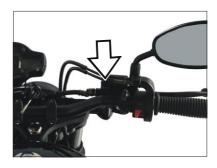
If you operate your motorcycle under these conditions, the brakes must be inspected more often than recommended in the MAINTENANCE SCHEDULE.

⊙ BRAKE FLUID

Be sure to check the brake fluid level in the master cylinder. If the level was found to be lower than the lower mark holding the motorcycle upright, inspect the brake pad's wear condition.

If the brake pad's wear condition is good, replenish with the proper brake fluid that meets dealer requirements.

Front Brake



Rear Brake



As the brake pads wear, the fluid level will drop to compensate for the new position of brake pads.

Replenishing the master cylinder to considered normal periodic maintenance.



Brake fluid may be harmful if swallowed or if it comes in con- tact with skin or eves. Contact doctor vour immediately if brake fluid is swallowed and vomiting. If brake fluid gets into the eyes or in contact with the skin. flush thoroughly with plenty of water.

? CAUTION

This motorcycle uses glycol-based brake fluid.

Do not use or mix different types of brake fluid, otherwise serious damage will result in the brake system.

Use Only DOT4 brake fluid.

Do not spill any brake fluid on painted or plastic surfaces as it will damage the surface severely.

Never use any brake fluid that has been stored in a used or unsealed container. Never reuse brake fluid left over from the last servicing and stored for long period as it absorbs moisture from the air.

Be careful that water or dust does not enter the brake fluid reservoir when refilling.

⊙ BRAKE PADS

Inspect the front and rear brake pads to determine whether or not the friction pads are worn down to the grooved limit line. If a pad is worn to the grooved limit line it must be replaced with a new one by your authorized dealer or qualified service mechanic.

The rate at which brake pads will wear depends on motorcycle usage, riding style and road surface condition.

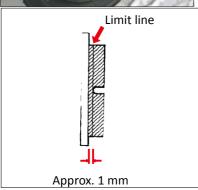
Front Brake



Rear Brake







Inspect every day in the following point at the brake system.

- ① Brake fluid leakage of the front and rear brake system.
- ② Leak or damage of the brake hose.
- ③ Operating of the brake lever and pedal.
- Wear of the front and rear brake pads.



The front and rear brake system requires the brake hose or the brake fluid to be replaced according to periodic inspection chart by your authorized dealer for safety as they operate at high pressure.

MARNING

Riding with worn brake pads will reduce braking will performance and increase vour chance of accident. having Inspect brake pad wear before each use. Ask your dealer or qualified mechanic to replace brake pads if any pad is worn to the limit.

MARNING

If brake pads are allowed to wear down to the metal substrate. metal-to-metal contact with the brake disk would lead to noise and the brake caliper sparking; this would result in loss braking and brake disk damage, causing dangerous riding condition.



Replacing only one of the two brake pads can be hazardous.

Replacing only one brake pads can result in uneven braking action.

Replace both pads together.

? CAUTION

After replaced the front or rear brake pads, squeeze / depress and release several times the brake lever/ pedal so that it is setting at the original place.

Then, check that the brakes are operating correctly.

⊙ BRAKE DISK INSPECTION

Check the brake disk for damage or cracks.

• FRONT BRAKE FLUID SUPPLY

- Place the motorcycle on a level surface and keep the handlebars straight.
- 2. Clean the front brake fluid reservoir around not to

- allow dust to get inside of it.
- 3. Loosen the screws and open the cap.
- 4. Replenish with brake fluid to the upper line.

NOTE

Therecommended brakefluid: DOT4

? CAUTION

- Don't replenish with brake fluid over the limit line. It will leak out of the brake fluid reservoir.
- Be careful not to allow dusts or water to go inside when it is replenished.
- Prohibit the use of non recommended brake fluid
- Brake fluid can damage severely the plastics or rubbers. When it is spilt on the parts, wipe them up immediately.
- 5. Fasten the cap.

• REAR BRAKE FLUID SUPPLY

- 1. Place the motorcycle on a level surface and keep the handlebars straight.
- Clean the rear brake fluid reservoir around not to allow dust to get inside of it
- 3. Turn the cap to the counter-clock- wise.
- 4. Replenish with brake fluid to the upper line.

NOTE

The recommended brakefluid: DOT4

Fasten the cap.

• REAR BRAKE LAMP SWITCH

The rear brake lamp switch is located inside the right footrest bracket.

Move the switch up or down to adjust it until the switch operates and turns on the brake lamp after the brake pedal begins to be depressed. Inspect the tire pressure and the tire thread depth periodically. Inspect frequently the tire pressure for the safety and the tire life.

∕¶ WARNING

Failure to follow these warnings may result in an accident due to tire failure. The tires on your motorcycle form the crucial link between your motorcycle and the road.

Follow these instructions;

- Check tire condition and pressure, and adjust pressure before each ride.
- Avoid overloading your motor cycle.
- Replace a tire when worn to the specified limit, or if you find damage such as cuts or cracks.
- Always use the size and type of tires specified in this owner's manual.

TIRE

○ TIRE PRESSURE

Insufficient air pressure in the tires not only hasten tire wear but also seriously affects the stability of the motorcycle.

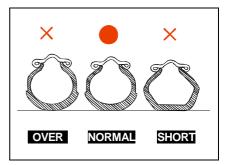
Under-inflated tires make smooth cornering difficult and over-inflated tires decrease the amount of tire in contact with the ground which can lead to skids and loss of control.

Be sure that the tire pressure is within the specified limits at all times.

Tire pressure should only be adjusted when the tire is cold.

If you see the problem with the tire, adjust the pressure with the pressure gauge.

TIRE PRESSURE	NORMAL RIDING	
(COLD INFLATION)	SOLO RIDING	DUAL RIDING
FRONT	2.00 kgf/cm²	2.00 kgf/cm²
	200 kPa	200 kPa
	29.0 psi	29.0 psi
REAR	2.00 kgf/cm²	2.00 kgf/cm²
	200 kPa	200 kPa
	29.0 psi	29.0 psi



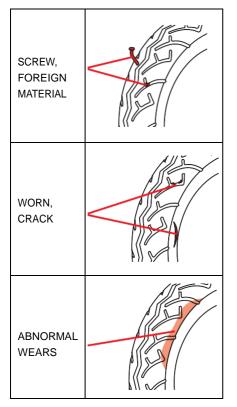
CAUTION

If there are some problem with the tire pressure or cracks and cuts, it will decrease the riding stability and lead to flat tire.

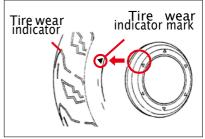
O CRACKS AND CUTS

Check if

- 1) There are visible cracks and cuts.
- 2) There are abnormalwears.



TIRE TREAD CONDITION



Operating the motorcycle with excessively worn tire will decrease riding stability and can lead to loss of control.

Inspect storage of tire thread's depth by the \[\text{tire} \] wear indicator \[\] .

Replace the front and rear tires at once when appear the [tire wear indicator].

ACAUTION

The standard tire on motorcycle is:

120 / 80 - 16 for front, and 150 / 80 - 15 for rear.

The use of a tire other than standard may cause trouble. It is highly recommended to

It is highly recommended to use the standard tire supplied by dealer.

REAR AXLE NUT

Inspect the rear axle shaft and jointing nut for loosening.

• TIRE REPLACEMENT

◆ FRONT TIRE REPLACEMENT

- 1. Place the motorcycle on the center stand.
- Remove the brake caliper from the front fork by removing the mounting bolts 1.



A CAUTION

Never squeeze the front brake lever with the caliper removed. It is very difficult to force the pads back into the caliper assembly and may result brake fluid leak- age.

3. Loosen the front axle pinch bolt ②.

- 4. Loosen the front axle shaft 3.
- Place carefully a jack or block under the engine and raise until the front wheel is slightly off the ground.



CAUTION

Improper jacking may cause damage to the frame or engine. Do not apply the jack head to the engine oil strainer cap when jacking up the motorcycle.

- 6. Draw out the front axle shaft ③.
- Pull out the front wheel assembly forward.
- 8. To reinstall the front wheel assembly, reverse the sequence as described.

REAR TIRE REPLACEMENT

1. Place the motorcycle on the

center stand.

Remove the chain case ②
 by loosening the two bolts ①.

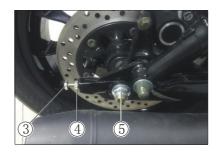


Place a jack or block under the swing arm to lift the rear wheel slightly off the ground.

⚠ CAUTION

Improper jacking may cause damage to the frame or engine.

- Loosen the drive chain adjuster lock nuts ③ and chain adjusting nuts ④, left and right, and disengage the drive chain from the rear sprocket.
- 5. Loosen the rear axle nut (5).





WARNING

A hot muffler can burn you.
The muffler will be hot enough to burn you for some time after stopping the engine.
Wait until the muffler cools to avoid burns.

 Loosen the rear shock absorber lower bolts 6, left and right, and draw out the rear axle shaft 7 with the rear wheel push to the bottom.



- 7. Pull out the rear wheel assembly rearward.
- 8. To replace the rear wheel assembly, reverse the complete sequence listed

BULBS

∕¶ WARNING

Keep fuel and other flammable substances away from electric components.

? CAUTION

Before changing a bulb, set the ignition switch to position "" and allow a few minutes for the bulb to cool down.

Wear clean gloves or use a clean, dry cloth to handle the new bulb.

Do not put your fingerprints on the bulb, as this may lead to overheating and failure.

If you have handled the bulb with bare hands, clean it with alcohol to avoid any damage.

DO NOT PULL ON THE WIRES.

NOTE

Before changing a bulb, check the fuses.

• INSPECTION OF LAMPS

Check if the position lamp, meter lamp, tail lamp and license plate lamp work well when the ignition switch was turned to the "○" position.

> Check if the head lamp work well when starting the engine.

- Check if the brake lamp work well when the front brake lever or rear brake pedal was operated after the ignition switch was turned to the "O" position.
- Check if the turn signal lamp work well when the turn signal switch was operated after the ignition switch was turned to the "O" position.
- Check if the head lamp, tail lamp, turn signal lamp and brake lamp are dusty or dam aged.

A CAUTION

The position lamp, meter lamp, tail lamp and license plate lamp on this motorcycle always comes on when the ignition switch is turned to the "\times" position. The head lamp is always lit when starting the engine.

• REPLACEMENT OF THE LAMP

Requirement electric power of the lamp shown in the following chart. When replace the damaged lamp, always use the equal capacity.

The use of a lamp other than specification may cause the electric system or the lamp to damage.

NAI	MES	CAPACITY
Head Iamp HI / LO Position	12V - H4 : 60 / 55W x 1	
	Position	12V - W5W x 1
Brake / Tail lamp		LED type
Turn signal lamp		12V - R10W x 4
License plate		12\/ ED type
lamp		12V – LED type

*** LED**: Light Emitting Diode

CAUTION

Using a lamp bulb with the wrong wattage rating can cause electrical system damage or shorten bulb life. Always use the specified

• CHANGING THE HEAD LAMP BULB

lamp bulb.

- Remove the head lamp assembly from the head lamp housing by loosening the two screws, right and left, and unhook the hook on the top of the head lamp housing.
- Disconnect the connector from the head lamp assembly.
- 3. Remove the rubber cap.
- 4. Unhook the bulb holder spring and remove the bulb.
- 5. To install the head lamp, reverse the above sequence.

• CHANGING THE TURN SIGNAL LAMP BULB

- 1. Remove the lens by pushing the groove ① of the turn signal lamp housing using a small flat screw driver.
- 2. Turn the bulb while pushing counter-clockwise and pull it out of the socket.
- Insert the new bulb into the socket and turn it while pushing clockwise.
- Install the lens by fitting the groove ② of the lens in the groove ① of the turn signal lamp housing.

? CAUTION

Don't use excessive force on the lens.

It may cause a crack of the lens.

⊙ CHANGING THE BRAKE/TAIL / LICENSE PLATE LAMP BULB

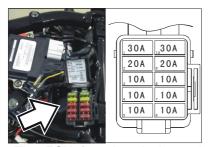
The motorcycle brake / tail / license plate lamp is LED (Light Emitting Diode) type.

If any abnormal condition are found, replace the brake / tail lamp assembly.

• FUSE BOX

♦ ECU FUSE BOX





The ECU fuse box is located under the seat.

The fuses are designed to open when the circuit overload exists in individual electrical system circuits.

If any electrical system fails to work, then the fuses must be checked.

- protects the rectifier / regulator and ignition switch circuits
- 20A ECU / M.RELAY fuse protects all electrical circuits including the ECU.
- 10A HEAD L. / METER fuse protects the head lamp low beam and instrument panel circuits.
- 10A HEAD H. fuse protects the head lamp high beam circuits.
- 10A S. STAND / STARTER / CLUTCH fuse protects the side stand switch, starter switch and clutch lever switch circuits.
- 10A POSITION / TAIL / LICEN. fuse protects the position lamp, tail lamp and license plate lamp circuits.
- 10A TURN / STOP / HORN / S.SENS fuse protects the turn signal lamp, brake lamp, horn and speedo sensor circuits.
- 30A SPARE / 20A SPARE / 10A SPARE fuse are each spare fuse.

30A REC. / REG. / IGN fuse

TROUBLESHOOTING

This troubleshooting guide is provided to help you find the cause of some common complaints.

? CAUTION

Failure to troubleshoot a problem correctly can damage your motorcycle.

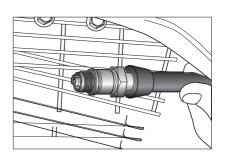
Improper repairs or adjustments may damage the motorcycle instead of fixing it. Such damage may not be covered under warranty.

If you are not sure about the proper action, consult your dealer about the problem.

★WHEN THE ENGINE REFUSES TO START

O IGNITION SYSTEM CHECK

 Remove the spark plug and reattach it to the spark plug lead.



2. Put the engine stop switch in the "O" position and the ignition switch in the "O" position. Holding the spark plug base firmly against the engine, the trans- mission in neutral, the side stand up, the clutch disengaged and push the electric starter switch. If the ignition system is operating properly, a blue spark should jump across the spark plug gap.

When the ignition switch is set to "O" position with the engine stopped, the meter lamp will come on and the needle of the speedometer will turn once to the end as a test of electric system operation.

Push the starter switch after

the needle of the speedometer turn back to the rest position.

- 3. If there is no spark, clean the spark plug.
 - Replace it if necessary.
 Retry the above procedure with the cleaned spark plug or new one.
- 4. If there is still no spark, consult yourdealerforrepairs.

MARNING

Performing the spark test improperly can be hazardous. You could get a high voltage electrical shock or an explosion if you are not familiar with this procedure.

Do not perform this check if you are not familiar with the procedure.

Keep the spark plug away from the spark plug hole during this test. Do not this test if you have a heart condition or wear a pacemaker.

⊙INSPECTION OF OIL SYSTEM

- Place the engine flameout 1. switch in "Q"position and ignition the switch in"()"position. There is the "click" of pull-in from the oil pump relay and there is the "buzz" of rotation from the oil pump in the oil tank. If not start the vehicle immediately. will be "click" disconnection in oil pump relay. If there is no above phenomenon, check the circuit system"
- Inspection of oil pressure: If 2. the oil pump relay and the oil pump are normal but the engine cannot start, check the oil pressure of the fuel system. Access the oil pump gauge in the oil system, place the engine flameout switch in the "O"position the ignition switch and in" () "position, and check the oil pressure indication of the oil pump gauge. The normal value is above 200kPa. If this value is lower. check the leakage in oil system.

★ENGINE STALLING

- 1. Check the fuel supply in the fuel tank.
- Check the ignition system for intermittent spark.
- 3. Check the idle speed.

ACAUTION

When occur any trouble, the best way is to consult your dealer for repairs.

TRANSPORT

MARNING

Before transporting the motorcycle, it is necessary to empty the fuel tank completely, making sure that it is completely dry.

During transport, the motorcycle must be firmly secured in an upright position to avoid fuel and oil leaks.

★ DRAINING THE FUEL TANK

♠ WARNING

Keep the fuel tank away from fires.

Allow some time for the engine and muffler to cool down completely.

Fuel vapors are harmful to human health.

Ensure the area is well ventilated before proceeding. Do not inhale fuel vapors.

Do not smoke, nor use naked flames.

- Place the motorcycle on the stand on firm and level ground.
- Stop the engine and wait until it has cooled down.
- Prepare a container large enough to hold the fuel in the tank and place it on the floor on the left side of the motorcycle.
- Remove the fuel tank cap.
- Drain fuel using a manual pump or similar system.

Do not damage the fuel tank assembly (fuel level gauge accommodated inside the tank).

∕ WARNING

Refitthe fueltank cap after draining all fuel.

CLEANING PROCEDURE

A thorough cleaning of your motor- cycle is a necessary part of maintenance and will help keep your motorcycle looking and performing its best. Proper cleaning can also extend the life of your motorcycle.

It is important to clean and inspect your motorcycle after every ride if it is used in mud, brush, grass, water, salt water, or very dusty conditions. build-up of mud, brush, grass, etc., especially on the engine and exhaust system, can reduce engine cooling. conceal damage, or increase wear of certain parts. It is important to all remove debris during cleaning.

? CAUTION

High pressure washers can dam- age your motorcycle (especially the oil cooler pin).

High pressure washers such as those found at coin-operated car washes have enough pressure to damage the parts of your motorcycle. It may cause rust, corrosion and increase wear.

Do not use high pressure washers to clean your motorcycle.

★WASHING YOURMOTORCYCLE

With some care, your motorcycle can be washed in a similar manner to washing an automobile.

NOTE

Avoid spraying or allowing water to flow over the following places:

- Ignition switch
- Spark plugs
- Fuel tank cap
- Electric fuel injection system
- Brake master cylinders
- Cooling system radiator
- Snorkel air intake for air cleaner
- Electrical

! CAUTION

Do not use parts cleaner to throttle body and electric fuel injection sensors.

Use a garden hose at low pressure to remove the majority of dirt or other debris. Wash your motorcycle by hand with a mild soap or detergent and water. Try to thoroughly remove all dirt and debris without excessive water pressure. Cloth raas. washing mitts or cleaning brushes can be used, be careful with brushes as they may scratch plastic or painted surfaces.

Rinse the motorcycle thoroughly with clean water.

Dry all areas using a chamois or soft absorbent cloth.

★WAXING THEMOTORCYCLE

After washing the motorcycle, waxing and polishing are recommended to further protect and beautify the paint.

- Only use waxes and polishes of good quality.
- When using waxes and polishes, observe the precautions specified by the manufacturers.

★INSPECTIONAFTER CLEANING

Remove the rags or wrapping from the exhaust pipe. For extended life of your motorcycle, lubricate according to "LUBRICATION POINTS" section.

MARNING

Operating the motorcycle with wet brakes can be hazardous.

Wet brakes may not provide as much stopping power as dry brakes.

This could lead to an accident. Test your brakes after washing motorcycle, riding at slow speed.

If necessary, apply brakes sever- al times to let friction dry out the pads.

Follow the procedures in the "INSPECTION BEFORE RIDING" section to check your motorcycle for any problems that may have arisen during your last ride.

STORAGE PROCEDURE

If you don't plan on using your motorcycle for a long time, it will need special servicing requiring appropriate materials, equipment and skill. For this reason, dealer recommends that you trust this maintenance work to your dealer. If you wish to service the machine for storage yourself, follow the general guidelines below:

★MOTORCYCLE

Clean the entire motorcycle.

Place the motorcycle on a firm, flat surface where it will not fall over.

Turn the handlebars all the way to the left and lock the steering, and remove the ignition key.

★FUEL

Fill the fuel tank to the top with fuel.

★BATTERY

1. Remove the battery from the motorcycle.

NOTE

Be sure to remove the \ominus negative terminal first, then remove the \oplus positive terminal.

- Clean the outside of the battery with mild detergent and remove any corrosion from the terminals and wiring harness connections.
- 3. Store the battery in a room above freezing.

★TIRES

Inflate the tires to the normal pres- sure.

★EXTERNAL

- Spray all vinyl and rubber parts with rubber protectant.
- Spray the unpainted surfaces with rust preventative.
- Coat the painted surfaces with car wax.

★MAINTENANCEDURING STORAGE

Once a month, recharge the battery.

The motorcycle battery standard charging time is 1.0 A × 10 hours.

★PROCEDURE FOR RETURNING TO SERVICE

- 1. Clean the entire motorcycle.
- Drain the engine oil, and replace the engine oil filter & engine oil with a new one.
- 3. Reinstall the battery.

NOTE

Be sure connect the \oplus positive terminal first, then connect the \ominus negative terminal.

- Adjust the pressure of tires as described in the TIRE section.
- Remove the spark plugs and push several times the electric starter switch to start

- the engine. Reinstall the sparkplugs.
- Lubricate all places as instructed in this manual.
- 7. Perform the INSPECTION BEFORE RIDING as listed in this manual.

Parameter List

×1070	
80/155 12.5	
V-type Duplex cylinder, 4-stroke,	
water cooling	
)	
124.7	
): 1	
1	
gnetic discharge	
Electric	
Pressure and splashing	
SAE10W-30	
#92 or higher unleaded gasoline	
28239162	
Oil Filter Type	
cam valve	
·	
normal pressure multi	
operated 5-gear ion	
•	

4 th gear	1.09	
5 th gear	0.91	
Vehicle type	0.51	
Wheel rim type	Light alloy	
Tire size Front	120/80-16	
Rear	150/80-15	
Tire pressure kPa (front/ rear)	200/200	
Brake type Front	Disk	
Rear	Disk	
Brake control mode (front/ rear)	Hand brake/foot brake	
Shock absorber type Front Rear	Spring oil damping	
	Spring oil damping	
Electric system	ODOF	
Spark plug model	CR8E	
Head light specification	Semi-closed 12V 55W/60W	
Turning light	12V 10W	
Brake light / rear-position light	12V 2.2W/0.2W	
Rear license plate lamp	12V 0.2W	
Meter indicator light	12V 2W	
Fuse size	15A	
Battery	12V 10Ah	
Horn model	Electromagnetic vibration type 12V 3A 105dB(A)	
Model or type of speedometer	Electronic	
Vehicle performance		
Braking force N front/rear	≥480/≥852	
Acceleration noise dB(A)		
Type inspection test	≤81	
Conformity inspection test	≤92	
Exhaust contaminant		
Working condition method (g/km)	HC≤0.38 NO _x ≤0.07	
Idle state method	CO≤0.8% HC≤150×10 ⁻⁶	
Max. driving speed km/h	≥100	
Min. stable driving speed km/h	≤25	
Sliding distance s	≥200	
Starting performance s	≤15	
Grade ability (°)	≥22	
Economical fuel consumption I/100km	≤2.9	
Starting acceleration time s	≤15	
Surpass acceleration time s	≤14	
Rollover slope angle (°)		
Angle of parking rack (°) left/right	≥9/≥5	
Front slope angle (°) Parking rack	≥6	
Reliability km	≥6000	
Durability km	≥20000 ≥20000	
Luminous intensity of headlight cd		
	≥10000	

Circuit Diagram