

MOTORCYCLE KPM OWNER'S MANUAL



IMPORTER
AMERICAN LIFAN, INC
9272 HYSSOP DRIVE,
RANCHO CUGAMONGA, CA
UNITED STATES 91730



OWNER'S MANUAL MOTORCYCLE KPM



Manufactured by: JIANGMEN QIPAI MOTORCYCLE CO., LTD.

PREFACE

Thank you for choosing the motorcycle. May you enjoy riding all time.

The manual contains the necessary instructions and guidance with respect to the operation and maintenance of the motorcycle, and **BE SURE TO READ IT CAREFULLY BEFORE YOU RIDE THE MOTORCYCLE**. Proper operation and maintenance can guarantee a safe riding to minimize troubles of the motorcycle and keep it in a sound condition which can extend the engine service life.

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IMPORTANT NOTICES

● Operator and Passenger

KPM is designed to carry the operator and one passenger. The maximum load weight of the motorcycle must not exceed 160kg.

On-road

● KPM motorcycle is designed for on-road use.

Pay special attention to statements preceded by the following words:

⚠ WARNING: Indicates a strong possibility of severe personal injury or death if instructions are not followed.

⚠ CAUTION: Indicates a possibility of equipment damage if instructions are not followed.

NOTE: Give helpful information.

Environmental Protection (EP): Indicates special precautions that must be taken to meet environment protection laws and regulations. Improper use of a motorcycle may cause environment pollution.

If the operator fails to follow the safe operating and maintenance practices, the Co. will not take any responsibility to any injury or damage occurred.

This manual should be considered as a permanent part for the motorcycle and should remain with the motorcycle when resold.

CONTENTS

MOTORCYCLE SAFE RIDING

| | |
|-------------------------|---|
| Safe Riding Rules | 1 |
| Protective Cloths | 1 |
| Refitting | 1 |
| Loading | 1 |
| Accessories | 1 |

GENERAL INFORMATION

| | |
|---------------------------------|---|
| Parts Location | 2 |
| Motorcycle Identification | 3 |
| Fuel and Engine oil (EP) | 3 |

CONTROLLING PARTS

| | |
|---|---|
| Meter and Indicators | 4 |
| Ignition Switch and Steering Lock | 4 |
| Right Handlebar Controls | 4 |
| Left Handlebar Controls | 5 |
| Refueling and Fuel Filler Cap | 5 |
| Gearshift Pedal | 5 |
| Rear Brake Pedal | 5 |
| Rear Shock Absorber | 6 |
| Stands | 6 |

OPERATION GUIDE

| | |
|---------------------------|---|
| Pre-ride Inspection | 7 |
| Starting the Engine | 7 |
| Breaking-in | 7 |
| Riding | 7 |
| Braking and Parking | 7 |

WORKING PRINCIPLE OF EFI

| | |
|-------------------------------------|---|
| Characteristics of EFI System | 8 |
| EFI Principle Drawing | 8 |

COMPONENTS OF EFI SYSTEM

| | |
|---|----|
| ECU | 9 |
| Throttle Valve Body Assy | 10 |
| Fuel Pump Assy | 10 |
| Oxygen Sensor | 10 |
| IAT Sensor | 10 |
| Cylinder/Water Temperature Sensor | 10 |
| IAP Sensor | 11 |
| Idle Air Control Valve | 11 |
| Magneto | 11 |

| | |
|-------------------------------|----|
| Engine Intake Manifold | 11 |
| Ignition Coil | 11 |
| 3-Way Catalyst (EP) | 11 |
| Fault Indicator | 11 |
| Fault Code Table | 12 |
| Fuel Evaporating System | 12 |

MAINTENANCE

| | |
|--|----|
| Tool Kit | 13 |
| Maintenance Schedule | 13 |
| Use and Adjustment of EFI System | 14 |
| Engine Oil (EP) | 14 |
| Coolant | 14 |
| Clear Away Carbon Deposit (EP) | 15 |
| Spark Plug (EP) | 15 |
| Air Cleaner (EP) | 16 |
| Valve Clearance | 16 |
| Exhaust Muffler (EP) | 16 |
| Operation of Throttle | 16 |
| Check Leaks along the Air Supply (EP) | 17 |
| Clutch | 17 |
| Drive Chain | 17 |
| Front Brake | 17 |
| Rear Brake | 18 |
| How to Use Brake Wear Indicator | 18 |
| Front/Rear Shock Absorber and Suspension | 18 |
| Tyre | 18 |
| Front Wheel | 19 |
| Rear Wheel | 19 |
| Fuse | 19 |
| Battery (EP) | 19 |

TROUBLESHOOTING, STORAGE AND OPTIONAL PARTS

| | |
|-----------------------------------|----|
| Troubleshooting | 21 |
| Cleaning and Storage | 21 |
| Removal from Storage | 21 |
| Motorcycle Alarm (Optional) | 21 |

TROUBLESHOOTING

ELECTRIC DIAGRAM

SPECIFICATIONS

MOTORCYCLE SAFE RIDING

SAFE RIDING RULES

⚠WARNING Carefully read the instructions in the “PRE-RIDE INSPECTION” before riding and take notice of the traffic safety when driving to guarantee the safety of drivers, passengers and motorcycles.

● Always make a pre-ride inspection before you start the engine and check the fasteners, connectors and adjusters, confirm the working condition to avoid the accidents and parts damage.

● Most countries requires a special motorcycle riding test or license. Make sure you are qualified before your ride. NEVER lend your motorcycle to an inexperienced rider.

● Make yourself conspicuous to help avoid the accident that wasn't your fault.

⚠WARNING

● Wear bright or reflective clothing.

● Don't excessively close to other vehicles and proper use lights and horns.

● Don't speedily cross another's way.

● Obey all national and local laws and regulations.

● Obey the speed limits, and NEVER travel faster than conditions warrant.

● Signal before you make a turn or lane change to draw other motorists' attention.

● Use extra caution at intersections, parking lot entrances and exits.

● Always remember to ride with both hands and keep both feet on the rider footrest while the passenger grasps the handrail with both feet on the rear footrest.

PROTECTIVE CLOTHS

● For the safety sake, always wear a helmet, a face shield, dust glasses and protective gloves.

● The exhaust system becomes hot during operation, and it remains hot for a while after stopping the engine. Take care not to touch the exhaust system while it is hot. Wear clothing that fully covers your legs.

● Do not wear loose clothing that could catch on the control levers, wheels, etc.

REFITTING

⚠WARNING Arbitrarily refitting the motorcycle or removing the parts

may make unsafe riding and is illegal also. The user must obey all national and local laws and regulations in relation to vehicle and traffic. If you have a good proposal concerning refitting of the motorcycle, please write us. The refitment can be done with permission of the Co. Otherwise, the user will take the consequences.

LOADING

⚠WARNING The motorcycle has definite distribution requirements on load bearing, improper loading will affect the performance, stability and safe operating speed.

● Keep cargo and accessory weight lower and close to the center of the motorcycle. Load weight equally on both sides to minimize imbalance. As weight is located further from the motorcycle's center of gravity, handling is proportionally affected.

● Adjust tyre pressure and rear suspension to suit load weight and riding conditions.

● Make sure that cargo is fastened on the vehicle.

● Do not attach items to the handlebars, fork or fender. Otherwise, unstable handling or slow steering response may occur.

● The maximum load weight of the motorcycle is 160kg. Please do not over-load.

ACCESSORIES

● Genuine accessories of Motors have been specifically designed and tested on the motorcycle. Because the factory cannot test all other accessories, you are personally responsible for selection, installation and use of accessories not produced by the Co. Always follow Safe Riding Rules as below:

● Carefully inspect the accessory to make sure that it does not obscure any lights, reduce ground clearance or banking angle, or limit suspension travel, steering travel or control operation.

● Do not install other cooling equipment for the engine.

● Do not add electric equipment that will exceed the motorcycle's electrical system capacity and blow fuse to cause the danger of lights not bright in night driving.

GENERAL INFORMATION

PARTS LOCATION (Fig. 1-3)

Fig. 1 (Left-view)



① Gearshift pedal ② Side stand ③ Rear wheel ④ Rear winker ⑤ Taillight
⑥ Handrail ⑦ Seat ⑧ Fuel tank ⑨ Rear-view mirror ⑩ Front fender

Fig. 2 (Right-view)



① Exhaust muffler ② Front footrest ③ Radiator ④ Front hydraulic brake
⑤ Front shock absorber ⑥ Front wheel ⑦ Headlight ⑧ Front winker
⑨ Meter ⑩ Rear shock absorber

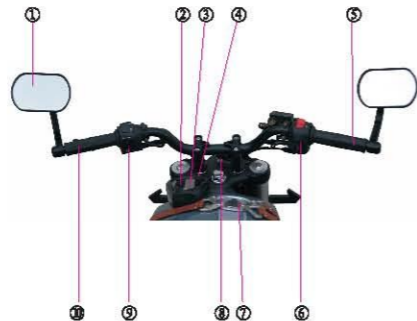


Fig.3

- ①Rear-view mirror
- ②Fuel gauge
- ③Speedometer
- ④Tachometer
- ⑤Throttle grip
- ⑥Right handlebar sw.
- ⑦Fuel tank lock
- ⑧Ignition sw.
- ⑨Left handlebar sw.
- ⑩Left grip

MOTORCYCLE IDENTIFICATION (Fig. 4-6)



①VIN Fig.4 ②Engine Code & Type Fig.5 ③Nameplate Fig.6

〔VIN RECORD〕

VIN: ☆ ☆

Engine Code: ☆ ☆

Engine Type: ☆ ☆

Please fill the VIN and engine code of your motorcycle in the blank above. They will help you order spare parts and find out the vehicle when stolen.

〔VIN LOCATION〕

- ①The VIN is stamped on the right of steering stem.
- ②The engine code/type is stamped below the left of crankcase.
- ③The vehicle nameplate is fixed in the left reinforcement plate .

FUEL AND ENGINE OIL (EP)

Fuel Selection

Fuel is a key factor in deciding the exhaust emission from the engine, so selection of fuel must follow the rules below. Selected fuel must be unleaded gasoline of 87 octane or above.

Engine Oil Selection (Fig.7)

The quality of engine oil plays a vital role in deciding the engine performance and service life. Engine oil must be selected in accordance with rules below. Other oils such as ordinary engine oil, gear oil and vegetable oil are forbidden to be used.

The vehicle has been filled with engine oil SAE 15W/40 before being delivered. The lubricant is only suitable at a temperature range within -10°C~+40°C. If other motor oil is to be used instead, the alter-native must be respect to the Grade SF or SC in the API Classification.

Viscosity varies with regions and temperatures, so the lubricant has to be selected according to our recommendation in Fig.7. Before replacement, drain off the engine oil in crankcase and wash it clean with kerosene catharsis, then refill the new oil.

If there is no gasoline engine oil SAE15W/40, the engine oil HQB-10 can be used instead (or the HQB-6 under -10°C).

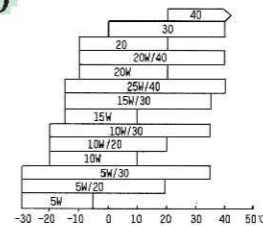


Fig.7

CONTROLLING PARTS

METER AND INDICATORS (Fig.8)

- ① Turn left signal indicator “←”
- ② Turn right signal indicator “→”
- ③ Position light
- ④ EFI fault indicator: it will be always on when turning on the key switch, and be off after starting the motorcycle, if there is a fault, the indicator will flash, for the detailed fault code, refer to page 12.
- ⑤ Neutral indicator “N”
- ⑥ Hi-beam indicator “≡○”
- ⑦ Tachometer ⑧ Water temperature alarm
- ⑨ Tachometer red zone: Limit of engine rotation. As driving in the speed, the service life of engine may be shorten.
- ⑩ Fuel gauge: when the last level flashes to warn that lacks of fuel, please fill as soon as possible.

- ⑪ Speedometer ⑫ Odometer ⑬ Clock ⑭ Gear indicator

Function of buttons:

1. SET button (on the right)

Long press (more than 3s) the button to enter the clock setting mode, firstly the Hour section winks, short press (less than 1s) the button to set the hour; after the Hour setting, long press (more than 3s) the button within 5s, the MINUTE section winks, sequentially short press (less than 1s) the button to set the minute; the setting will be exited if without any operation or long press the button in 5s.

2. SEL button (on the left)

- 1) At ODO or TRIP mode, short press (less than 1s) the button, TRIP/TOT



Fig.8

mode can be changed over;

- 2) At ODO mode, long press (more than 3s) the button, the metric/british system can be changed over.

- 3) At TRIP mode, long press the button, the read will turn to “0”.

NOTE Do not make the tachometer pointer in the red zone. Keep the motorcycle connects well with the battery, or the tachmeter can't return to “0”.

IGNITION SWITCH AND STEERING LOCK (Fig.9)

Ignition Switch

The ignition switch is equipped with 2 keys including a spare one.

“⊗” OFF: Engine and lights cannot be operated and the key can be removed.

“○” ON: Engine and lights can be operated, neutral light “N” is lit and the key cannot be removed.

Steering Lock

To lock the steering head, turn the steering bar to left or right until it can't move, then depress the key when it at the “⊗” position and turn counterclockwise to “Lock” position. To unlock the steering head, turn the key clockwise.

RIGHT HANDLEBAR CONTROLS (Fig.10)

Electric Starter Button

The motorcycle is equipped with an electrical starter button ①, depress the button to start up the engine. Don't use the electrical starter for more than 10s at a time.

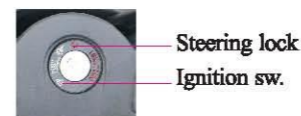


Fig.9



- ① Electric starter button
- ② Emergency sw.
- ③ Throttle grip
- ④ Front brake lever

Fig.10

Emergency Switch

In an emergency, setting the switch to “⊗” will stall the engine at once. In normal cases, always set it at “⊙”.

Throttle Grip

The grip is used to control the engine power. Turning inward will increase fuel supply, while turning outward will decrease fuel supply.

Front Brake Lever

Grasp the front brake to brake the front wheel.

LEFT HANDLEBAR CONTROLS (Fig.11)



Passing Light Switch

If required, press the button, the high beam and passing light will be turned on at the same time.

Dimmer Switch

Push the switch to “☉” to turn on the high beam; push the switch to “☽” to turn on the low beam.

Turn Signal Switch

Move the switch to “←” to signal a left turn; and to “→” to signal a right turn.

Horn Button

Press the button “🔊” to sound the horn.

Clutch Lever

It is designed to disengage/engage the crankshaft from/with the transmission and rear wheel for starting the engine or gearshifting.

REFUELING AND FUEL FILLER CAP

Opening of Cap (Fig.12)

● The fuel filler cap is located on the front of top fuel tank. Open the lock cover and insert the ignition switch key.

● Turn the key to the right by 90°.

● Remove the cap.

Only depress it to close the cap. The tank capacity is 13L.

NOTE For the sake of service life of fuel pump, fuel remained in the tank should be $\geq 3.5L$.

⚠WARNING

● Do not overfill the tank (there should be no fuel in the filler neck), to avoid the fuel entering into the carbon canister that will cause the vehicle stalls.

After refueling, make sure the fuel filler cap is closed securely.

● Gasoline is extremely flammable and is explosive under certain conditions. Refuel in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the fuel tank is refueled.

● Before refueling, make sure to filter fuel first.

GEARSHIFT PEDAL (Fig.13 & Fig.14)

This type of motorcycle is equipped with a 6-speed mesh transmission. Step the pedal the gear indicator will be bright when in the right position. Its shifting patterns are shown in Fig.14

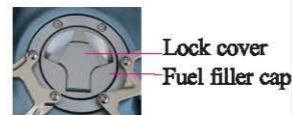
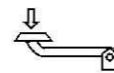
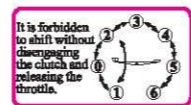


Fig.12



Fig.13



International gearshift pattern

Fig.14

REAR BRAKE PEDAL (Fig.15)

The rear brake will function and the rear stop light will glow when applying the pedal.



Fig.15

REAR SHOCK ABSORBER (Fig.16)

Users can adjust the rear shock absorber to the appropriate position according to the different roads, load and riding conditions. On the flat road with light load, turn the rear shock absorber to direction A will reduce the spring tension, but on the uneven path with heavy load, to direction B will increase the tension .



Fig.16

STANDS

Side Stand (Fig.17)

When parking the vehicle, turn the side stand clockwise along the frame to the end. Before driving the vehicle, turn the side stand to the initial position.

⚠CAUTION Be sure to put the side stand away before driving the motorcycle. Otherwise, it may fall over.

Center Stand

When parking the vehicle, step on the center stand at the left of body while rising the rear portion with right hand so as to support the motorcycle. Before driving the vehicle, push the motorcycle forward to let the center stand return automatically.



Fig.17

OPERATION GUIDE


PRE-RIDE INSPECTION

Inspect your motorcycle every time before you ride it. The items listed here will only take a few minutes to inspect, and in long run they can save time, expense and possibly your life.

1. Engine oil level - Add engine oil as required and check for leaks.
2. Fuel level- Refuel when necessary and check for leaks.
3. Front and rear brakes- Check operation and adjust free play if necessary.
4. Tyres- Check wear conditions and pressure.
5. Battery electrolyte- Check the electrolyte for suitable level.
6. Throttle- Check for smooth opening and full closing in all steering position. Adjust or replace it if necessary.
7. Lights and horn- Check the headlight, tail/stop light, wipers, parking light, indicators and horn for proper function.
8. Drive chain-Check the condition and slack. Adjust and lubricate it if necessary.
9. Fasteners- Check all nuts, screws and bolts are mounted securely.
10. Steering system - Check for smooth and reliable operation.

STARTING THE ENGINE

CAUTION Do not start the engine in a narrow area to prevent accidents. Attempting to start engine with the transmission in gear may result in damage to equipment. Before starting, operate as follows:

- Turn the ignition switch to “” position and insert the key.
- Move the gearshift pedal into the NEUTRAL to light up the indicator “N” (in green).

BREAKING-IN

Help assure your motorcycle's future reliability and performance by paying extra attention to how you ride the first 1000km. During this period avoid full throttle riding and changing speed continually, be sure to drive at a speed no

more than 60% of each gear. After the breaking-in period, be sure to conduct maintenance so as to make compensation for initial wear. The service life will be extended obviously through such maintenance.



RIDING

- Start the engine and warm up.
- While the engine in idling, pull in the clutch lever and push down the gearshift pedal to shift into low (1st) gear.
- Slowly release the clutch lever and at the same time gradually increase the engine speed by opening the throttle.
- When the motorcycle attains a steady speed, close the throttle, disengage the clutch and shift to 2nd by treading the gearshift pedal. This sequence is repeated to progressively shift to higher gears (shown in Fig.14 of page 5).
- Coordinate the throttle with brakes for smooth deceleration.
- Both front and rear brakes should be used at the same time and be not applied strongly to lock the wheel, or braking effectiveness will be reduced and control of the motorcycle be difficult.

CAUTION It is forbidden to gearshift up or down when the throttle is still not decreased and the clutch is in. Otherwise, damage to the engine, chain and other parts may occur.

BRAKING AND PARKING

To stop the motorcycle, close the throttle and disengage the clutch by pulling in the clutch lever, then smoothly operate the front and rear brakes until stopping the motorcycle.

Shift the transmission into neutral, turn the emergency switch to “” position. Then support the motorcycle with center stand or side stand. After parking, turn the ignition switch to “” position to lock the steering head, followed by removing the key.

WORKING PRINCIPLE OF EFI

EFI system transforms parameters such as inlet air quantity, cooling water temperature and engine working conditions (such as engine RPM, acceleration/deceleration), etc. obtained by various sensors into electric signals which are input to ECU. After comparing these with stored information and calculating correctly, ECU will output control signals. ECU can not only control the fuel supply accurately to instead of the traditional carburetor, but also control the ignition advance angle and idle air flow to greatly improve the engine performance. ECU is the core of EFI system and characterized by closed-loop control of computer, and directly work on ignition, fuel injection and three-catalytic converter.

For the convenience of maintenance, a fault diagnosis logic is developed. When there is something wrong with the EFI system, the fault light will be lit to warn users to repair, also the diagnosis scanner can be used to read the fault details and parameter of engine working condition.

● Characteristics of EFI system

[1] The core control logic of EFI system adopts the “Speed-density” method, which has been widely used in automobile with high reliability.

[2] The system can judge the altitude and allows the engine to run well at different altitude.

[3] The inductive ignition is used to greatly increase the ignition energy and improve the combustion efficiency.

[4] The 36-2 teeth magneto is adopted to improve the calculation accuracy of ignition advance angle. Also the system can control the engine’s ignition time intelligently to keep the engine always working in the best condition without any knock.

[5] When the motorcycle don’t need power so as to loosen the throttle at deceleration, sliding and downhill running, the EFI system can break fuel supply in time in order to avoid fuel waste and air pollution.

[6] When it accelerates suddenly, the EFI system can respond immediately

and give adequate fuel to allow the rapid acceleration and stability of motorcycle, that will avoid the violent starting and improve the driving performance.

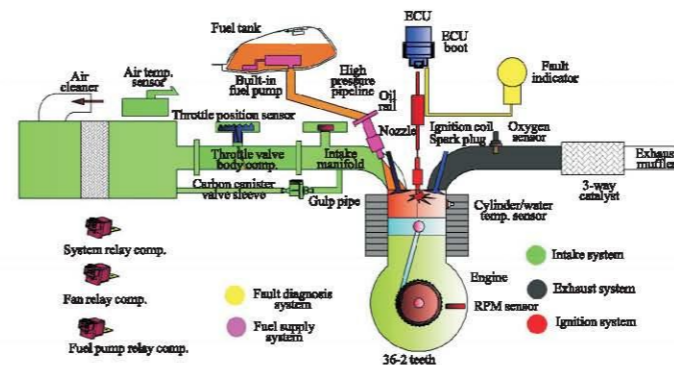
[7] The temperature correction function of EFI system can make the motorcycle has a very prominent hot/cold starting performance, where both starting can be triggered at once.

[8] The closed-loop controlled by the EFI system through a oxygen sensor can always keep the engine in a good working condition.

[9] The idle air quantity of engine controlled by the EFI system through a carbon canister valve that can maintain the stable idle speed.

[10] The fault indicator or fault diagnosis scanner can be used to judge the problem, so that the maintenance is simple and easier.

EFI PRINCIPLE DRAWING



COMPONENTS OF EFI SYSTEM

| Component Property | Name | Description |
|-------------------------|-----------------------------------|--|
| Component of EFI System | ECU | Computer program, chips, electronic components and circuit board are included. |
| | Throttle valve body Assy. | Throttle valve body and position sensor are included. |
| | Oxygen sensor | In closed-loop control, to test the oxygen content after combustion in engine. |
| | Cylinder/water temperature sensor | To measure the engine temperature. |
| | IAT sensor | To measure the intake air temperature of engine. |
| | IAP sensor | To measure the load. |
| | Fuel pump Assy. | To supply the constant fuel pressure. |
| | Fuel injector | To inject fuel to engine. |
| | Fuel rail | To connect to the fuel injector. |
| | Carbon canister valve | To supplement the idle air quantity of engine. |

| | | |
|-----------------------------|---------------------------|--|
| Spare Parts (Whole Vehicle) | Fuel tank | Dedicated part for EFI, with oil inlet/outlet and fuel evaporative adsorption port |
| | Oil hose | Dedicated part for EFI, used for connecting to oil circuit |
| | Exhaust muffler | Dedicated part for EFI, installed with oxygen sensor and 3-way catalytic converter |
| | 3-way catalytic converter | Installed in the exhaust muffler |
| | Throttle cable | Dedicated part for EFI |
| | Wire harness | Dedicated part for EFI |
| | Fuel pump relay | Supply oil to fuel pump |
| Spare Parts (Engine) | Carbon canister | Used for fuel evaporative system |
| | Magneto Assy. | Include 36-2 teeth magnetic cylinder, coil and speed sensor |
| | Rectifier | To match with magneto, 3-phase |
| | Ignition coil | Inductive |
| | Intake manifold | To install with fuel injector and rail |

1. ECU (Fig.18)

ECU is the control center of whole EFI system, and decides the best fuel injection timing, fuel supply and ignition advance angle by analyzing and processing the parameters from IAP/IAT sensor, cylinder/water temperature sensor, speed sensor, throttle position sensor and



Fig.18

oxygen sensor to meet the optimal performance and exhaust requirement.

Working condition of ECU:

[1] Power supply range: DC $12 \pm 2V$, provided by the battery;

[2] Ambient temperature: $-25^{\circ}C \sim 85^{\circ}C$;

[3] Refer to the Electric Diagram for each interface;

[4] ECU numbering rule: ECU type + Vehicle type + ECU batch number

NOTE

[1] Do not plug in or unplug the ECU controller with electricity, otherwise it can be damaged and causes the unable driving of motorcycle.

[2] It is forbidden to dismantle the ECU or pry the pin in the socket with solid objects, or else it will cause damage.

[3] Do not drop or collide ECU with solid objects. Keep the coupler away from water and oil.

Throttle Valve Body Assy. (Fig.19)

The throttle valve body Assy., composed of throttle position sensor, throttle valve body and adjusting screw of idle air quantity, are installed between the engine intake manifold and air cleaner.

NOTE Clean the throttle valve body Assy. regularly to keep the system at optimal performance.

Fuel Pump Assy. (Fig.20)

Fuel pump Assy. is used to deliver fuels from fuel tank to engine at certain pressure and flow rate.

Working condition of fuel pump: when start the ignition switch, the fuel pump will run for 3s, then if the ECU can't detect the effective speed signal for missing teeth, the fuel pump will stop; when the engine starts to work, the fuel pump will run unless the ECU detects at least 2 effective signal for missing teeth. Without speed signal, the fuel pump will stop.

NOTE

[1] For the sake of service life of fuel pump, fuels remained in the tank should be $\geq 3.5L$.

[2] Replace or clean the strainer every 10,000km.



Fig.19



Fig.20

Oxygen Sensor (Fig.21)(EP)

The oxygen sensor, installed on the exhaust muffler, is used to test the oxygen content from the engine's exhaust and to realize the closed loop and adaptive control of system.

NOTE

[1] Make sure that there is no leakage from the connections of muffler and engine exhaust port, oxygen sensor and muffler, otherwise the system will not work normally.

[2] It is forbidden to knock or impact the oxygen sensor in dismantling, also keep the coupler away from the water and oil.

[3] It is forbidden to water the oxygen sensor directly in thermal condition that may cause its damage.

IAT sensor (Fig.22)

The part is located in the main cable that's near the air cleaner and used to test the engine intake air temperature.

Cylinder/water Temperature Sensor (Fig.23)

The cylinder/water temperature sensor, mounted on the cylinder body, is designed to measure the temperature of engine.



Fig.21



Fig.22



Fig.23

IAP Sensor (Fig.24)

It connects to the engine intake manifold through the rubber hose, and can be used to test the engine inlet vacuum and altitude.

NOTE

- [1] Impurities such as water and oil mustn't exist in the IAP sensor.
- [2] Pay attention to the tightness of all connections, otherwise the system will be out of work.

Idle Air Control Valve (Fig.25)

It connects to the engine intake manifold and air cleaner through the rubber hose, and can be used to compensate the inlet quantity at idle speed.

NOTE

- [1] Make sure to install the part in proper direction (as shown in Fig.25).
- [2] Pay attention to the tightness of all connections, otherwise the system will be out of work.



Fig.24



To intake manifold To air cleaner

Fig.25



Fig.26

Magneto (Fig.26)

It consists of a 36-2 teeth rotor, stator and speed sensor.

NOTE

- [1] The magneto is a specialized part, so the same model should be used in replacement, or the system will be out of work.
- [2] Keep the clearance between speed sensor and magneto rotor flange is 0.7 ~1mm, or the system's starting performance will be affected.

Engine Intake Manifold (Fig.27)

It is composed of intake manifold, fuel injector and fuel rail.

NOTE

- [1] Please check the insulator O-ring for damage in dismantling, also install it in proper method. Make sure the tightness of air passages without leaking.

- [2] Keep the cleanness of oil hose in dismantling, otherwise, the electromagnetic fuel injector will be blocked to affect the normal working of system.



Fig.27

Ignition Coil (Fig.28)

The ignition coil is a inductive one with great ignition energy.

NOTE The same model part has to be used in replacement, or the system can't work normally.

3-Way Catalyst (EP)

The 3-way catalyst is mounted on the exhaust muffler of motorcycle. It is designed to decrease contaminations such as CO, HC and NOx, etc. by redox reaction to catalysts.

NOTE

- [1] In order to avoid causing abnormal failure of 3-way catalyst, it is forbidden to allow the acid liquor, water etc. entering into the exhaust muffler. Unleaded gasoline should be used.
- [2] It is forbidden to do the spark-over test when the engine is still hot, otherwise the 3-way catalyst may be damaged.

Fault Indicator

When turn on the ignition switch but not start the engine, the fault indicator will always blink if there is no fault in the current system, or else it blinks in accordance with certain Fault Code Sheet; when the engine has been started, if there are something wrong, the fault indicator will light constantly to remind the users of fixing the motorcycle as soon as possible. Rule of fault code flashing: One fault code is made of two digits. Firstly the tens digits flicker, then the unit digits, the two interval is about 1.5s. If there are several faults in the system, the two fault codes' interval is about 6s.



Fig.28

FAULT CODE TABLE

| Fault Code | Flashing Code | Fault Type | Fault Code | Flashing Code | Fault Type |
|------------|---------------|---|------------|---------------|---|
| P0261 | 11 | Open circuit of fuel injector | P0603 | 25 | ECU failure |
| P0262 | 12 | Short circuit of fuel injector to power | P0117 | 32 | Cylinder/water temp. short circuit to ground |
| P0650 | 13 | MIL failure | P0118 | 32 | Open circuit of cylinder/water temp.or short circuit to power |
| P0508 | 14 | Open circuit of idle valve | P0112 | 33 | IAT short circuit to ground |
| P0509 | 15 | Short circuit of idle valve to power | P0113 | 33 | Open circuit of IAT or short circuit to power |
| P0231 | 16 | Open circuit of fuel pump relay | P0563 | 34 | System voltage failure |
| P0232 | 17 | Short circuit of fuel pump relay to power | P0335 | 35 | Speed sensor failure |
| P0655 | 18 | Drive failure of water temperature light | P0031 | 41 | Open circuit of oxygen sensor heating circuit |
| P0634 | 19 | Internal ECU overheating | P0032 | 42 | Short circuit of oxygen sensor heating circuit |
| P0122 | 22 | Short circuit of throttle position sensor to ground | P0106 | 26 | Trouble in testing the pressure sensor load |
| P0123 | 22 | TPS short circuit to power | P0691 | 43 | Open circuit of fan relay |
| P0107 | 23 | Short circuit of pressure sensor to ground | P0692 | 44 | Fan relay short circuit to power |
| P0108 | 23 | Open circuit of pre. sensor or short to power | P2300 | 46 | Open circuit to ignition |
| P0131 | 24 | Low voltage of oxygen sensor | P2301 | 46 | Short circuit to ignition |
| P0132 | 24 | Oxygen sensor open circuit or high voltage | P0685 | 56 | System relay failure (electricity maintaining) |

Fuel Evaporating System (Fig.29)

The system consists of ①adsorption tube, ②desorption tube, ③vent tube, ④carbon canister, ⑤drain pipe.

When fuel vapor comes out from the fuel tank, it is absorbed and stored by the carbon canister, and then combusted when the engine works properly. Therefore, fuel vapor fails to let into the atmosphere directly to attain the target of environment protection and energy conservation.

NOTE All the rubber hoses should not be squeezed or bent. The interface of carbon canister through the atmosphere must be down-wards, and the outlet can not be blocked. Check them regularly.



Fig.29

MAINTENANCE

TOOL KIT (Fig.30)

Some roadside repairs, minor adjustments and parts replacement can be performed with the tools available in the kit.

- ① Screw driver grip
- ② Double-ended screw driver
- ③ Spark plug wrench (16#×18#)
- ④ Open-ended spanner, 8mm×10mm
- ⑤ Open-ended spanner, 13mm×15mm
- ⑥ Tool bag

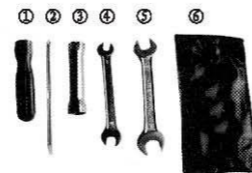


Fig.30

MAINTENANCE SCHEDULE

To keep the performance good, the motorcycle should be checked and maintained at certain interval. The meanings of capital in following table are:

I: Inspection, including check, clean, lubricate, refuel, repair or replacing if necessary.

A: Inspection, adjusting if necessary C: Cleaning R: Replacing L: Lubricate

NOTES:

①* There items should be serviced by your dealer, unless the owner has the proper tools and is mechanically qualified. Refer to the manual.

②** In the interest of safety, we recommend these items should be serviced only by your dealer.

| Maintenance period Item | Odometer(km) | | | | | | | Everyday check before riding |
|----------------------------|--------------|------|------|------|-------|-------|-------|------------------------------|
| | First 1000 | 3000 | 6000 | 9000 | 12000 | 15000 | 18000 | |
| ** Engine Oil | R | R | R | R | R | R | R | I |
| ** Spark Plug | | | I | | R | | I | |
| ** Valve Gap | | | A | | A | | A | |
| ** Idle Speed | | | A | | A | | A | |
| * Engine Bolt | | | I | | I | | I | |
| * Oil Filter | | | C | | C | | C | |
| * Gear Oil | | | R | | R | | R | |
| * Fuel Filter | | | R | | R | | R | |
| * Air Cleaner | | C | C | C | R | C | C | |
| * Drive Chain | | | L | | L | | L | |
| Throttle Operation | | | I | | I | | I | I |
| Brake Shoes/Pad Wear | | | I | | I | | I | I |
| Brake System | | | I | | I | | I | I |
| Brake Light Switch | | | I | | I | | I | I |
| Brake Liquid | | | I | | I | | I | I |
| Clutch | | | I | | I | | I | I |
| Suspension | | | I | | I | | I | I |
| Nuts, Bolts, Fasteners | | | I | | I | | I | I |
| Wheel/Tyre | | | I | | I | | I | I |

USE AND ADJUSTMENT OF EFI SYSTEM

1. Adjustment of throttle cable

Measure the free play between throttle cable and cable tray at its ordinary state, that is should be 2~6mm. If not, adjust it as follows:

- [1] Loose the locknut and remove the boot.
- [2] Turning the adjustment screw, adjust the throttle cable to a proper length.
- [3] Tighten the locknut up and put the boot to the original position.
- [4] If such adjustment is unsatisfied, adjust the other end fixed on the throttle cable stay.

NOTES

Adjustment over, check the operation of throttle grip and make sure that the grip functions smoothly without stop or block.

2. Adjustment of EFI

If the new or repaired vehicle which is used for the first time or engines have malfunction, please check and adjust them as follows:

- [1] Check the assembly condition of vehicle, engine and all parts in EFI. Special attention should be paid that the negative and positive electrodes of the battery cannot be connected adversely and the grounding reliability of wire harness also should be confirmed.
- [2] Make sure that the fuel type in fuel tank is correct and the amount of fuel is sufficient (not less than 2L). Check the oil lines for leakage or immersion.
- [3] Turn on the ignition switch (while do not start the engine). In normal case, the fuel pump turns for 3~6s and the fault indicator goes out after it is bright for 1~3s. If not so, remedy the troubles in light of fault flashing code and then do the next step.
- [4] Set the transmission into neutral, start the engine after checking the brake, then make trial of the vehicle and check it for proper function.

NOTES

- [1] Start the engine for longer time due to air in fuel pipe for a new vehicle or repaired one which is used for the first time.
- [2] If such service is still unsatisfactory, see your dealer for help.

ENGINE OIL (EP)

Check of Engine Oil (Fig.31)

Check the engine oil level before driving. A view hole is located on the bottom of right crankcase cover to view the level, which must be maintained between H mark and L mark.

● Place the motorcycle on a level ground and vertical to it. Check the oil level from the view hole.

● Add engine oil SAE 15W/40-SF to H mark level. Do not overfill.

● Reinstall the dipstick. Check and make sure that no leakage is found.

NOTE Running the engine with insufficient oil can cause serious damage to the engine.

Change of Engine Oil (Fig.32)

● It is better to drain when the engine is still warm.

● Place an empty container under the engine, unscrew the drain plug.

● Reinstall the drain plug and tighten it up.

※ Pour approximate 1.3L of SAE 15W/40 gasoline into the engine and restart it. Keep it idle for a few minutes, and then stall it. Recheck the oil level, and add oil if necessary.

CAUTION When running in very dusty conditions, oil changes should be performed more frequently than specified in the maintenance schedule. Please dispose of used engine oil in a manner that is reclaimed by the qualified department in local.

COOLANT

1. Function of Coolant

The specialized coolant for water-cooling motorcycle has the characteristics of low freezing point (-40°C), high boiling point (108°C) and corrosion resistance at standard atmosphere. It can prevent the over heat of engine due to the



Fig.31
① Dipstick
② H mark
③ L mark



Drain plug

Fig.32

idle or low speed rotation of engine, also the harmful formations in radiator.

NOTES

[1] The coolant has been configured with the 55% concentration which can be directly used without any reconfiguration. It is forbidden to fill with water when it is insufficient.

[2] Do not mix it with other types of coolant.

[3] The coolant is toxic and absolutely not edible.

2. Fill with Coolant (Fig.33&34)

[1] Place the motorcycle on a level ground with the center stand, open the radiator cover and fill the radiator up with enough coolant.

[2] Start the engine, alternately operate it at idle speed and high speed for 2~3 times, then supplement coolant to the radiator to the top, cover and tighten it up.

[3] Pour adequate coolant (between the L mark and H mark level) into the reservoir at the bottom of the fuel tank, then put the reservoir cover on.

3. Replacement of Coolant

Place the motorcycle on a level ground with the center stand. Put an empty container under the outlet of reservoir, and then pull the pipe to drain off the coolant. At last reinstall the pipe and refill the coolant.

CAUTION

To avoid to turn on the radiator when it is still hot, because the high temperature and high pressure liquids in it can boil violently as the pressure drops sharply, which may result in scalding by the coolant.

If it is necessary to unscrew the cylinder nut in repairment, please drain the coolant off firstly to prevent it entering into the crankcase.

Maintenance of Cooling System

1. Check the cooling system for leaking every 3000km, that includes the



Fig.33

Radiator cover



Bolt
Overflowing Pipe
Fig.34

connections of water pump and circulating pipe, the damage and wear of circulating pipe. You can press the pipe to check it for cracks, and replace it if necessary. Through the leakage inspection hole to confirm the mechanical tightness. When the coolant is leaked, please see your dealer for help, do not dismantle it by yourself.

2. Check the coolant every 3000km

(1) Check the level of the coolant in the radiator, as the coolant evaporates slightly in service. When you fill up, please choose the coolant with same concentration and same brand. It is forbidden to supplement water.

(2) Check to see whether the coolant in the radiator becomes cloudy or needs to be replaced according to the replacement cycle (in times/year). If it happens, change it timely.

CLEAR AWAY CARBON DEPOSIT (EP)

Clear away carbon deposit around the spark plug and piston ring, on the piston top, in the piston slot and combustion chamber regularly.

SPARK PLUG (EP) (Fig.35)

Spark Plug Type : As stated in "SPECIFICATIONS"

Check and Replace

● Spark plug is located on the upper right of cylinder head, disconnect the spark plug cap and clean any dirt around. Remove the spark plug by the special wrench.

● Inspect the electrodes and center porcelain for ablations and deposits. Replace the spark plug when too much ablations and deposits on or the insulator with cracks or drops. Clean the deposits and dirt with brush.

● Check the spark plug gap which should be 0.8~0.9mm, and adjust it by bending the side electrode if necessary.

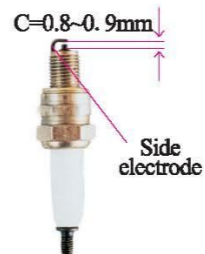


Fig.35

AIR CLEANER (EP) (Fig.36)

The air cleaner must be cleaned and then soaked in clean oil at least once every 3000km's drive. Riding in a very dusty area, the job should be done more often. See your dealer for correct maintenance schedule according to your driving condition.

- Firstly remove the left & right side cover, then the seat.
- Remove the connecting screw to open the air cleaner cover, and remove the element.
- Replace a new air cleaner element.
- Reinstall the air cleaner element and cover in the reverse order of removal.



① Side cover ② Seat ③ Screw ④ Air cleaner cover ⑤ Air cleaner element

Fig.36

VALVE CLEARANCE (Fig.37)



Fig.37

Check or adjust the valve clearance when the engine is cold.

- Remove the view hole cap, magneto cap and cylinder head cover on the front-left cover.
- Rotate the magneto rotor counterclockwise until mark T ① aligns with the index mark ②. Touch the rocker arms to see if the piston is in TDC of the

compression stroke, if the rocker arm is free, it is right. Otherwise, rotate the rotor through 360° and align with the mark T.

- Clearance should be 0.08mm for the intake valve and 0.12mm for the exhaust valve.
- If it is necessary to make an adjustment, loosen the valve locknut ④ and turn the adjusting screw ③. Rotate towards direction A, the valve clearance will decrease, or towards direction B, it increases. Then tighten the locknut ④ up and recheck the valve clearance.

EXHAUST MUFFLER (EP)

Regularly clear away carbon deposit in the exhaust pipe, check the exhaust pipe inside for crack and washer for damage, repair or replace it if necessary.

NOTE After each disassembly, the muffler gasket should be replaced. Be careful not to hurt by the high temperature of exhaust pipe after the engine runs for a short time.

The exhaust muffler is internally equipped with 3-way catalyst which contains heavy metals that can cause the environment pollution. Do not discard the muffler at will after scrapping, it should be submitted to the qualified waste recycling department or reclaimed by the dealer in local.

OPERATION OF THROTTLE (Fig.38)

- Check for smooth rotation of the throttle grip ① from the fully open to the fully closed position at both full steering position.
- Measure the throttle grip free play at the throttle grip angle. The standard free play should be approx. 2-6mm. To adjust the free play, loosen the locknut ②, turn the adjusting bolt ③. Turn to direction A, the free play will be decreased, to direction B, it will be increased. Adjustment over, fasten the locknut.



① Throttle grip
② Locknut
③ Adjusting bolt

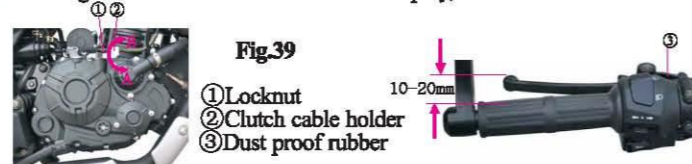
Fig.38

CHECK LEAKS ALONG THE AIR SUPPLY (EP)

Regularly check the air passage, especially such as joints between the muffler and engine, the air cleaner and throttle valve body, the throttle valve body and inlet manifold, the inlet manifold and engine, etc. for leakage. Repair or replace them if necessary.

CLUTCH (Fig.39)

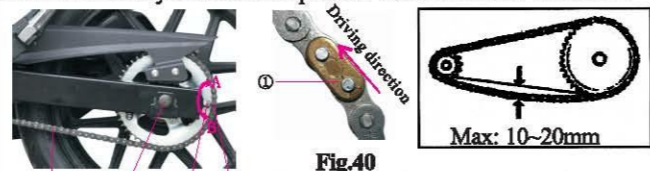
- The free play should be 10-20mm and free clearance is 3-4mm. Adjust as follows: loosen the locknut ① located at the clutch cable holder ② of right crankcase and adjust it.
- Turning in direction A to decrease the free play, in direction B to increase it.



DRIVE CHAIN (Fig.40)

Check

Check the drive chain for wear and slack. Lubricate the chain if it seems to be dry. Support the motorcycle with the center stand, check the slack in the lower chain run midway between the sprocket. Slack should be 10-20 mm.



Adjustment

Loosen the rear axle locknut and drive chain adjuster locknut, turn the adjusting bolt to direction A will tighten the chain, to direction B will release it. Make sure the left and right adjusters align with the same index marks, check

and tighten the rear axle locknut up with a torque of 72~88N.m.

※ Check the chain for slack.

※ If slack of chain is changed, recheck and readjustment to rear wheel should be conducted, because such change will influence the free play of rear brake.

Lubrication

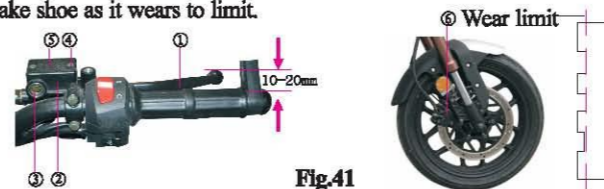
Pull out the chain clip with pliers, remove the joint and chain. Wash the chain in cleansing solution and dry it in the air. Check the chain including link plates, bushing and rollers for damage, cracks, wear-out. Replace it if necessary. Lubricate the chain, then reinstall in the reverse order of removal, finally adjust it.

NOTE The chain clip shall be installed as to make sure that its open end reverses to the direction of wheel rotation.

FRONT BRAKE (Fig.41)

Check of Front Brake

The brake master cylinder is mounted on the right handlebar. The parts on the brake caliper that connect with brake disc and conduct friction brake are called as disc brake shoes. It is necessary to replace the disc brake shoe as it wears to limit.



- ① Front brake lever ② Brake master cylinder
- ③ Sight glass ④ Screw ⑤ Cylinder cover ⑥ Brake caliper

Place the motorcycle on the level ground. Check the brake fluid level from the sight glass. If the fluid level is below the LOWER, loose the screw and remove the cylinder cover to add brake fluid.

⚠ WARNING Apply the specified brake fluid, or the braking effectiveness will be affected. Brake fluid may cause irritation. Avoid contacting with skin and eyes. In case of contact, flush thoroughly with water.

Adjustment of Front Brake

Grasp the front brake lever until the counter force occurs, the free play should be maintained within 10~20 mm. Adjusting the free play as follows if necessary:

Apply continuously the front brake lever several times, then gently loosen the bleed valve while holding the lever. Tighten up the bleed valve as soon as the air in the oil cylinder is discharged completely. Repeat the procedure above until the required free play is reached.

Apply the brake several times and check for free wheel rotation after the brake lever is released.

REAR BRAKE (Fig.42)

Support the vehicle on its stand.

Measure the distance from the rear brake pedal to the brake starts to engage. The free play should be 20~30 mm.

※Apply the rear brake pedal several times and check for free wheel rotation after the brake pedal is released.

NOTE See your dealer for help if the rear brake need to be adjusted.

HOW TO USE BRAKE WEAR INDICATOR

(Fig.43 & Fig.44)

Replace the disc brake shoes if they are wear out.

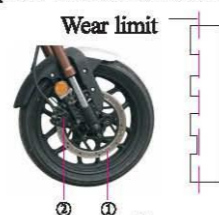


Fig.43
① Front brake disc
② Front brake caliper



Fig.44
① Rear brake disc
② Rear brake caliper



Fig.42

FRONT/REAR SHOCK ABSORBER AND SUSPENSION

Support the motorcycle with the stand, grasp the front brake lever and pump the front/rear shock absorber up and down several times to see if functions well without noise or leakage, also the front suspension should be stable.

Check the rear fork bush for proper play by pressing the side of rear wheel. Make sure that all of the fasteners are tightened securely.

TYRE

Proper air pressure will provide optimum stability, comfortable riding and prolong the tyre life.

| | Front tyre | Rear tyre |
|----------------|------------|-----------|
| Pressure (kPa) | 220 | 225 |
| Tyre size | 100/80R17 | 130/70R17 |

NOTE

● Operation with excessively worn tyres is hazardous and will adversely affect traction and handling.

● Tyre pressure should be checked before you ride while the tyres are cold. Check the tyres for cuts, embedded nails, or other sharp objects. Check the rims for bent or deformation. See your dealer for repair or change if any damages occurred.

CAUTION Improper tyre inflation will cause abnormal tread wear or safety hazard. Tyre pressure less than the rated value may result in slipping wheel on the ground or coming off from the rim.

When the tread depth in the middle section of tyres reached limits below, please replace them.

| Tread Depth Limits | | | |
|--------------------|-------|-----------|-------|
| Front tyre | 0.8mm | Rear tyre | 0.8mm |

FRONT WHEEL (Fig.45)

To remove the front wheel, support the motorcycle with its stands, loose the front axle nut to remove the speed sensor②, then the front axle①and front wheel.

NOTE Installation should be done in the reverse order of removal. Tightening torque of front axle nut: 69~81N.m



Fig.45

REAR WHEEL (Fig.46)

Support the motorcycle with its stands. Unscrew the bolt and remove the rear brake caliper. Unscrew the locknuts①of chain adjuster on both sides of rear wheel, and the rear axle nut. Remove the drive chain clip and chain. Finally unscrew the rear axle nut to extract the rear axle② and rear wheel.

NOTE Installation shall be done in the reverse order of removal. Tightening torque of rear axle nut: 72~88N.m.

Adjust the rear brake and chain according to the related items in the manual.

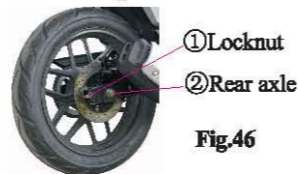


Fig.46

FUSE (Fig.47)

The fuse is positioned behind the left side cover of vehicle and nearby the battery stay. It will blow to protect the circuit automatically in the case of troubles such as a short circuit or an overload. After the troubleshooting, fit a new fuse available in the fuse box.



Fuse
Fig.47

BATTERY (EP) (Fig.48)

The battery is located inside the left side cover of vehicle. To unscrew the bolt of left side cover and remove the cover, the battery is shown.

The battery stores the electric power yielded by generator as well as supplying power for starting, lighting and signal system. The function of battery will affect power storage and power supply to electrical appliance directly. A fault occurred in the battery may cause poor illumination, disable signal system and weak starting, etc..

Maintain the battery in accordance with the MAINTENANCE SCHEDULE and PRE-RIDE INSPECTION in the manual.

The motorcycle is equipped with a maintenance-free battery, for the new battery need to add electrolyte at the first time, please do as follows (Fig.49-1 & 49-2):



Fig.48

- (1) Take out the battery and electrolyte container from the package box.
- (2) Remove the plastic cover from the electrolyte container and set aside.
- (3) Place the battery on a flat, level surface and turn over the electrolyte container, align inlets of the battery to outlets of container, push the container down strongly enough to break the aluminum foil seals, let electrolyte flows into battery.
- (4) This done, put the cover of container onto inlets of battery, and gently tap the caps with a rubber hammer.
- (5) Install the battery in the motorcycle after standing more than 30 minutes.



- ① Battery
- ② Cover
- ③ Electrolyte

Fig.49-1



Electrolyte filling process:

1. Aligning with inlets
2. Filling
3. Covering

Fig.49-2

⚠CAUTION

1. The battery contains sulfuric acid (the main component of electrolyte) that with strong corrosive. Be careful when filling the electrolyte. Contacting with skin may cause severe burns. If such case occurs, flush with water immediately and see a doctor if necessary.

2. When the filling of electrolyte is finished, do not take off the cover in any case.

3. Maintain the battery according to the OPERATION INSTRUCTION OF BATTERY.

4. Hand in the used battery to your local qualified recycling organization or dealer to collect.

5. Hand in the used battery to your local qualified recycling organization or dealer to collect.

⚠WARNING

If the battery is to be removed, disconnect the negative lead “-” from the battery terminal first, and then the positive lead “+”. Connection should be done in the reverse order of removal. Do not contact the positive lead with the vehicle body to prevent short-circuit. The leads should be tightened securely, or spark may occur to cause a fire. Keep out of children reaching batteries. Do not use a new battery until taking a 30-minute waiting after adding electrolyte. Charge the battery which is lack of electricity at a rate less than 1A for 10-15 hours if necessary. For prolonging the battery’s service life, please refer to the OPERATION INSTRUCTION OF BATTERY.

TROUBLESHOOTING, STORAGE AND OPTIONAL PARTS

TROUBLESHOOTING

If the engine fails to start, do checks as follows:

1. Is there enough fuel in the tank?
2. Is the oil gallery clear?
3. If OK, check the ignition system.

CAUTION Do not allow fuel to flow at will. Fuel should be collected in the container. Do not close the fuel to high-temperature engine and exhaust pipe. Do not smoke or allow flames or sparks in the area where the engine is subjected to check.

1. Remove the spark plug from the cylinder head, and connect it with the spark plug cap.
2. Fix the spark plug on the vehicle body. Turn the ignition switch on, set the emergency switch to "O" position, then press the starter button. If the ignition system is normal, the sparks at the electrode gap will be in blue. If there are no sparks, see your dealer for help.

CLEANING AND STORAGE

Cleaning

1. Check the spark plug and fuel inlets for proper installation before cleaning the vehicle.
2. Hose dirt and oil stains on the motorcycle.
3. Dry the motorcycle with a clean towel or a soft sponge cloth.
4. Lubricate the drive chain immediately after drying it.
5. Start the engine, and keep it running at idle speed for several minutes.

NOTE High-pressure water may damage certain parts such as wheel bearings, front fork, brakes, seal of transmission, electric equipment, etc. Prevent the muffler from getting in water, the spark plug from being wetted down when washing the vehicle.

Storage

Take some measures as following if the vehicle will be stored for 60 days or more.

1. Empty the fuel tank, carburetor and other pipes.

2. Drive off the spark plug, pour a bit of engine oil SAE 15W/40-SF into the engine, then fit the spark plug again. Turn on the ignition switch and run the engine several times by pressing the starter button to scatter evenly the oil inside the cylinder.

3. Remove the drive chain, clean and oil it.

4. Lubricate all of the controlling cables.

5. Rise the vehicle frame so that the whole vehicle including both wheels is higher than the ground.

6. Seal the muffler outlet with a plastic bag to prevent the former against moisture.

7. Coat all surfaces of bare metal with a thin layer of rust resistance oil if the motorcycle is stored in moist and salty regions.

8. Dismantle the battery and store in a dry, cool and well-ventilated place. Charge the battery monthly in course of storage.

REMOVE FROM STORAGE

After long-term storing the motorcycle, check, adjust and service it according to requirements stated in the manual to make sure the motorcycle functions properly. Make sure the motorcycle fulfill the requirements before riding.

MOTORCYCLE ALARM (Optional)

1. Before using the remote-controller, be sure that the vehicle is in neutral and the ignition switch is turned off.

2. Electric starting by the remote-controller only warms up the engine, and the engine will stop automatically in 2.5 minutes.

3. When starting the engine by the remote-controller, don't apply both the front and rear brakes before turning on the ignition switch, otherwise, the starting motor will run once more.

4. Don't ride without the key to insure that the function of anti-theft is reliable enough.

NOTE The anti-theft alarm is an optional part, please select it as required.

TROUBLESHOOTING

| | | TROUBLE | POSSIBLE CAUSES | REMEDY | |
|--------------------------------------|-----------------------------|----------------------------|--|-------------------|---|
| Engine is hard to start or flame out | Fuel pump fails to function | | System is lack of electricity or no power at the pump plug | | Check the battery, fuse, pump relay, wiring harness for connection or replace the ECU |
| | | | The fuel pump plug has electricity | Damaged fuel pump | Replace the fuel pump |
| | | | | Low voltage | Check the battery, relay and wire connection |
| | No fuel pressure | | Wires in reverse connection | | Reconnect |
| | | | Battery voltage is too low | | Charge or replace the battery |
| | | | Lack of fuel | | Add fuel and the amount should be not less than 3.5L. |
| | | | Fuel passage is blocked seriously | | Check the fuel pump strainer |
| | | | Failure of fuel pressure regulator | | Replace the fuel pressure regulator |
| | Abnormal fuel pressure | | Fuel passage leaks | | Replace the failure part |
| | | | Fuel passage is blocked | | Check the fuel pump strainer |
| | | | Failure of fuel pump or pressure regulator | | Replace the fuel pump or pressure regulator |
| | | | Insufficient power supply | | Check the battery, rectifier, magneto |
| | Normal fuel pressure | Ignition with high voltage | Spark plug is too humid to work | | Remove and dry the spark plug, rotate at idle for several times |
| | | | Insulator of spark plug is leaking | | Replace the spark plug |
| | | | Loose spark plug | | Tighten up |
| Spark plug gap is too small | | | Adjust to standard value | | |

| | | | | | |
|--|--|--|---------------------------------------|--|--|
| | | | | Poor connection or electricity leakage of high voltage cap | Adjust or replace |
| | | | | Wires failure or poor connection | Check the wiring harness, throttle position sensor for connecting properly |
| | | | | Damaged cylinder/water temperature sensor | Replace |
| | | | | Failure of engine | Check the valve, piston ring, etc. |
| | | | No high voltage in ignition or cutoff | Poor connection of ignition circuit | Check and repair the circuit. |
| | | | | Excessive gap of magneto induced coil | Adjust the gap |
| | | | | Damaged ignition coil | Replace |
| | | | | Output of ignition coil is leaking | Replace the boot or ignition coil |
| | | | | Poor connection of ECU or wiring harness connectors | Check and reconnect |
| | | | | Clogged injector | Replace |
| | | | | Unstable idle speed | Insufficient power supply |
| Poor connection of ECU or injector connectors | Check and reconnect | | | | |
| Air leakage from throttle valve body | Check the pad, O-ring or throttle valve body for proper installation | | | | |
| Dirty in throttle valve body or air cleaner is clogged | Clean | | | | |
| Fuel flowing is restricted | Check the fuel pump container and fuel passage for clogs | | | | |
| Poor quality fuel | Replace the fuel to unleaded gasoline with RQ-92 or higher | | | | |
| Loose spark plug | Tighten up | | | | |
| Spark plug gap is too small | Adjust to the standard value | | | | |
| Poor connection or electricity leakage of spark plug cap | Adjust or replace | | | | |
| Insulator of spark plug is leaking | Replace the spark plug | | | | |

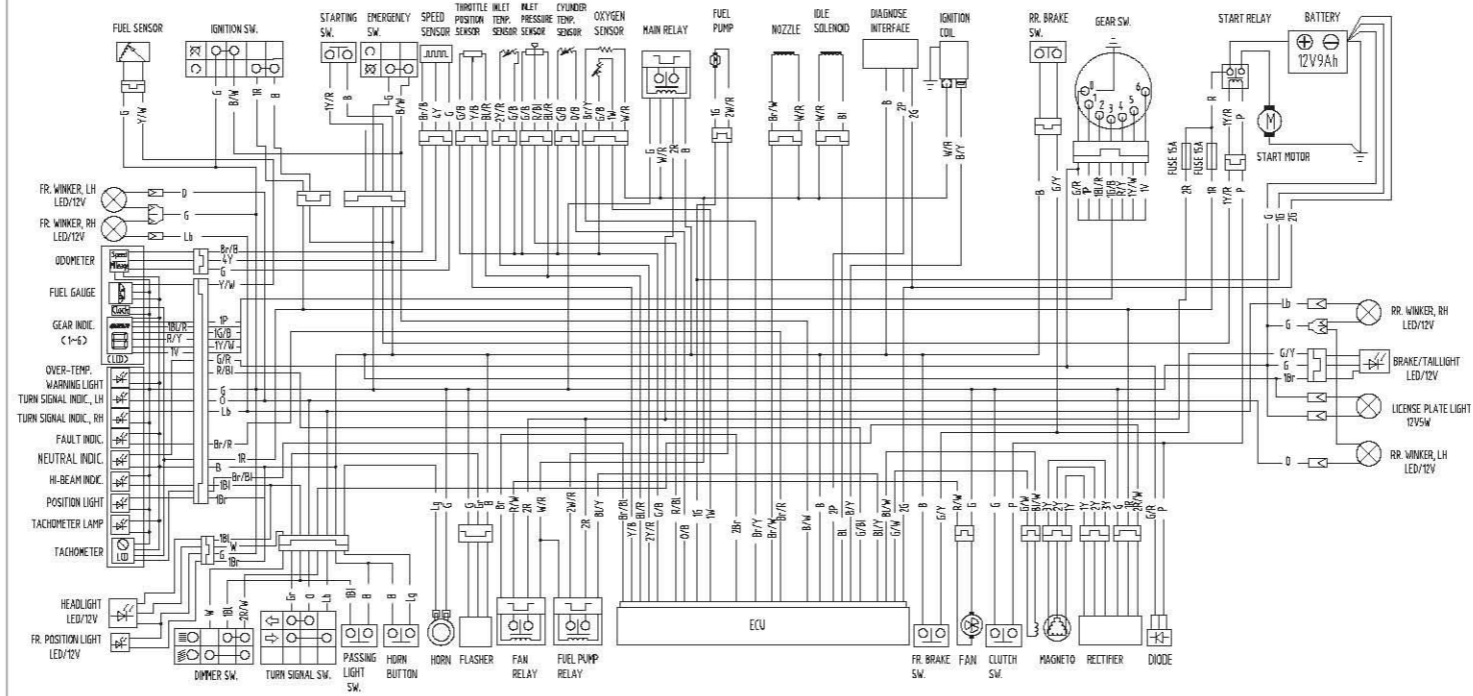
| | | |
|--|--|--|
| | Engine failure such as the valve gap is too small | Adjust the valve gap and check the engine |
| | Leakage from joints of muffler and oxygen sensor | Check the muffler pad |
| | Restricted air flowing or leakage of carbon canister valve | Check or replace |
| Abnormal or knocking noise from engine | Over-heat engine | Cool down, avoid driving at a high speed for a long time |
| | Poor spark plug | Replace |
| | Too much carbon deposits on the cylinder | Remove and clean away |
| | Engine connecting rod is worn heavily | Replace |
| | Piston pin is worn seriously | Replace |
| | Crank is worn | Replace |
| | Crankcase is worn | Replace |
| | Foreign matters get in the engine | Check and clean away |
| | Too much carbon deposits on the exhaust pipe | Clean away |
| Others | Clean off | |
| Lack of power | Air cleaner is clogged | Clean off |
| | Heavily carbon deposits in the combustion chamber and exhaust pipe | Clean away |
| | Piston and cylinder are worn, the gap is large | Replace the cylinder or piston |
| | Clutch slipping | Adjust or repair |

| | | |
|---|---|--|
| | Clogged fuel passage or lower fuel pressure | Check, clean or replace the fuel pump Assy. strainer, pressure regulator, fuel pump or injector nozzle |
| Large fuel consumption | Leakage through fuel passage | Repair |
| | Engine failure | Repair or replace |
| | Damaged cylinder/water temperature sensor | Replace |
| | Damaged fuel pump | Replace |
| | Air cleaner is clogged | Clean off |
| | Poor quality fuel | Use unleaded gasoline with RQ-90 or RQ-92 |
| Lower fuel pressure or clogged passage | Fuel pump Assy. strainer is clogged | Clean or replace. Don't contaminate the outlet port |
| | Fuel pressure regulator fails to function | Replace |
| | Fuel pump fails to function | Replace |
| Lower voltage in the system | Improper circuit connection | Check |
| | Rectifier is unable to charge | Check or replace |
| | Magneto functions improperly | Check it for short-circuit |
| | Battery is aged | Maintain or replace |
| | Electricity consumption is too large | Avoid driving at a lower speed for a long time |
| Leakage through the engine inlet manifold | Leakage from the joints of inlet manifold and cylinder head | Check the pad and O-ring, fit them properly |
| | Leakage from the joints of inlet manifold and injector | Check the O-ring |
| | Sand holes in the inlet manifold | Replace |

FAULT FEEDBACK OF EFI MOTORCYCLE

| | | | | | |
|----------------------------|--|---|--|-------------|--|
| Customer Name | | Purchase Time | | VIN | |
| Address | | ECU Number | | Engine Code | |
| Telephone | | Vehicle Type | | Mileage | |
| Fault Frequency | | <input type="checkbox"/> Often <input type="checkbox"/> Sometimes <input type="checkbox"/> Only once <input type="checkbox"/> Other | | | |
| Fault Occurrence Condition | Climate | <input type="checkbox"/> Winter <input type="checkbox"/> Summer <input type="checkbox"/> Sunny <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Other | | | |
| | Driving Terrain | <input type="checkbox"/> Highway <input type="checkbox"/> Ordinary road <input type="checkbox"/> Rough road <input type="checkbox"/> Plain <input type="checkbox"/> Highland <input type="checkbox"/> Uphill <input type="checkbox"/> Downhill <input type="checkbox"/> Other | | | |
| | Engine Temperature | <input type="checkbox"/> Cold <input type="checkbox"/> Warm up <input type="checkbox"/> Warm <input type="checkbox"/> Any <input type="checkbox"/> Other | | | |
| | Engine working condition | <input type="checkbox"/> In starting <input type="checkbox"/> After starting <input type="checkbox"/> Idling & no-load <input type="checkbox"/> In driving (<input type="checkbox"/> Constant speed <input type="checkbox"/> Acceleration <input type="checkbox"/> Deceleration) <input type="checkbox"/> Other | | | |
| Fault Phenomenon | <input type="checkbox"/> Fail to start | <input type="checkbox"/> Unable to start <input type="checkbox"/> Without starting sign <input type="checkbox"/> With starting sign | | | |
| | <input type="checkbox"/> Hard to start | <input type="checkbox"/> Low rotate speed <input type="checkbox"/> Other | | | |
| | <input type="checkbox"/> Improper idle speed | <input type="checkbox"/> Unstable <input type="checkbox"/> High <input type="checkbox"/> Low <input type="checkbox"/> Rough <input type="checkbox"/> Other | | | |
| | <input type="checkbox"/> Lack of power | <input type="checkbox"/> Hesitating acceleration <input type="checkbox"/> Tempering <input type="checkbox"/> Blowout <input type="checkbox"/> Futter <input type="checkbox"/> Knocking <input type="checkbox"/> Other | | | |
| | <input type="checkbox"/> Fire off | <input type="checkbox"/> At once <input type="checkbox"/> Acceleration <input type="checkbox"/> Oil return <input type="checkbox"/> Engage <input type="checkbox"/> Other | | | |
| | <input type="checkbox"/> Other | | | | |
| Suggestions | | | | | |

ELECTRIC DIAGRAM



SPECIFICATIONS

| | |
|-------------------------------|---|
| Vehicle type | KPM |
| 1. Dimensions | |
| Overall dim.(L×B×H), mm | 2040×755×1070 |
| Steering bar angle,° | 36 |
| Ground clearance, mm | 180 |
| Turning circle dia., mm | 4860 |
| Wheelbase, mm | 1345 |
| Kerb weight, kg | 151 |
| Max. load capacity, kg | 160 |
| Max. design speed, km/h | ≥100 |
| Economical fuel cons, L/100km | 2.9 |
| Grade ability,° | ≥22 |
| Front tyre size/pressure | 100/80R17/220kPa |
| Rear tyre size/pressure | 130/70R17/225kPa |
| Front shock absorber | Inner spring, hydraulic damping type |
| Rear shock absorber | Outer spring, hydraulic damping type |
| Front brake | Disc, by hand |
| Rear brake | Disc, by foot |
| Fuel filler capacity, L | 13 |
| 2. Engine | |
| Model | 165ML-E |
| Type | Single cylinder, 4-stroke, water-cooled |
| Bore×Stroke, mm | 65.5×58.8 |
| Displacement, mL | 198 |
| Compression ratio | 11:1 |
| Starting mode | Electric starter |
| Ignition mode | ECU |

| | |
|------------------------------|---|
| Max. net power, kW/r/min | 12.5/8000 |
| Max. torque, N. m/ r/min | 16.5/6500 |
| Engine oil | SAE 15W/40 |
| Engine oil capacity, L | 1.3 |
| Lubrication | splash |
| Fuel | Unleaded gasoline of 87 octane or above |
| Clutch type | Wet multi-plate |
| Transmission type | 6-speed, constant mesh |
| Primary gear ratio | 3.136 |
| Gear ratio, 1st(I1) | 3.077 |
| Gear ratio, 2nd(I2) | 2.000 |
| Gear ratio, 3rd(I3) | 1.400 |
| Gear ratio, 4th(I4) | 1.091 |
| Gear ratio, 5th(I5) | 0.958 |
| Gear ratio, 6th(I6) | 0.864 |
| Final gear ratio, (IF) | 3.063 |
| 3. Electric equipment | |
| Battery | MTX9AL-BS |
| Spark plug | CPR8EA |
| Headlight | 12V6W |
| Winker | 12V0.7W |
| Tail/Stop light | 12V3W/1.2W |
| Horn | Electric, 12V |
| Odometer light | LED |
| Fuse, A | 15 |

Warranty

HMC-Emission Control System Warranty Statement YOUR WARRANTY RIGHTS AND OBLIGATIONS

The U.S. Environmental Protection Agency and American Lifan, Inc. (hereinafter **MFR**), are pleased to explain this Emission Control System Warranty on your motorcycle. New motor vehicles must be designed, built, and equipped to meet U.S. EPA standards. **MFR** must warrant the emission control system on your motorcycle for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your motorcycle.

A Warranty Statement: Replacement Parts, Service and Warranty. Any certification issued under this procedure is conditional upon full compliance with the design and defects emissions warranty requirements in the Federal Clean Air Act (42 U.S.C. §7401 et set) for the applicable useful life (as specified in 40 CFR 86.402-78) in which the engine is installed.

Your emission control system may include components such as the carburetor or fuel-injection system, the ignition system, catalytic converter and engine computer. Hoses, belts, connectors and other emission-related assemblies may also be included.

Where a warrantable condition exists, **MFR** will repair your motorcycle at no cost to you, including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE

● The warranty period begins on the date the motorcycle is delivered to the first vehicle owner and subsequently continuous to the ultimate vehicle owner thereafter and covers the useful life of the HMC per for **18,000 km (11,185 miles) or 5 (five) years** from the date of initial retail delivery, whichever first occurs.

If an emission-related component on your motorcycle is defective, the defective parts will be repaired or replaced by **MFR**. This is your Emission Control System DEFECTS WARRANTY.

OWNER'S WARRANTY RESPONSIBILITIES

● As a motorcycle owner, you are responsible for the performance of the required maintenance listed in your owner's manual. **MFR** recommends that you retain all receipts covering maintenance on your motorcycle, but **MFR** cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

● You are responsible for presenting your motorcycle to a **MFR** dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

● As the motorcycle owner, you should be aware that **MFR** may deny your warranty coverage if your motorcycle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

● In case no **MFR** authorized dealer is in the vicinity, the **MFR** warranted vehicle's repair can be conducted by a local licensed mechanic workshop. **MFR** will reimburse the ultimate vehicle owner for all expenses including diagnosis, warranted part(s) and repair labor charges once paid by the ultimate vehicle owner. **MFR** will deliver warranted parts to the licensed mechanic workshop or the ultimate vehicle owner for the Warranty repair job done at the **MFR** approved licensed mechanic workshop at vehicle owner's convenience with no cost to the ultimate vehicle owner.

● The ultimate vehicle owner will be required to send the original copy of receipt of repairs conducted by the licensed mechanic workshop for reimbursement by the **MFR**.

If you have any questions regarding your warranty rights and responsibilities, you should contact MFR by the Toll Free **1-855-875-4326**. You can always contact U.S. Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105 for any Emission Control System Warranty related complaints about the MFR. But for actual Warranty related repair job, you should only contact MFR by Warranty service number printed on this Warranty statement included in the Owner's Manual or on MFR's website; or the Dealer where your vehicle is purchased, or other MFR authorized local Dealer near you.

LIMITED WARRANTY ON EMISSION CONTROL SYSTEM

MFR warrants that each new MFR motorcycle, which includes as standard equipment a headlight, taillight and stoplight, and is street legal:

A. is designed, built and equipped so as to conform at the time of initial retail purchase with all applicable regulations of the United States Environmental Protection Agency and section 42 USC §7521.

B. is free from defects in material and workmanship which cause such motorcycle to fail to conform with applicable regulations of the United States EPA for a period of use of: **1.18,000 km (11,185 miles) or 5 (five) years** from the date of initial retail delivery, whichever first occurs.

1. COVERAGE. Warranty defects shall be remedied during customary business hours at any MFR authorized dealer or a licensed mechanic located within the United States of America in compliance with the Federal Clean Air Act and applicable regulations of the United States Environmental Protection Agency. Any part or parts replaced under this warranty shall become the property of MFR.

2. LIMITATIONS. This Emission Control System Warranty shall not cover any of the following:

A. Repair or replacement required as a result of

- (1) accident;
- (2) misuse;
- (3) repairs improperly performed or replacements improperly installed;
- (4) use of replacement parts or accessories not conforming to MFR's specifications which adversely affect performance and/or;
- (5) use in competitive racing or related events.

B. Inspections, replacement of parts and other services and adjustments required for required maintenance.

C. Any motorcycle on which the odometer mileage has been changed so that actual mileage cannot be readily determined.

3. LIMITED LIABILITY

A. The liability of MFR under this Emission Control System Warranty is limited solely to the remedying of defects in material workmanship by a MFR authorized dealer at its place of business during customary business hours. This warranty does not cover inconvenience or loss of use of the motorcycle or transportation of the motorcycle to or from the MFR dealer. MFR SHALL NOT BE LIABLE FOR ANY OTHER EXPENSES LOSS OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE MFR VEHICLE FOR ANY PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

B. NO EXPRESS EMISSION CONTROL SYSTEM WARRANTY IS GIVEN BY MFR EXCEPT AS SPECIFICALLY SET FORTH HEREIN. ANY EMISSION CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE EXPRESS EMISSION CONTROL SYSTEM WARRANTY TERMS STATED IN THIS WARRANTY. THE FOREGOING STATEMENTS OF WARRANTY ARE EXCLUSIVE AND IN LIEU OF ALL OTHER REMEDIES. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

C. No dealer is authorized to modify this Limited Emission Control System Warranty.

4. LEGAL RIGHTS. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE

5. THIS EMISSION CONTROL SYSTEM WARRANTY IS IN ADDITION TO THE MFR GENERAL MOTORCYCLE LIMITED WARRANTY.

6. THE EMISSION CONTROL SYSTEM WARRANTY REPAIRS ELIGIBILITY EVALUATION

Your vehicle's eligibility for MFR Warranty repairs shall be evaluated by MFR or at MFR authorize Dealer's store where your vehicle is purchased. If Warranty repair is done at a local licensed mechanic workshop(with Lic #), the ultimate vehicle owner is required to call or email MFR and provide the following information for Warranty repairs eligibility evaluation prior to your Warranty Claims:

- Invoice number and purchase date;
- VIN number of the vehicle;
- Picture of the faulty parts;
- Labor charge for the repairs quoted by the mechanic workshop.

7. EMISSION CONTROL SYSTEM WARRANTY PARTS DELIVERY AND LABOR CHARGE REIMBURSEMENT

A. MFR will deliver the repair parts at no cost to the ultimate vehicle owner or the licensed mechanic workshop you choose (if no MFR authorized local dealer is available), using express mail once your vehicle Warranty repairs eligibility is established.

B. The ultimate vehicle owner has to mail in the actual repair cost receipts to MFR for reimbursement.

C. MFR will reimburse the ultimate vehicle owner the Warranty repair labor cost once your Warranty repair is completed by the approved local licensed mechanic workshop.

8. ADDITIONAL INFORMATION

● MFR recommend that OEM parts be used when Warranty repairs are needed. Nonetheless, any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The MFR Warranty is still effective under such circumstance. However the ultimate vehicle owner is responsible for the performance of all required maintenance listed in your Owner's Manual.

● MFR recommends that you retain all receipts covering maintenance on your vehicle, but MFR cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

9. CUSTOMER COMPLAINTS AND WARRANTY CLAIMS TRACKING

To ensure Warranty parts complains and repairs are handled and tracked securely and timely, MFR provides 'WARRANTY REGISTRATON CARD' (Appendix A) that needs to be completed by purchaser or dealer before purchaser receive MFR motorcycle. This will also register MFR with Warranty.

10. EMISSION DEFECT REPORT TO GOVERNING BODY

MFR will monitor Warranty Claims entry in a timely manner and will report to EPA once such specific emission-related defects exist in twenty-five (25) or more vehicles or engines of the same model year, per 40 CFR §85.1903(a)(2).

11. FOR CALIFORNIA OWNERS HERE IS YOUR CA SPECIAL WARRANTY TERMS REQUIRED BY CALIFORNIA AIR RESOURCE BOARD

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

●YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board is pleased to explain the emission control system warranty on your 2021 motorcycle. In California, new motor vehicle must be designated, built and equipped to meet the State's stringent anti-smog standards. MFR must warrant the emission control system on your motorcycle for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your motorcycle.

Your emission control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic converter, and engine computer. Also included may be hoses, belts, connectors and other emission-related assemblies. Where a warrantable condition exists, MFR will repair your motorcycle at no cost to you including diagnosis, parts and labor.

●MANUFACTURER'S WARRANTY COVERAGE

For 5 years or 18,000 kilometers (11,185 miles), (whichever first occurs);

If any emission-related part on your motorcycle is defective, the part will be repaired or replaced by MFR. This is your emission control system DEFECTS WARRANTY.

●OWNER'S WARRANTY RESPONSIBILITIES

I. As the motorcycle owner, you are responsible for the performance of the required maintenance listed in your owner's manual. MFR recommends that you retain all receipts covering maintenance on your motorcycle, but MFR cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

II. You are responsible for presenting your motorcycle to an MFR dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

III. As the motorcycle owner, you should be aware that MFR may deny your warranty coverage if your motorcycle or part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

●FOLLOWING ADDITIONAL INFORMATION FOR EMISSION CONTROL SYSTEM WARRANTY PARTS ARE FOR CA VEHICLE OWNERS

a. Any warranted part scheduled for replacement as required maintenance is warranted up to the first scheduled replacement point.

b. Repair or replacement of a warranted part is to be performed at no charge at a warranty station, except in an emergency situation when a warranted part or a warranty station is not reasonably available to the owner. In an emergency, repairs may be performed at any available service establishment, or by the owner, using any replacement part. The MFR will reimburse the owner for the expenses, including diagnostic charges for the emergency repair or replacement, not to exceed the MFR's suggested retail price for all warranted parts replaced and labor charges based on the MFR's recommended time allowance for the warranty repair and the geographically appropriate hourly labor rate. The owner may reasonably be required to keep receipts and failed parts in order to receive compensation. A lack of availability of parts or the incompleteness of repairs within a reasonable time, not to exceed 30 days, also constitutes an emergency.

- c. The warranty period shall begin on the date the vehicle is delivered to an ultimate purchaser.
- d. The vehicle is designed, built and equipped so as to conform, at the time of sale, with all applicable regulations adopted by the Air Resources Board, and is free from defects in materials and workmanship which cause the failure of a warranted part.
- e. A warranted part which is scheduled for replacement as required maintenance is warranted for the period of time prior to the first scheduled replacement point.

If you have any questions regarding your warranty rights and responsibilities, you should contact the MFR at 1-855-875-4326 or the California Air Resource Board at 9528 Telstar Avenue, El Monte, CA 91731.

12. MANUFACTURER INFORMATION

**IMPORTER
AMERICAN LIFAN, INC
9272 HYSSOP DRIVE,
RANCHO CUGAMONGA, CA
UNITED STATES 91730**