

KAYO MOTO

K-SERIES

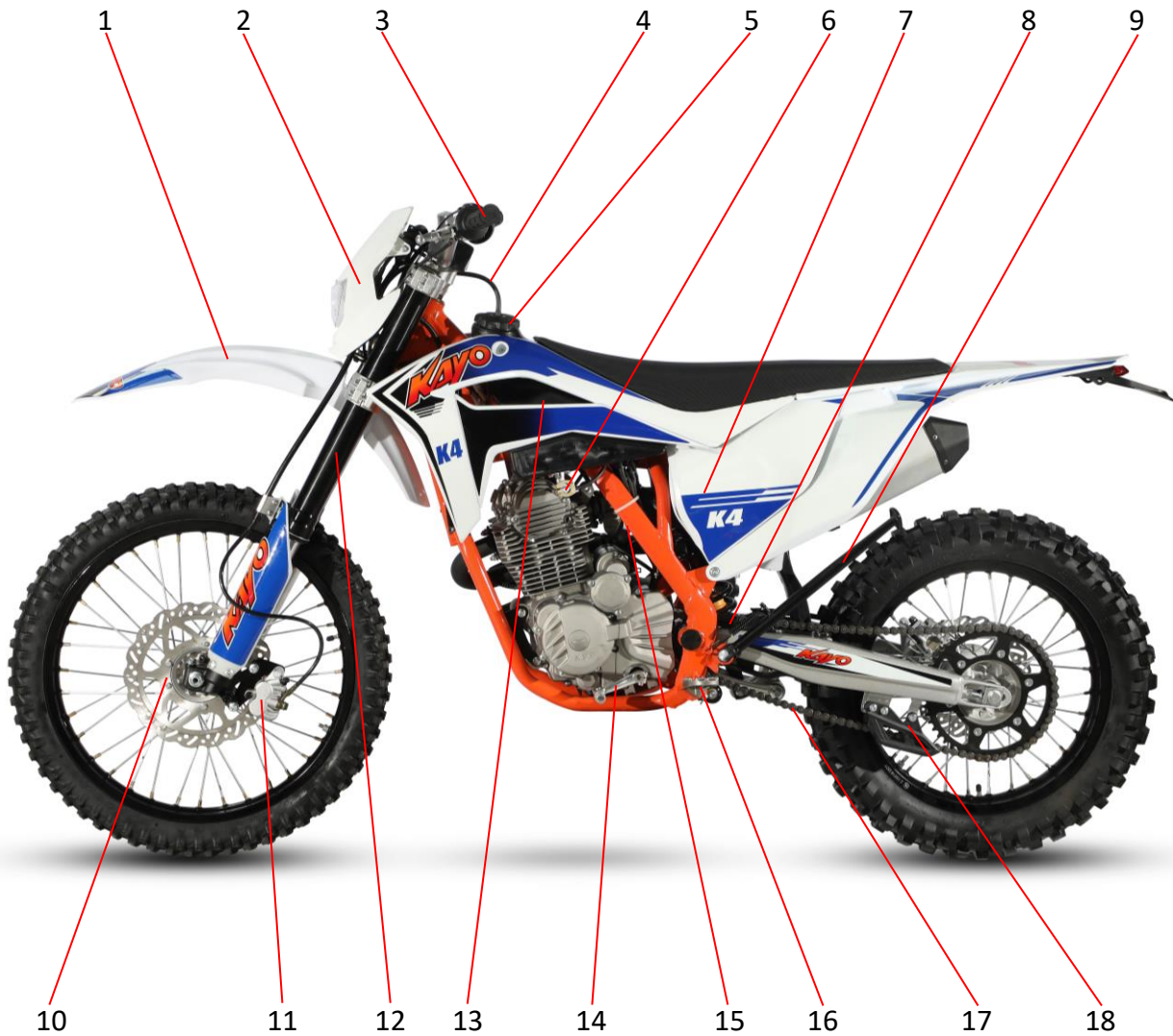
USER'S MANUAL

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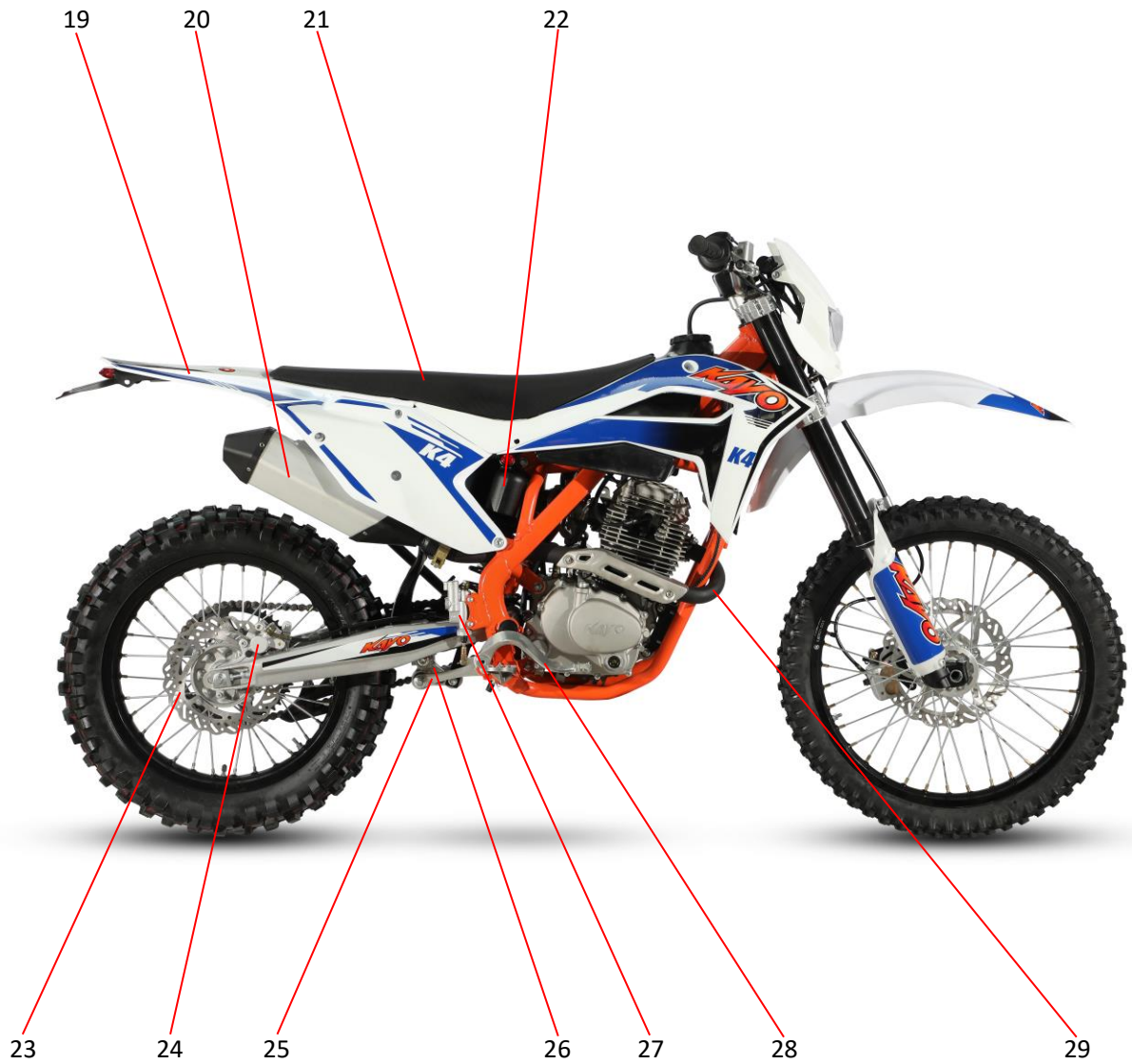
VEHICLE INTRODUCTION

COMPONENTS AND POSITIONS	6
VIN CODE AND ENGINE NUMBER	14
VEHICLE PARAMETERS	15
FASTENER TORQUE LIST	23

K4 COMPONENTS AND POSITIONS

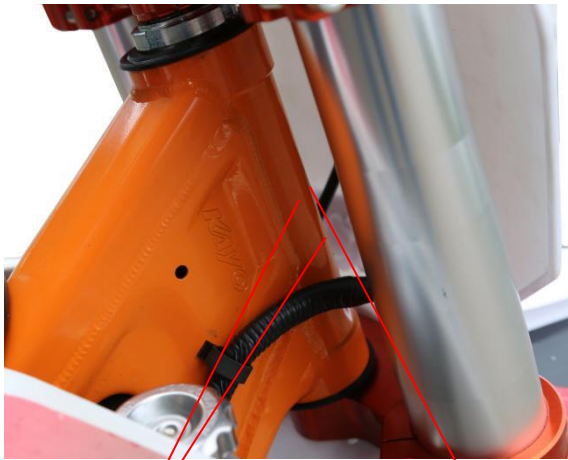


NO.	PARTS NAME	NO.	PARTS NAME
1	Front fender	10	Front brake
2	Front plate	11	Front brake caliper
3	Handlebar	12	Front shock
4	Vent pipe	13	Fuel tank
5	Fuel tank cap	14	Shift Pedal
6	Fuel Tank Switch	15	Carburetor
7	Air Filter	16	Pedal
8	Chain Guide	17	Chain
9	Kick stand	18	Chain Protector



NO.	PARTS NAME	NO.	PARTS NAME
19	Rear fender	25	U-style linkage
20	Exhaust pipe muffler	26	Triangle linkage
21	Seat	27	Rear brake oil cup
22	Rear shock	28	Brake pedal
23	Rear Brake Disc	29	Exhaust pipe
24	Rear brake caliper		

VIN CODE AND ENGINE NUMBER



1

2



3



3

1	VIN CODE	Vin code is located on the head pipe and name plate.
2	NAME PLATE	Name plate located on the head pipe.
3	ENGINE NUMBER	For 2021model K6/K6-R engine No. Is located on engine box; For K2、K4 engine No. Is inside of gear shifter.

K4 DIMENSIONS AND QUALITY PARAMETER	
L×W×H (mm)	2145×810×1220
Wheelbase (mm)	1455
Curb weight (kg)	115.5
Tire Size	Front80/100-21;Rear110/100-18
Seat Height (mm)	925
Min ground clearance (mm)	275
Fuel capacity (L)	7.5
ENGIN PARAMETER	
Type	Single cylinder、 Four stroke 、 Air Cooled 、 Vertical engine
Clutch Type	Wet/ Multi-disc Clutch
Bore×Stroke	72mm×61.4mm
Lubrication mode	Pressure lubrication、 Splash lubrication
Oil Capacity	1000ml
Oil Grade	SJ 5W-40
Displacement	249.9cc
Max power (kw/r/min)	15/8500
Max Torque (N•m/r/min)	18/6500
Compression ratio	9.25:1
Shift type	Constant mesh, two stage transmission ,5-speed Gearshift, International standard1-N-2-3-4-5
Start method	Electric
Fuel Control System	PE28Carburetor
Battery	12V7Ah lithium battery,with over-discharge protection
Chain	#520H;13T/45T
FRAME/SHOCK/BRAKE/WHEEL SYSTEM PARAMETER	
Frame type	Central double cradle High strength steel pipe frame
Front shock	single adjustable& inverted L=880mm
Rear shock	double adjustable with nitrogen air bag style L=465mm
Swing Arm	High Strength steel L=580mm with improved progressive forging aluminium connecting rod system
Handlebar	Aluminum alloy variable diameter handlebar
F/R rims	Front1.60×21,Rear2.15×18;high-strength black aluminum rims, abrasive-sprayed wheel

Front brake system	Double Piston pump hydraulic brake system, brake disc Φ 270mm
Rear brake system	Single Piston pump hydraulic brake system, brake disc Φ 240mm
Others	
Air Filter Type	Sponge filter
Fuel type	92# (and above)grade gasoline
Seat capacity	One person (Driver)
Max load	120kg

Edited Fastener Torque List for Kayo K4 250

NOTE:

I deleted the screws that are not in a K4 250 (Watertank for example)

I changed the order by Nm, so that the wrench isn't changed all the time, instead you go around the bike.

See original sheet on the next page.

NO	Item	Specification	Qty	Torque (Nm)
1	Brake Pedal head mounting screw	M5×10 Full thread	2	4 to 7
2	Fuel tank switch mounting screw	M5×12 Full thread	2	4 to 7
3	L/R guard plates + fuel tank connection screw	M5×10 Full thread	6	4 to 7
4	Front disc brake mounting bolt	M6×16	6	7 to 11
5	gear shifter mounting bolt	M6×25	1	7 to 11
6	Chain guide mounting screw	M6×12	3	7 to 11
7	Rear Brake disc mounting bolt	M6×16	4	7 to 11
8	Rear Brake pump mounting bolt	M6×16 Full thread	2	7 to 11
9	Brake Pedal Bolt	M6×25 Full thread	1	7 to 11
10	Ignition coil mounting bolt	M6×20	2	7 to 11
11	Plastics mounting bolt	M6×16 Full thread	10	7 to 11
12	CDI mounting bolt	M6×16 Full thread	2	7 to 11
13	Voltage stabilizer mounting bolt	M6×25 Full thread	2	7 to 11
14	Switch lock bracket bolt	M6×12	2	7 to 11
15	Front fender bolt	M6×12	4	7 to 11
16	Front brake caliper mounting bolt	M8×40 Full thread	2	20-32
17	Upper raiser mounting screw	M8×30	4	20-32
18	Foot Pedal mounting bolt	M8×20 Full thread	2	20-32
19	Engine Hanger Bolt	M8×60	3	20-32
20	Exhaust pipe mounting nut	M8	2	20-32
21	Brake Stop Bolt	M8×20 Full thread	1	20-32
22	Spark plug	/	1	25-30
23	Rear sprocket mounting screw	M8×31 10.9Class	6	27-35
24	Bolt for chain adjuster	M10×40×1.25 S14	2	36-55
25	Nut for chain adjuster	M10×1.25	2	40-70
26	Engine mounting nut	M10×1.25	2	40-70
27	Rear brake and frame connection bolt	M10×50×1.25	1	40-70
28	Oval head Bolt	M10×42×1.25 + Φ10×28	1	40-70
29	triangle linkage mounting nut	M12×1.25	3	68-85
30	Front axle mounting nut	M16×1.5×H14	1	175-218
31	Swing arm spindle mounting nut	M16×1.5×H14.8	1	175-218
32	Rear axle nut	M22×1.5	1	452-550

Fastener Torque List

NOTE: Before installing the thread, apply anti-rust grease on the thread and the joint surface

NO.	Item	Specification	Qty	Torque (N•m)
1	Front brake caliper mounting bolt	M8×40 Full thread	2	20~32
2	Front disc brake cover mounting screw	M6×16	2	7~11
3	Steering column screw	Aluminum silver	1	/
4	Upper raiser mounting screw	M8×30	4	20~32
5	Front disc brake mounting bolt	M6×16	6	7~11
6	Front axle mounting nut	M16×1.5×H14	1	175~218
7	Foot Pedal mounting bolt	M8×20 Full thread	2	20~32
8	gear shifter mounting bolt	M6×25	1	7~11
9	Engine Hanger Bolt	M8×60	3	20~32
10	Engine mounting nut	M10×1.25	2	40~70
11	Water tank mounting screw	M6×25	4	7~11
12	Exhaust pipe mounting nut	M8	2	20~32
13	Chain guide mounting screw	M6×12	3	7~11
14	Swing arm spindle mounting nut	M16×1.5×H14.8	1	175~218
15	triangle linkage mounting nut	M12×1.25	3	68~85
16	Bolt for chain adjuster	M10×40×1.25 S14	2	36~55
17	Nut for chain adjuster	M10×1.25	2	40~70
18	Rear brake and frame connection bolt	M10×50×1.25	1	40~70
19	Oval head Bolt	M10×42×1.25+Φ10×28	1	40~70
20	Rear Brake disc mounting bolt	M6×16	4	7~11
21	Rear sprocket mounting screw	M8×31 10.9Class	6	27~35
22	Rear axle nut	M22×1.5	1	452~550
23	Rear Brake disc cover mounting bolt	M6×12	4	7~11
24	Brake Pedal head mounting screw	M5×10 Full thread	2	4~7
25	Brake Stop Bolt	M8×20 Full thread	1	20~32
26	Rear Brake pump mounting bolt	M6×16 Full thread	2	7~11
27	Brake Pedal Bolt	M6×25 Full thread	1	7~11
28	Ignition coil mounting bolt	M6×20	2	7~11
29	Plastics mounting bolt	M6×16 Full thread	10	7~11
30	CDI mounting bolt	M6×16 Full thread	2	7~11
31	Voltage stabilizer mounting bolt	M6×25 Full thread	2	7~11
32	Switch lock bracket bolt	M6×12	2	7~11
33	Fuel tank switch mounting screw	M5×12 Full thread	2	4~7
34	Front fender bolt	M6×12	4	7~11
35	L/R guard plates and fuel tank connection screw	M5×10 Full thread	6	4~7
36	Cross PAN head tapping screw	ST 4.2×12	10	/
37	Flat Head Machine Screw	M6×10	4	/
38	Spark plug	/	1	25~30

OPERATING INSTRUCTIONS

PREPARATION BEFORE RIDING.....	25
STEPS FOR STARTING.....	29
VEHICLE RUNNING-IN	29
VEHICLE CLEANING.....	31
USE AND STORAGE INSTRUCTIONS.....	31

PREPARATION BEFORE RIDING

1、 Inspection of Fuel amount in Tank

Open the motorcycle fuel tank cap, shake the handlebars from side to side, observe the liquid level in the fuel tank and listen to learn the approximate fuel remaining in the fuel tank. If the fuel is low, please add fuel to ensure normal riding.



2、 Inspection of Tank Switch

The fuel tank switch has three positions, from top to bottom are RES (auxiliary fuel tank is open), OFF (fuel tank switch is closed), ON (fuel tank switch is open). If the tank switch is in the OFF position, there is no fuel in the carburetor and the engine can not work. If there is very little fuel in the tank, switch the tank to the "RES" Position and refuel immediately. If the fuel is sufficient and the motorcycle is in good condition, the switch should be turned to the ON position.



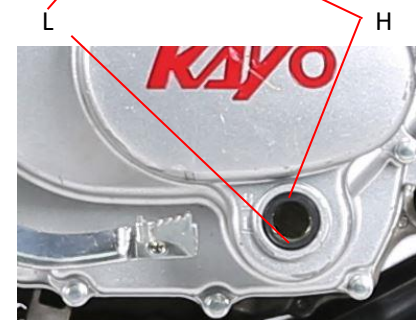
CAUTION: Always turn the oil tank switch to the "OFF" position after the engine off.

3、 Inspection of Engine Lubricating Oil

The lubricating oil (or engine oil) in the engine can be checked through the oil dipstick on the right side of the engine. Unscrew the oil dipstick and observe the traces of the lubricating oil level on the dipstick. If the liquid level is close to or below the "L"(that is, the minimum oil level line), you should add lubricating oil immediately till the level close to or slightly below the oil level "H".

L: the lowest required oil level line

H: the highest capacity oil level line.



4、 Inspection of Brake fluid oil

Observe the brake fluid oil level through the oil cup observation hole. If the liquid level is lower than half position of the observation hole, that is, the "LOWER" position, you need to add brake fluid.

CAUTION: Even if the motorcycle has not been used for a long time, the brake fluid should be replaced once a year at least.

CAUTION: Please check the brake fluid level from time to time to keep the fluid level at a safe position, check the oil circuit and connection points for damage or not. If there is any damage, please replace it in time,

Check whether the main pump/caliper is damaged, if so, please replace it in time.

NOTE: Do not open the brake fluid oil cup for a long time.



K6-R front brake oil cup observation hole

K2、 K4、 (21 MODEL) K6 front brake oil cup observation hole



5、 Inspection of brake caliper brake pad wear condition

Check the thickness of the brake pads of the brake caliper, If the thickness of the brake pads is lower than the minimum thickness, the entire set of brake pads should be replaced immediately. Check whether the caliper brake pads are damaged or cracked. If there are damages or cracks, the brake pads also need to be replaced.

Minimum thickness of brake pads:

front brake MIN=1mm

Rear brake MIN=1mm

CAUTION : The replacement of brake pads need to be conducted completely. If you are not sure the replacement conducted well, please go to KAYO nominated Service Centre, our professional and technical personnel will support you.



K2、 K4、 (21Model)K6、 K6-R Rear brake oil cup observation hole

6. Inspection of Brake System Wear and Tear

Check whether the surface of the brake disc is damaged or not and check the thickness.

If the disc brake disc is less than the limit thickness of the brake disc, it must be replaced immediately.

Limit thickness of brake disc:
 Front Brake Disc MIN=3.5mm
 Rear Brake Disc MIN=3.5mm

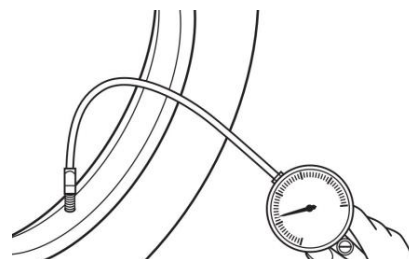


6、 Inspection of Tire Pressure

Observe whether there is a flat tire and other deformation phenomenon. If necessary, use a pressure gauge to check whether the pressure level of the tires meets the standards. If there are frequent problems with low pressure, check whether the tires are leaking or not. If the tire is leaking, please contact KAYO dealer.

Recommended pressure:

	K2	K4	(21model)K6	K6-R
F Tire	225kPa	225kPa	225kPa	225kPa
R Tire	280kPa	280kPa	280kPa	225kPa



NOTE: This checking of pressure should be carried out under cooling conditions. If the tire pressure is not suitable for use, it will make the riding worse, and cause adverse effects such as tire eccentric wear.

8、 Inspection of Spoke Tension

Use Your thumb and forefinger to move the two adjacent spokes to check tension level of the spokes. If you find any loose or weak spokes, check all the spokes and both wheels, If there is any further problem, please contact the KAYO or KAYO dealer.



9、 Inspection of the Chain and its Supporting Facilities

Check whether the chain is tightened. If the chain is too loose, you can adjust it with a chain adjuster to a proper position. It is not necessary to set it too tight.

NOTE: If the chain needs to be tightened frequently, or if you find any signs of wear on the front sprocket, rear sprocket chain, please contact KAYO dealer for a thorough inspection to avoid safety problems.



Chain adjuster

10、 Inspection of the Front Shock Absorber

When the temperature is high, the air inside of the shock absorber will expand when heated,so the exhaust screw on the upper of the front shock absorber will be used for exhausting;otherwise the oil seal will easily expand and damage the shock absorber.

Mark:K2 model is not applied for this term because the shock absorber is nonadjustable.

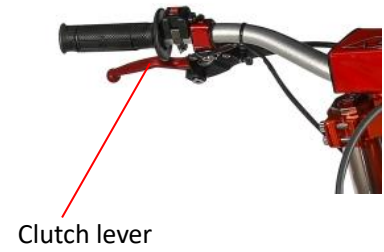


Exhaust screw

The steps of Electric Start are as follows:

1. Turn the oil tank switch to the "ON" position.
2. Open the electric lock.
3. Pinch the clutch lever with the left hand.
4. Pinch the brake lever with the right hand.
5. Long Push the ignition switch with the fingers of the right hand.
6. Release the ignition switch after the engine works properly.
That's all for starting.

CAUTION: When starting, you should pinch the brake with your left hand to prevent sudden starting when the transmission is with gear.



VEHICLE RUNNING-IN

Motorcycle engines have a lot of relative moving parts, such as pistons, piston rings, cylinder blocks, meshing transmission gears, etc. Therefore, in the initial stage of use, the engine must be standardized. The running-in can make the moving parts adapt to each other, correct the working gap, and form a good smooth friction surface that can withstand larger loads. Only after standard running-in can the engine have excellent performance and reliability.

The recommended running-in steps are as follows:

1. 0-4.5h stage: Using under the throttle level of 50% ~ 75%, the speed should be changed frequently to avoid the long time working at the same throttle level, Let the engine rest and cool down for 5 ~ 10 minutes after each 1-hour work. Avoid sudden acceleration in driving, keep the Do not accelerate suddenly to protect your throttle, keep the throttle steady.
2. 4.5-7h stage: Using under the throttle level of 50% ~ 75% throttle and the motorcycle can work for a long time at the same accelerator. During work period, the throttle can be up to 100%, but last no more than 5 ~ 10 seconds;
3. 7-10h stage: Using under the throttle level of 75% ~ 100%
4. More than 10h: increase the speed to 60-80km/h, make full use of engine performance

DANGER: When riding a motorcycle, please do not speed up regardless of the consequences, this behavior is easy to cause engine damage and safety accidents therewith. So, please ride the vehicle properly.

VEHICLE CLEANING

The cleaning of the vehicle is also an important part of the daily use and maintenance of the motorcycle. Timely cleaning can keep your car in a good state of motion and prolong its service life. You can clean your motorcycle through the following steps:

1. Cover the exhaust system to prevent water from entering;
2. Seal the electric door lock and all connectors with tape;
3. Use a low-pressure water spray device to remove the mud and dirt on the surface;
4. Use special motorcycle cleaner to clean particularly dirty places;
5. Flush with low-pressure water flow;
6. Let the motorcycle air dry naturally;
7. Drive the motorcycle for a short period of time until the engine reaches the working temperature;
8. Lubricate the chain and all other parts that need to be lubricated.

WARNING: Never use high-pressure water to clean the vehicle. Avoid direct contact with coils, pipe plugs, carburetor or any electrical components.

USE AND STORAGE INSTRUCTIONS

When the motorcycle has not been using for a long time and you plan to store them, please follow below steps:

1. Block the exhaust port of the muffler tube;
2. Clean the motorcycle
3. Wait for the motorcycle to dry naturally
4. Start the engine for nearly 5 minutes to heat the lubrication, and then drain out the oil from engine.
5. Refuel the engine with new lubrication.
6. Empty the fuel tank (if not used for a long time, the gasoline will deteriorate);
7. Lubricate the chain;
8. Apply oil to all unpainted metal surfaces to avoid rust;
9. When storing the motorcycle, keep the motorcycle wheels suspended. If this condition cannot be achieved,
 can use cardboard to pad under the motorcycle tires;
10. Cover the motorcycle to prevent dust and dirt.

NOTE: When applying anti-rust oil, please do not splash the oil on the brake and rubber parts, otherwise the rubber may be aged.

Steps for using after long time storage:

1. Take out the blockage in the exhaust port of the muffler tube.
2. Tighten the spark plug.
3. Fill the fuel tank with fuel.
4. Check the items that need to be checked before daily driving.
5. Routine lubrication for motorcycles.

MAINTENANCE SCHEDULE

	Every 10 hours/after every race	Every 20 hour	Every 30 hours
	1 hour after each ride		
Check and charge the battery		●	● ●
Check the front disc brake plate		●	● ●
Check the rear disc brake plate		●	● ●
Check the front and rear brake discs		●	● ●
Check the brake tubing for damage or leakage		●	● ●
Check the rear disc brake fluid level		●	● ●
Check the free-play of the brake pedal		●	● ●
Check the frame and Swing Arm		●	● ●
Check the alloy swing arm bearing loose or not			●
Check the top connection of the shock absorber		●	● ●
Check the shock absorber linkage		●	● ●
Check the tire surface condition	○	●	● ●
Check the tire pressure	○	●	● ●
Check the hub bearing loose or not		●	● ●
Check the wheel hub		●	● ●
Check the rim edge pulsation	○	●	● ●
Check the spoke tension	○	●	● ●
Check the chain、Rear chain、engine sprocket, guide sleeve and chain guide		●	● ●
Check the chain tension	○	●	● ●
Lubricate all moving parts (chain, handlebars, etc.) and check if operate smoothly		●	● ●
Check the disc brake fluid level		●	● ●
Check the free play of brake handlebar		●	● ●
Check the steering head bearing loose or not	○	●	● ●
Check the valve clearance	○		●
Check the clutch			●
Change water pump cover seal and shaft seal ring			●
Replace the oil and oil filter, clean the oil filter	○	●	● ●
Check all hoses (Fuel, exhaust, etc.) and bushings, whether there are cracks, leaks and	○	●	● ●
Check the cable to ensure that there isn't any damage and sharp bend		●	● ●
Check whether the throttle valve cable is intact, no sharp bend, and set correctly	○	●	● ●
Clean air filter and air filter tank		●	● ●
Check whether screws and nuts are tightened	○	●	● ●
Replace the fuel filter	○	●	● ●
Check the carburetor idle speed	○	●	● ●
Final inspection: check whether the vehicle is running safely and conduct a test	○	●	● ●

- One-off interval
- Periodic interval

ATTENTION: This table just for reference. Please adjust the maintenance schedule of the motorcycle according to the specific model and use situation.

WARNING: For the inspection, adjustment and replacement of the engine parts, please consult Kayo Service Center to avoid damage.

SPECIFIC MAINTENANCE COMPONENT

1、Clutch Lever

Clutch Lever gripe strength can be adjusted according to your actual needs: by adjusting the nut, you can change the clutch grip . This adjustment does not change the internal structure of clutch , so will not affect the clutch normal use .

NOTE:The tightening force of the clutch handle should not be adjusted too much, otherwise it is easy to break the clutch line.

2、Clutch disc

About the inspection, adjustment and replacement issue, please refer the manual,if you are not sure the completion please contact KAYO dealer.

3、Throttle handlebar

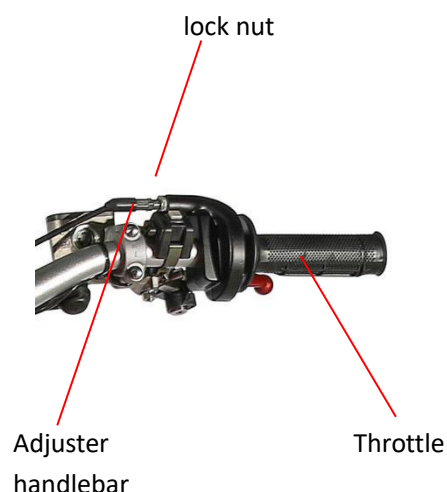
Turn the Throttle handlebar by hand to check whether it turns smoothly or not.

Check whether the throttle cable has an idle stroke of 3~5mm and a rotation stroke of 10~20mm;

If the turning stroke does not meet the requirements, adjust it according to the following steps:

Loosen the lock nut at the end of the throttle cable,

Rotate the adjuster to achieve the best use effect,then tight the lock nut.



4、Spark plug

The engine spark plug torque is 25~30N•m.

The spark plug must be disassembled regularly to check the distance between the electrodes (0.6 ~ 0.7mm). If the spark plug contains oil or cinder, wipe it off with a wire brush or similar. Use a measuring instrument to measure the distance between the electrodes and adjust them to prevent abnormal bending of the external electrodes. If the spark plug electrode is rusty, damaged, or the insulator is broken, the spark plug must be replaced.

NOTE: The spark plug should be checked every 10 hours (cumulative) and replaced every 20 hours (cumulative).

NOTE: If the engine performance drops, replace the spark plug to restore normal performance.



5、 Air Filter

The air filter should be checked on time, steps are as follows:

1. Remove the seat cushion;
2. Remove the air filter cover;
3. Check the air filter.

Installation and restoration are carried out in the reverse order of removal.

DANGER: The air filter should be cleaned regularly to prevent dust or dirt from entering the engine, causing wear or damage to the engine. Cleaning the filter should be carried out under ventilated conditions, and ensure that there are no sparks, flames and strong heat sources (such as a high-power light bulb) in the workplace. Do not use gasoline to clean the filter, this behavior can easily lead to accidents.

WARNING: If the filter is found to be damaged, it must be replaced immediately, otherwise it will cause dirt to enter the carburetor, creating a risk of accident. When installing the air filter, all connections and threads are required to be lubricated.



6、 Carburetor

The idling speed of the carburetor can be adjusted through the idle speed adjusting screw and the mixing ratio screw.

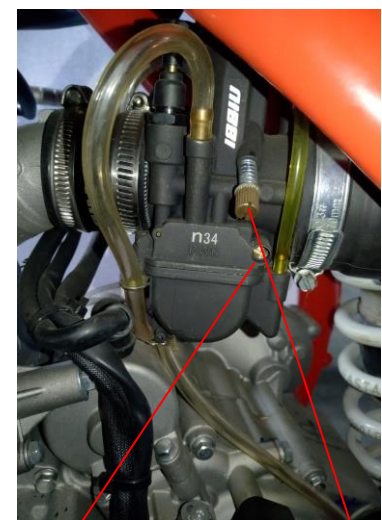
The steps are as follows:

- ◆ Turn the mixing ratio screw clockwise until it reaches the top of its stroke, and then reverse one and a quarter turn;
- ◆ Adjust the idle speed adjustment screw to ensure that the engine can run at a certain speed when the throttle lever is completely loosened;
- ◆ Adjust the idle speed adjustment screw to reduce the engine speed as much as possible;
- ◆ Adjust the mixing ratio screw to increase the engine speed as much as possible;
- ◆ Repeat the above steps until a satisfactory speed is obtained;
- ◆ Check whether the throttle cable is working properly.

DANGER: Driving a motorcycle with a damaged throttle cable is undoubtedly a very dangerous behavior. The normal throttle cable should have a stroke of at least 10mm. Start the engine and turn the handlebar left and right. If the engine stalls or accelerates due to the movement of the handlebar, the throttle cable may be improperly adjusted or damaged.

Make sure that the throttle cable is normal before driving the motorcycle.

NOTE: 21 model K6(EFI version) has no carburetor, so this item can be ignored.



Mixing ratio screw Idle speed adjustment screw



7、 Engine Lubrication Oil

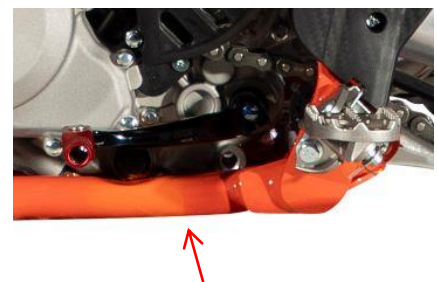
Lubricating oil is a very important part of the normal working process of the engine. Insufficient lubricating oil, deterioration or contamination can cause engine wear and even damage.

Oil level check

- ◆ If the motorcycle has just been used, you need to wait a few minutes after the engine is turned off before checking;
- ◆ Observe the amount of lubricating oil in the engine through the oil level hole;
- ◆ The lubricating oil level in the engine should be between the maximum value and the minimum value, that is, between "H" and "L";
- ◆ If the oil level is too high, remove excess lubricating oil through the oil drain bolt;
- ◆ If the oil level is too low, add lubricating oil through the cover.

NOTE: The added lubricating oil should be the same grade as the original organic oil in the engine.

NOTE: The oil drain bolt of K2 is located on the left side of the engine, and for K4 and K6-R are located under the engine.



K4 21

The recommended oil brands and grades are:

Shell Lubricants SJ 5W-40

Maximum oil capacity: 1000ml for K2 and K4 models; 1500ml for 21 model
K6 and K6-R

Lubricant replacement

Lubricating oil needs to be changed regularly to ensure the service life of the engine. The replacement steps are as follows:

- ◆ Start the engine and let it work for 5 minutes to mix the sediment with the oil;
- ◆ Turn off the engine and place a container under the engine;
- ◆ Unscrew the oil drain bolt and place the motorcycle above the container so that all the engine oil can be drained smoothly;
- ◆ Open the oil injection hole, so that the oil can be better discharged;
- ◆ Clean the oil drain bolt;
- ◆ Tighten the oil drain bolt with a torque of 68~84N•m;
- ◆ Pour new lubricating oil through the oil injection hole;
- ◆ Start the engine and observe the oil level. If the oil is insufficient, turn off the engine, continue to pour lubricating oil, and repeat the operation 3 to 4 times until the oil level meets the requirements;
- ◆ Close the oil filling hole and tighten the hole cover.

8、 Pistons and piston rings

Involving the inspection, adjustment and replacement of this item, please refer to the engine maintenance manual for details. If you are not sure of completing it independently, please contact the KAYO dealer.

9、 Cylinder, cylinder head and exhaust valve

Regarding the inspection, adjustment and replacement of this item, please refer to the engine maintenance manual for details. If you are not sure of completing it independently, please contact the KAYO dealer.

10、 Exhaust system inspection

The exhaust pipe and the muffler tube can guide the gas emission and reduce the noise.

If the exhaust pipe is rusted or ruptured or damaged by impact, please replace it with a new one immediately. If the noise is too high or the engine performance is degraded, replace the muffler tube.

For the cleaning of the exhaust system, please consult with KAYO dealers before proceeding.

If you need to replace the muffler tube, please follow the steps below:

- ◆ Remove the seat cushion;
- ◆ Remove the right rear guard plate;
- ◆ Unscrew the fixing bolts of the muffler tube and the attached beam;
- ◆ Pull out the muffler tube backwards;
- ◆ Replace the muffler tube and install the fasteners;

NOTE: K6-R models also need to unscrew the bolts connecting the muffler tube and the frame and loosen the muffler tube and the exhaust pipe connection buckle.

Fastener installation is carried out in the reverse order of removal.

11、 Crankshaft Connecting Rod and Bearing

Involving the inspection, adjustment and replacement of this item, please refer to the engine maintenance manual for details. If you are not sure of completing it independently, please contact the KAYO dealer.

12、 Start Lever, Shift Pedal and Brake Pedal

Use oil or grease to lubricate the movement and joints, because excessive lubrication may cause the boots to slip on the pedals and affect the riding.

Muffler tube



15、 Brake system control part inspection

Front brake handlebar:

The front brake handlebar can be adjusted to suit the operating habits of different people.

Rear brake pedal:

Under normal circumstances, the brake pedal should have a free stroke of 10-25 mm. Check the brake lever and pay attention to whether the stroke is correct.

Danger: Please test the brake system (including front brake and rear brake) every time the before start the motorcycle . If feel soft when you pinch the brake lever or step on the brake pedal, there may be air in the corresponding pump or oil circuit, or the corresponding one or more brake system parts are in poor condition. Once the above situation occurs, please check the brake system immediately and contact the KAYO dealer.



16、 Brake system wear inspection

Check the thickness of the brake pads of the front and rear brake calipers. The thickness should be no less than 1mm. If the thickness of the brake pads is less than or equal to the minimum thickness, whole set of brake pads should be replaced immediately.

Check the thickness of the front and rear brake discs, if the measured result is less than the limit thickness of the brake discs. The brake disc should be replaced immediately.

Limit thickness of brake disc: front MIN=3.5mm; rear MIN=3.5mm

Danger: If it is found that the brake system is too worn, the corresponding parts should be replaced immediately to avoid accident. The specific replacement should be carried out after consulting the Kayo dealer.



brake disc

17、 Brake fluid

The brake fluid must be checked and replaced regularly. If the brake fluid is mixed with water, soil or other particles, the brake fluid should be replaced. It is recommended to use DOT4 brake fluid.

Danger: Do not mix different types of brake fluid and pour it into the brake system for use. The use of brake fluid must meet the braking requirements. Please do not use the brake fluid in an unsealed container. The brake fluid may deteriorate when exposed to the air, which will affect the braking effect. Do not use used brake fluid



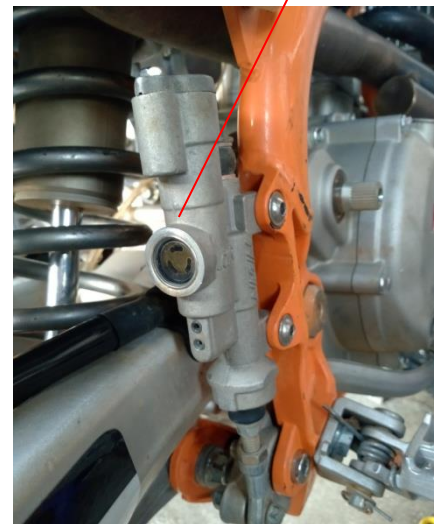
brake fluid level observation hole

18、 Brake fluid volume inspection

Check the brake fluid level through the brake fluid level observation hole. The liquid level should exceed half of the observation hole, that is, the liquid level should be higher than "LOWER". If the brake fluid is insufficient, it should be added immediately.

Note: Do not splash the brake fluid on the paint surface, which may cause corrosion.

Danger: Please check whether the brake fluid is leaking or the brake fluid pipe is damaged. If there is a leakage problem, please contact Kayo dealer.



19、 Brake pump piston and dust cover inspection

For the inspection, adjustment and replacement of this item, please consult Kayo dealer before proceeding.

20、 Spokes and wheels

The spokes should be evenly tightened to avoid tire center deviation. If the center of the tire is shifted, part of the spokes will be elongated, which is easy to deform or even break.

If the the center of the tire is slightly off center, it can be corrected by loosening or tightening some spokes with a tension wrench. If the tire is bent or severely deformed, replace the tire immediately.

Warning: The inspection and adjustment of spokes and wheels



requires relevant professional knowledge. We recommend that you consult with Kayo dealers or conducted at the dealers' site.

21、 Chain guide system inspection

Check the wear condition of the chain guide sleeve and the chain protector on the flat fork. Under normal circumstances, these two can play a role in guiding the movement of the chain. However, if the wear is too large, it is not conducive to the normal movement of the chain and affects its rotation. Therefore, the excessively worn chain guide and chain protector should be replaced in time to ensure that the motorcycle works properly.

Chain Guide

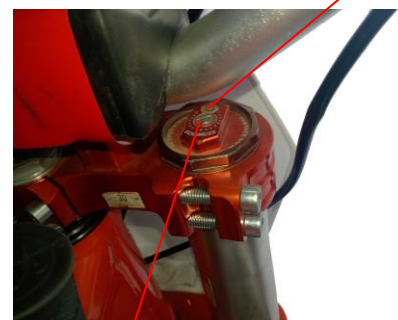


Chain Protector
Exhaust screw

22、 Front shock absorber inspection

Check the front shock absorber. If necessary, deflate the front shock absorber through the exhaust screw.

Note: When performing the deflation operation, please place the motorcycle on the fixed bracket so that the front wheel can be completely suspended.



Compression damping adjusting
screw

After placing the motorcycle on the ground, press the handlebar with your hand to test whether the rebound is sensitive after pressing it down.

Our K4, 21 model K6 and K6-R models use dual adjustable front shock absorbers, whose damping hardness can be adjusted by adjusting screws.

If you want to replace the front shock absorber, please contact the Kayo dealer, which requires relevant professional knowledge and skills.

23、 Gasoline pipeline inspection

Before each ride, please check whether the gasoline pipeline is normal. If there is any shrinkage or rupture of the gasoline pipeline, please replace the pipeline immediately to avoid leakage.

Danger: Riding a motorcycle with a broken pipe or even just starting the engine may cause a fire. Therefore, if there is a problem with the fuel pipe, please do not start your motorcycle. When replacing the oil pipe, please use the original equipment produced or authorized by Kayo.

24、 Fuel system inspection

Check the fuel tank, fuel tank cap, fuel tank switch, etc., and make sure that there is no oil leakage in the system before driving.

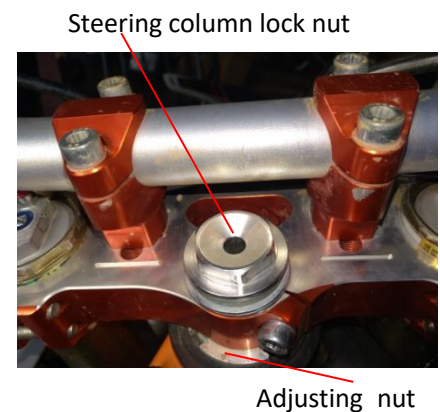
25、 Steering column adjustment

The steering column of a motorcycle should be adjusted frequently so that the handlebar can rotate freely.

Place the motorcycle on the fixed bracket so that the front fork can be completely suspended. Turn the handlebar to the middle position. If the handlebar continues to move after letting go, it means that the steering column is not too tight. Hold the lower part of the front fork and gently push and pull the front fork. If there is free movement, means the steering column is not tightened.

If you need to adjust the tightness of the steering column, please follow the steps below:

- ◆ Fix the motorcycle so that the front fork is completely suspended;
- ◆ Loosen the fixing bolts of the upper link plate;
- ◆ Turn the adjusting nut to the proper position;
- ◆ Tighten the steering shaft nut;
- ◆ Recheck the steering and repeat the above operations if necessary;
- ◆ Restore the handlebars.



26、 Conventional lubrication

All parts of the vehicle need to be lubricated regularly. After the vehicle is cleaned with low-pressure water, the motorcycle also needs to be lubricated. Before each part is lubricated, it is necessary to clean the rusty parts with an antioxidant, and remove the remaining oil, grease and dirt on the surface.

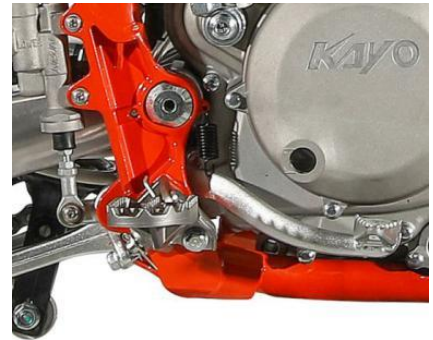
Generally speaking, the parts that need to be lubricated are:

- Clutch
- Brake lever
- Throttle cable
- Rear brake pedal bearing
- Rear brake pedal
- Shift lever
- Chain



Use spray with tube to lubricate with pressure. Use grease lubrication in the throttle cable.

Note: After driving the motorcycle on wet roads, even if the chain appears to be dry, it must be lubricated. Please use Kayo recommended products when lubricating.

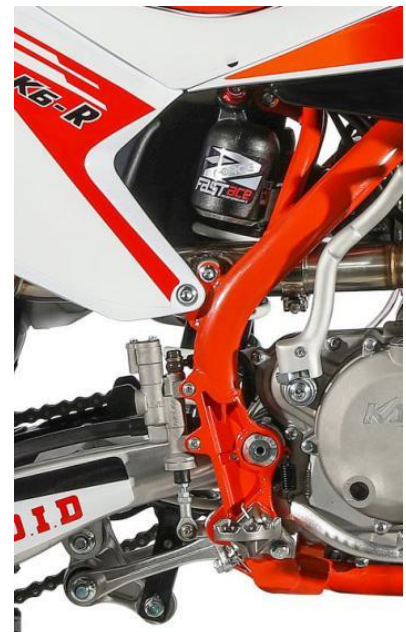


27、Rear shock absorber inspection

We configured dual-adjustable nitrogen airbag rear shock absorbers for K4, 21 K6 and K6-R models; for K2 models, single-adjustable rear shock absorbers were configured, and the disassembly methods of the two were the same. Check the rear shock absorber, observe whether the airbag is normal, whether the spring is cracked, etc. If necessary, replace the rear shock absorber.

Please follow the steps below to disassemble and assemble the rear shock absorber:

- ◆ Set up the whole vehicle and make the whole vehicle hang in the air;
- ◆ Remove the seat cushion;
- ◆ Remove the rear left upper guard plate, the rear left lower guard plate, the rear right upper guard plate and the rear right lower guard plate;
- ◆ Remove the muffler tube;
- ◆ Remove the rear attachment beam;
- ◆ Remove the mounting bolts of the rear shock absorber and the frame;
- ◆ Loosen the connecting bolts of U-shaped rocker arm and triangle rocker arm (do not remove);
- ◆ Remove the connecting bolts of the rear shock absorber and the triangular rocker arm;
- ◆ After confirming that there is no interference, take out the rear shock absorber;
- ◆ When installing the rear shock absorber, proceed in the reverse order of removal.



28、Chain inspection

The chain transfers the power output from the engine to the wheels, so that the motorcycle can move normally, and is an important part of the motorcycle. Therefore, the chain needs regular inspection and maintenance to ensure its normal use.

The chain tension can be adjusted according to requirements, the steps are as follows:

- ◆ Fix the motorcycle so that the rear wheel is completely suspended;
- ◆ Measure the distance A between the rear of the flat fork and the chain. The normal distance should be 30~36mm, which is about the distance between two fingers. The distance is close to the normal distance, and it is not necessary to be very demanding;
- ◆ Loosen the rear axle nut;
- ◆ Find the position of the greatest tension on the chain;
- ◆ Adjust the front and rear positions of the tensioner so that the two ends of the flat fork are aligned;
- ◆ Tighten the tensioner nut;
- ◆ Tighten the rear axle nut;
- ◆ Check the point of maximum tension and readjust the tension if necessary.

When checking the chain tension, in addition to the chain, a visual

inspection of the chain guide and sprocket is required. When the chain is over-used or stretched more than 2%, the chain should be replaced. At the same time, if a new chain with a different specification is planned to be used, the corresponding guide rail and sprocket should also be replaced. If only the chain is replaced without replacing other accessories, other accessories that are worn out due to the old chain will shorten the service life of the new chain, and these accessories will soon reach the limit of use and have to be replaced. Therefore, even from an economic point of view, it is worthwhile to replace the entire chain drive system at the same time. Replacement parts should use Kayo factory production or Kayo authorized products.

The chain needs to be lubricated regularly, see the general lubrication section for details.

Note: The alternating wet and dry working environment will greatly shorten the service life of the chain and its surrounding accessories. Therefore, please follow the correct lubrication method and select a suitable lubricant for lubrication.

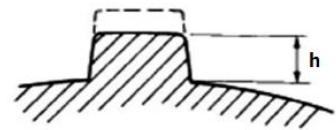


29、 Tire inspection

The tire inspection includes the following two aspects:

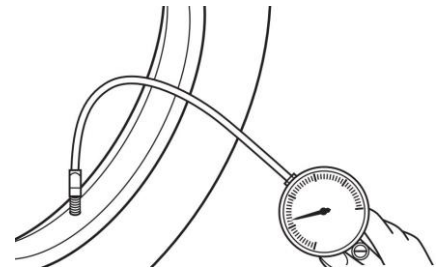
Pattern inspection: check the tire pattern height, if it is less than the minimum height, the tire should be replaced immediately.

The minimum height of the pattern is 3 mm.



Inspection of tire pressure: Use a barometer to check the pressure inside the tire. Our recommended tire pressure is:

	K2	K4	21 model K6	K6-R
F Tire	225kPa	225kPa	225kPa	225kPa
R Tire	280kPa	280kPa	280kPa	225kPa



30、 Battery check

Remove the motorcycle seat cushion and use a multimeter to check the voltage and output current of the positive and negative terminals of the battery. If the battery power is insufficient, please charge it in time; if the battery is damaged, please replace it immediately.

Note: Please use Kayo recommended products to replace the battery. If you are not familiar with the product, please consult with Kayo dealers.



PARTS AND METHODS

Carburetor

Carburetor is an important factor affecting the performance of motorcycles. Our company uses PE28 carburetor for K2 and K4 models, and PWK carburetor for K6-R carburetor models. Changing the opening of the carburetor valve can adjust the composition of the mixture, thereby affecting the performance of the engine.

After driving our motorcycle for a period of time, you must have a certain feeling for this car. At this time, you can set the motorcycle through the carburetor to make it more suitable for your driving habits.



Secondary transmission ratio setting

The secondary transmission ratio can be changed by changing the gear ratio of the motorcycle sprocket.

The number of front and rear sprocket teeth of Kayo K series is:

	K2	K4	21modelK6	K6-R
Number of small sprocket teeth	13	13	13	13
Number of rear sprocket teeth	45	45	49	51

Note: Please change the sprocket after consulting the dealer, and do not change it at will.

Warning: When replacing the sprocket, please decide whether to adjust or replace the chain according to the actual situation. Using a chain that does not match the sprocket will accelerate the wear of the sprocket, affect the service life, and may cause accidents.

If the transmission ratio of the sprocket decreases, the maximum speed of the motorcycle will decrease. But the acceleration performance is better, and it is easier to control when moving at low speeds. Low

transmission ratio motorcycles are more conducive to driving in harsh terrain.

If the transmission ratio of the sprocket increases, the maximum speed of the motorcycle will increase. High-speed motorcycles have poor acceleration performance and poor handling at low speeds.

Front shock absorber settings

Frame, engine and shock absorber are three important factors that affect motorcycle performance. The frame and engine cannot be adjusted directly, but the shock absorber can be set according to the user's usage.

Our company's K4, 21 K6 and K6-R models use inverted dual adjustable front shock absorbers, and the adjustment devices are as follows:

- ◆ Compression adjustment screw, located at the top;
- ◆ Exhaust screw, located at the top;
- ◆ Rebound adjustment screw, located at the bottom.

Warning: The front fork adjustment needs to be adjusted at the same time on both sides. Adjusting only one side will make the motorcycle tilt to one side, which is not conducive to maintaining balance and affecting driving safety.

Note: K2 uses non-adjustable front shock absorber, so this item is ignored.

exhaust screw



Compression adjustment screw



Rebound adjustment screw

Rear shock

Regarding the rear shock absorber, our company chooses dual adjustable nitrogen airbag rear shock absorbers for K4, 21 K6 and K6-R models. The adjustment device is as follows:

- ◆ Compression adjustment screw;
- ◆ Spring preload adjustment;
- ◆ Rebound adjustment screw.

K2 uses a single adjustable rear shock absorber, and its compression adjustment bolt is located above the shock absorber.



COMMON FAULTS AND TREATMENT METHODS

In the following content, we will enumerate the problems that occurred during your use, find out the possible causes and give general solutions.

Problem	Reason	Solution
Engine crank cannot turn	Crank stuck	Contact Kayo Service Center
	Cylinder, piston, connecting rod stuck	Contact Kayo Service Center
	Gearbox stuck	Contact Kayo Service Center
The engine does not respond when the electric starter is pressed	The starting relay fuse is blown	Remove the seat cushion and check the fuse, if the fuse is blown, replace the fuse
	Low battery	Remove the seat cushion and check the battery
Unable to start the engine	The motorcycle has been parked for a long time and the fuel has deteriorated	Drain old fuel and inject new fuel
	Dirt or wet spark plug	Clean or dry the spark plug, replace the spark plug if necessary
	Engine water intake	<p>First, drain the oil in the crankcase and remove it, clean it with a strong cleaning agent, then remove the spark plug, blow it dry with a fan (the machine that inflates the tires), and then dry the air filter. Finally, remove the exhaust pipe of the engine and blow it dry with a fan. After everything is done, the car owner should add new oil to the engine before starting the car. Because the moisture in the crankcase is difficult to completely evaporate, the new engine oil contains a small amount of moisture. Therefore, after the engine has flooded and the car has run for 100 kilometers, the oil should be changed again, and then again within 500 kilometers. After three times, the water in the carburetor was almost gone.</p> <p>If you want to test whether the carburetor still has moisture, you can drain the oil in the crankcase and observe its color. If it is white, it means there is still moisture.</p> <p>If water enters the cylinder, depress the start lever several times when the flame is turned off. Step on it for a few times, the water in the cylinder will be drained from the exhaust pipe, and then use a fan to blow the oil-adding port for a few minutes.</p> <p>Warning: For safety reasons, the spark plug should be wrapped with dry cloth to avoid spark jumping.</p>

	Incorrect mixing of air and fuel	Clean the fuel tank vent pipe and adjust the air filter duct
	Exhaust valve open	Check and correct the exhaust valve
The engine can be started, but it will stop immediately	Incorrect air supply	Close the choke valve, clean the fuel tank vent pipe, and adjust the air filter duct
	Lack of fuel	Supplementary fuel
Engine overheated	Lack of coolant	Replenish the coolant and check for leaks in the cooling system
	Clogged water tank fins	Clean the fins of the water tank with low-pressure water and replace them if necessary
Unbalanced engine operation	The spark plug is dirty, damaged or adjusted incorrectly	Remove the spark plug for cleaning, adjustment, and replacement if necessary
	Problem with spark plug cap	Check the condition of the spark plug cap, check whether the spark plug cap is in good contact with the cable itself, check the cable, and replace the damaged parts
	Ignition rotor is damaged	Replace the rotor
	Water mixed in the fuel	Empty the fuel, then inject new fuel
Insufficient engine power or poor acceleration	Problems with fuel supply	Clean fuel system and check
	Dirt in the air filter	Clean the air filter and replace if necessary
	Damaged or leaking exhaust system	Check whether the exhaust system is damaged, and replace related accessories if necessary
	Dirt in the carburetor nozzle	Remove the carburetor and clean the nozzle
	Damaged or worn crankshaft bearings	Contact Kayo Service Center
Engine sound is abnormal	Problem with ignition	Contact Kayo Service Center
	overheat	See "Engine Overheating" section
Exhaust pipe backfire phenomenon	Carbon deposits in the combustion chamber	Contact Kayo Service Center
	Poor gasoline	Change fuel
	The spark plug is in poor condition or the specification is wrong	Replace with a new spark plug with the correct specification
	Exhaust system gasket aging	Check whether the exhaust system is damaged, check whether the gasket is intact, if the gasket is aging, replace the gasket
White smoke from exhaust pipe	The fuel contains water	Change fuel
Black smoke from exhaust pipe	Air filter is clogged	Remove and clean the air filter
	The combustible mixture is too rich	Adjust the carburetor valve

Gearbox gear does not mesh	Clutch abnormality	Contact Kayo Service Center
	The fork is bent or stuck	Check and adjust the fork
	Damaged gear lever	Replace the gear lever
	Damaged gear shift drum	Replace the shift drum
	Damaged ratchet device	Replace the ratchet device
	Loose or broken spring at the selector position	Replace the selector position spring
Gear bounce	Fork wear	Replace the fork
	Tooth wear	Check gears and replace if necessary
	Gear damage	Change gear
	Damaged displacement drum groove	Replace the shift drum
	Worn fork shaft	Check the fork shaft and replace if necessary
	The selector position spring is damaged	Replace the selector position spring
Clutch slip	Clutch disc wear	Replace the clutch disc
	The clutch pressure plate spring is too soft or damaged	Replace the clutch spring
	Clutch handle free stroke is too small	Adjust the free stroke of the clutch
The motorcycle is difficult to steer	The cable makes it difficult to turn the handlebars	Move the cable to reduce its interference
	The steering shaft nut is too tight	Adjust the steering shaft nut
	Worn or damaged steering bearing	Check the steering bearing and replace if necessary
	Bent steering shaft	Contact Kayo Service Center
Damping is too hard	Fork oil level is too high	Lower the front fork oil level to a suitable position
	Fork oil viscosity is too high	Replace the fork oil with the right viscosity
	Fork bent	Contact Kayo Service Center
	Tire pressure is too high	Check tire pressure and adjust to proper pressure
	Damping adjustment error	Re-adjust damping
Damping is too soft	Insufficient front fork oil level	Add the right amount of fork oil
	Fork oil viscosity is too low	Note: It is required to add the same kind of oil
	Tire pressure is too low	Change to fork oil with suitable viscosity
	Damping adjustment error	Check whether the tires are leaking, if the tires are complete, inflate to the proper pressure
There is abnormal noise when the motorcycle is driving	Improper chain adjustment	Re-adjust damping
	Chain wear	Re-adjust the chain tension
	Wear of rear sprocket teeth	Replace the chain and front and rear sprockets
	Insufficient chain lubrication	Replace the rear sprocket
	Off-center rear wheel	Follow the manual to lubricate the chain
	The front fork spring is soft or	Check the spokes and adjust the spoke tension centrally

	broken	if necessary
	Brake disc wear	Check the brake disc, if its thickness is less than the limit thickness, replace it
	Damaged cylinder head	Contact Kayo Service Center
	Brackets, nuts, and bolts are not tightly fastened	Check and adjust the torque of the corresponding fasteners
	The gasket is installed incorrectly, is worn, or is too smooth	Readjust the gasket and replace if necessary
Motorcycle front wheel shimmy	Tire wear	Change tires
	Flange offset	Contact Kayo Service Center
	Whether the front wheel bearing is worn	Check the bearing and replace if necessary
	The vehicle is not aligned	Check the spokes and adjust the spoke tension if necessary
	Steering shaft tolerance is too large	Check the steering shaft pressure bearing clearance
	The steering shaft nut is loose and the handlebar is not fixed	Check and re-tighten
The motorcycle skews to one side	Bent chassis	Contact Kayo Service Center
	Improper steering adjustment	Check and readjust
	Bent steering shaft	Contact Kayo Service Center
	There is a problem with the fork	Contact Kayo Service Center
	Vehicle is not aligned	Re-adjust the spoke tension and contact Kayo Service Center if necessary
Brake failure	Brake disc wear	Replace the brake disc
	Insufficient brake fluid	Replenish brake fluid
	Deteriorating brake fluid	Replace brake fluid
	Piston damage	Contact Kayo Service Center
	Brake pad wear	Check the brake pad, if its thickness is less than the minimum friction thickness, replace the brake pad

ENGINE SERVICE MANUAL

ENGINE STRUCTURE INTRODUCTION.....	59
ENGINE INSTALLATION STEP	59
ENGINE MAINTENANCE AND ADJUSTMENT	59
DISASSEMBLY AND ASSEMBLY OF ENGINE.....	62
TORQUE TABLE FOR ENGINE BOLTS AND NUTS.....	62
ENGINE TROUBLESHOOTING.....	63

ENGINE STRUCTURE INTRODUCTION

1、 Air distribution mechanism

The timing driving sprocket on the crankshaft drives the timing driven sprocket on the camshaft through the chain to rotate the camshaft. The cam drives the rocker arm with the rotation of the camshaft, and the rocker arm overcomes the resistance of the valve spring to control the opening of the valve.

2、 Lubrication system

The engine lubrication system of this model series adopts pressure type and splash type compound lubrication. The oil is sucked into the oil pump from the tank body through the oil filter screen, and the pressure oil output from the oil pump is filtered by the fine filter of the right crankcase cover and divided into three routes to each lubrication point. One route: Enter the left and right crankcases to lubricate the main and counter shaft bearings and the main and counter shaft assemblies. Second route: enter the cylinder block, cylinder head, cylinder head cover, lubricate the rocker arm, valve, valve spring, cam surface, etc. Third route: enter the crank pin from the right big cover through the oil hole at the end of the right crank, and lubricate the large-end rolling bearing of the connecting rod and the surface of the crank pin.

ENGINE INSTALLATION STEP

The installation steps of the engine and related parts are as follows:

- (1) Hang the engine on the frame (pay attention to protect the appearance of the engine).
- (2) Install the carburetor on the intake elbow and fasten it with bolts and nuts.
- (3) Install the throttle cable and air filter, the interface should be sealed, and the clutch control cable should be installed.
- (4) Install the transmission chain.
- (5) Install and tighten the left rear cover, pay attention to the magneto outgoing wire and the gear display wire harness.
- (6) Install exhaust silencer. Make sure that the exhaust port does not leak when install.

ENGINE MAINTENANCE AND ADJUSTMENT

Inspection of installation bolts and nuts of cylinder head and cylinder block

The inspection is carried out at the first 1000km and every 5000km. When the engine is cold, use a torque wrench to tighten the bolts and nuts to the specified torque.

扭矩	M8	28~32N.m
	M6	10~15N.m

Check the valve clearance

The inspection is carried out at the first 1000km and every 5000km. Excessive valve clearance will cause valve

noise, and too small valve clearance will cause engine power drop and valve damage. The valve clearance should be checked according to the above prescribed mileage, and the valve clearance should be adjusted according to the following procedures:

- ◆ Remove the valve cover.
- ◆ Unscrew the magneto plug and timing screw plug on the left front cover, and use a 14mm socket wrench to turn the magneto rotor so that the piston reaches the top dead center of the compression stroke (turn the magneto rotor until the engraved line on the rotor matches the left front cover Until the timing holes on the top are aligned).
- ◆ Insert a standard feeler gauge between the end of the valve rod and the adjusting screw on the rocker arm. The clearance between the intake and exhaust valves is 0.03~0.05mm.
- ◆ If the valve clearance is not within the above range, use a special tool to adjust it within the specified range.
- ◆ Reinstall the valve cover, magneto plug and timing plug.

Note: The valve clearance should be checked and adjusted when the engine is cold.

Inspection of compression pressure

The inspection is carried out for the first 1000km and every 5000km. The inspection steps are as follows:

Let the engine run at idle speed and warm it up.

Unscrew the spark plug.

Install the pressure gauge and the connector into the spark plug mounting hole, and make sure that the connection is firm.

Turn the throttle handle to the full open position.

Start the engine several times with the starter motor, and read the pressure gauge to show the highest pressure value of the engine cylinder.

Standard value	1200~1250Pa
Limit value	1100Pa

Low pressure indicates the following malfunctions:

- ◆ Excessive wear of the cylinder wall.
- ◆ The piston or piston ring is worn.
- ◆ The piston ring is stuck in the ring groove. The valve is not properly engaged with the valve seat.
- ◆ The cylinder head gasket is damaged. When the engine compression pressure is lower than the above limit value, the engine should be reinstalled, inspected and repaired according to the specific conditions.

Note: Before testing the engine compression pressure, make sure that the cylinder head nuts and bolts are tightened according to the specified torque and the valve clearance is adjusted correctly.

Spark plug inspection

It should be inspected at the first 1000km and every 5000km, and needs to be replaced every 10000km. Use a wire or needle to remove carbon deposits in the spark plug, adjust the spark plug gap to 0.6 ~ 0.7 mm, and measure with a feeler gauge. When removing the carbon deposits, pay attention to the appearance of the spark plug and the color of the carbide.



Engine oil inspection

Replace the oil every 500km and every 1000km during the running-in period. The engine oil should be replaced in the following order when the engine is hot.

- ◆ The parking frame supports the motorcycle, warms up the engine (5~10) min, and waits for (5~10) min after stopping.
- ◆ Unscrew the oil filter cover, take out the oil filter and spring, unscrew the oil dipstick, discharge the oil, clean and dry the oil filter and spring at the same time. When cleaning the oil filter, remove the deposited debris and check whether the filter is damaged.
- ◆ Install the oil filter and spring, tighten the oil drain plug, and add new oil from the oil filler port. The amount of oil is 1000ml. Use API classified SF or SJ grade oil with a viscosity of 10W/40.
- ◆ Start the engine and let it run at idle speed for 3~5 minutes.

Turn off the engine, wait for about 3 minutes, and check the oil height through the oil dipstick. When checking the oil level, the motorcycle should be horizontal and vertical. If the oil level is in the upper middle position of the engraved line on the oil dipstick.

Adjustment of clutch control system

In order to ensure that the clutch can be used correctly and the portability of operation, the user should ensure that the clutch is in the engaged state under the normal state when adjusting, and it is never allowed to be in the half-clutch state.

Carburetor inspection and engine idle speed adjustment

The inspection is carried out at the first 1000km and 5000km. Start the engine and adjust the throttle stop screw make the engine speed at 1400~1600r/min.

Engine running-in

It is necessary for a new car to run-in all moving parts before the engine is running at full load. The future performance and engine reliability depend on strict and meticulous running-in and maintenance at the initial use stage. When starting and driving during the running-in period, it is not allowed to increase the speed too

high. Do not start and accelerate too quickly to prevent the power unit from bearing impact load and affect the running-in quality. Generally, after the engine is started, make sure fully warm up the engine at a low rotating speed before starting. Drive the motorcycle at a low speed for about 1 to 2 km before turning to normal driving speed. The general running-in rules are as follows:

- ◆ Initially 800km: below 3000r/min;
- ◆ 800~1600km: below 4000r/min;
- ◆ Above 1600km: Below 7500r/min.

After 1600km, you can operate at full throttle, but the engine speed should not exceed 8500r/min under any circumstances.

During the running-in period, the throttle opening should be changed frequently and never let the engine run for a long time at the same speed.

DISASSEMBLY AND ASSEMBLY OF ENGINE

Disassembly and assembly of cylinder head cover, cylinder head and camshaft

- ◆ Remove the carburetor, intake pipe and muffler
- ◆ Unscrew the bolts of the left side cover of the cylinder head, and remove the left side cover of the cylinder head and the gaskets of the left side cover of the cylinder head. Remove the start motor.
- ◆ Remove the tensioner on the cylinder block.
- ◆ Unscrew the timing driven sprocket bolts, remove the timing driven sprocket, and take out the camshaft.
- ◆ Remove the cylinder head nut, cylinder head and box connecting bolts, cylinder head cover bolts, and the cylinder head cover and cylinder head.
- ◆ Remove the cylinder head (with valve, valve spring, washer and spring seat).

The assembly should be carried out in the reverse order of disassembly.

Note: When assembling the cylinder head cover, the joint surface must be glued.

Disassembly and assembly of cylinder and piston

- ◆ Remove the cylinder head gasket, positioning pin and chain guide plate.
- ◆ Remove the cylinder block.
- ◆ Remove the piston pin retaining ring, piston pin, and piston (with piston ring).

The assembly should be carried out in the reverse order of disassembly, and the end gap of the piston ring should be separated by 120 degrees and staggered.

Disassembly and assembly of the left front cover

- ◆ Remove the shift lever.
- ◆ Remove the electric start double gear shaft, double gear washer and double gear.
- ◆ Remove the connecting bolts between the left front cover and the box body, and remove the left front cover (with magneto stator and trigger part).
- ◆ Remove the left front cover paper pad, positioning pin, bridge gear, bridge gear shaft and gasket.
- ◆ Remove the fastening bolts of the magneto, and use a special tool to take out the magneto rotor (with overrunning clutch part).

- ◆ Remove the starting gear.
- ◆ Remove the timing chain baffle and timing chain.
- ◆ Remove the gear display screw and gear display.

The assembly should be carried out in the reverse order of disassembly.

Disassembly and assembly of the right crankcase cover

- ◆ Remove the clutch cable.
- ◆ Remove the starting arm.
- ◆ Remove the connecting bolts of the right crankcase cover and the box body, and remove the right crankcase cover, paper pads, and positioning pins.
- ◆ Remove the nut (left-handed) and the dish washer on the crankshaft.
- ◆ Remove the clutch push rod and bearing.
- ◆ Remove the clutch lock nut (left-handed) and butterfly washer.
- ◆ Remove the center sleeve, spline washer, clutch cover and driving gear.
- ◆ Remove the shift arm, stop plate and five-star shift plate.

The assembly should be carried out in the reverse order of disassembly.

Disassembly and assembly of the box part

- ◆ Remove the box connecting bolts, and remove the right crankcase.
- ◆ Take out the crank connecting rod parts, crankshaft adjusting shims and balance shaft parts from the crankcase.
- ◆ Remove the fork shaft, fork, gear drum and main and counter shaft kits.
- ◆ The assembly should be carried out in the reverse order of disassembly.

TORQUE TABLE FOR ENGINE BOLTS AND NUTS

NO.	Applicable parts	Moment value
1	Cylinder head nut M8	28-32N.m
2	Cylinder head bolt M6	10-15N.m
3	Timing sprocket bolt M6	10-15N.m
4	Clutch tightening nut	40-50N.m
5	Magneto rotor bolt	65-71N.m
6	Valve cover	12-18N.m
7	Box bolt	10-15N.m

ENGINE TROUBLESHOOTING

Four essential conditions to ensure normal operation of engine.

- 1、 Good fuel condition: Cylinder with a certain ratio of combustible mixture.
- 2、 Good spark condition: The spark plug emits a strong spark within the allotted time.
- 3、 Compression: enough compression pressure in the cylinder.
- 4、 Valve timing: correct opening time.

After the engine produces the breakdown, please analysis the reason based on above four aspects ,to Check,

analyze the reason of the breakdown, and eliminate it.

Faults	Inspection	Results	Possible Reason
The engine cannot be started or difficult to start	Check whether the fuel flows into the carburetor	Fuel does not flow into the carburetor	No oil in the tank
			Blocked tubing from the fuel tank to the carburetor
		Fuel flows into the carburetor	The float assembly in the carburetor is stuck
			The vent on the fuel tank cap is blocked
	Remove the spark plug to test the spark	Weak sparks or no sparks at all	Spark plug failure
			The spark plug is not clean
			Electronic ignition is malfunctioning
			The magneto is faulty
		Good sparks	Bad wiring, broken
			High-voltage cable is open or short-circuited
	Test cylinder pressure	Pressure is too low	The starting mechanism is slipping and the engine cannot be turned
		Normal pressure	Valve clearance is too small
			Valve opening blocked
			Cylinder or piston ring wear
			Cylinder head gasket is broken
			Improper valve timing
		Start the engine again	The engine ignites but does not start
Improper adjustment of the carburetor fine-tuning screw			
Engine does not ignite	Air intake pipe leaks		
	Incorrect ignition timing		
Remove the spark plug	Wet spark plug	Carburetor oil level is too high	
		The carburetor choke is closed too tightly	
	Spark plug dry	Excessive throttle	
The engine performs poorly at low or idling speeds	Check valve timing and valve clearance	Incorrect	Improper valve clearance adjustment or poor quality of rocker arm adjustment screws
		correct	Improper adjustment of gas timing
	Check the adjustment of the fine adjustment screw of the carburetor plunger	Incorrect	Improper adjustment
		correct	/
	Check whether the carburetor gasket is leaking	Air leak	Deterioration of carburetor seal
		Airtight	Loose carburetor

			Damaged carburetor gasket
	Remove the spark plug and perform a spark test	Weak sparks or intermittent sparks	The spark plug is faulty or carbon deposits
			The electronic igniter is malfunctioning
			The magneto is faulty
		Good spark plug	The spark plug cap is faulty
			The power circuit is faulty
The engine performs poorly at high speeds	Check the ignition timing and valve clearance	Incorrect	The ignition controller is faulty
			Improper valve clearance adjustment
			The magneto is faulty
		Valve clearance and ignition timing are correct	/
	Disassemble the connection of the fuel pipe of the carburetor and check if the fuel pipe is blocked	Insufficient fuel flow	The fuel tank has run out of fuel
			Blocked fuel pipe
	The fuel pipe has sufficient flow	Blockage	Clogged fuel tank cap vent
			carburetor measuring hole clogged
	Check if the filter and carburetor nozzle are blocked	Unblocked	Float stuck
			Filter clogged
	Check gas timing	Incorrect	Adjust gas timing
			correct
Check valve spring pressure	Not under pressure	Worn or broken valve spring	
The engine has abnormal noise	Check whether there is abnormal noise in the valve	Abnormal noise in the valve	Valve clearance is too large
			Valve wear
	Check whether there is abnormal noise in the cylinder	Cylinder has abnormal noise	Piston and cylinder wear
			The small end holes of the piston pin and connecting rod are worn
			Crank pin and connecting rod large end wear
	Check whether the timing chain produces abnormal noise	Abnormal noise in the chain	Camshaft wear
			Timing driven sprocket wear
			Timing chain stretched
			The timing chain automatic tensioner fails or the guide wheel is worn
	Check whether the driving gear and the driven gear produce abnormal noise	Abnormal noise in driving gear and driven gear	Gear machining accuracy is not enough
			The gear teeth are worn
			The matching clearance between the driving and driven gears is too small or too large