KAYO MOTO

www.kayomoto.ro

2021 K6

Service Manual

WWW.KAYO.COM.CN

This service manual is edited by KAYO
Please do not modify the content without authorization。
Manufacturer has the right to improve and update the model's structure and spare parts without notice.
The model in the image may be different from the real model.

Preface

Hereby, on behalf of KAYO all staff thank you for choosing our dirt bike: 2021 K6, and we believe that this choice will not disappoint you.

This manual is designed to help you better use our products, and it introduces the maintenance adjustment procedure, disassembly and assembly essentials, inspection and maintenance points, troubleshooting methods and maintenance technical data of 2021 K6 model in detail, with detailed graphic data attached to guide the operation.

Please carefully read this manual and conduct inspection and repair in accordance with the standard operating practices, which can effectively extend the service life of each part, improve the performance of the engine and the reliability of the whole vehicle.

For the sake of technological development, Kayo reserves the right to modify the construction, equipment and accessories of the motorcycle without prior notice. Due to the different regulations and requirements in different markets, we have made appropriate adjustments to the models, so the images in the manual may be different from the standard samples.In addition, if you have any questions, please refer to our official website www.kayo.com.cn and contact with our service staff, we will be humbly accept.

Please understand that the contents in this maintenance manual which subject to change due to vehicle improvement, upgrading will not notify again. The actual condition of the vehicle shall prevail in the maintenance.

ZHE JIANG KAYO MOTOR CO., LTD

Technical Department

March, 2021

Content

Symbols and Meanings of Special Words

* This symbol indicates that this operation requires the operator to have professional knowledge and technical understanding. If you do not have the confidence to complete this operation, you can go to a professional repair shop or KAYO after-sale service point to be operated by professionals.

→ This symbol indicates that the specific information is on the following page number.

Danger/warning/attention

In this manual, the words "Danger/Warning/attention" will appear. Please read the following words carefully to protect yourself and your motorcycle. The meanings of "danger", "warning" and "attention" are as follows:

Danger: Be on high alert for danger.

Warning: to be alert to moderate danger.

Attention: to be alert to minor danger.

However, please note that in this manual, we only enumerate the main safety issues related to vehicle maintenance and repair, and the contents of warning slogans cannot cover all the potential dangers during the use and repair of the vehicle.Therefore, in addition to the "Danger", "Warning" and "Attention" related matters, users must also have basic mechanical safety knowledge, if you do not grasp the entire maintenance and repair operation process, please consult a more experienced senior technician before operation.

Suggestions for Daily Use

The vast majority of off-road motorcycle fatalities are caused by head injuries. Without helmets, the chances of serious injury or death from a head-hit are much higher. Therefore, we strongly recommend that you wear a full set of safety equipment such as helmet, goggles, gloves and boots when driving, which will save your life at the critical moment.

This series of models is designed for off-road racing at the beginning, without considering the problem of carrying passengers, and there is no backseat, handlebar and pedal for carrying people, so please be sure not to use this motorcycle to carry other people except the driver, which behavior can easily lead to safety accidents.

Try to avoid using non-original parts to modify the car, also do not arbitrarily delete the original components of the car, if you need to replace any parts, please choose the original parts produced by KAYO or products authorized by KAYO manufacturers.In addition, the company is not responsible for any vehicle problems caused by personal modification and the use of unauthorized parts.

Our 2021 K6 product are specially designed for off-road and woodland crossing, so they are not suitable for highway riding or long-distance motorcycling. If you insist on using them, the tires may accelerate the wear of the pattern due to high speed rotation and reduce the service life .It is also not suitable for urban use, as prolonged periods at traffic lights may cause the engine to overheat and thus shorten its life. Please take care of your vehicle and avoid problems caused by improper use.

Please check your motorcycle carefully before each use and maintain it in accordance with the maintenance manual after use. After the motorcycle falls, please first check whether the main parts are damaged. If you drive a faulty motorcycle, it is very easy to lead to the occurrence of an accident and endanger your own safety.

When using this motorcycle, the temperature of the engine and exhaust pipe is very high, so it needs to cool down for a period of time after parking. During this period, do not touch or move the engine and exhaust pipe, so as not to cause scald. Do not wear shorts while riding, otherwise leg injuries may result.

Operation notes

Precautions for safety

1. You must wear work clothes (covered overalls, etc.), hats, and safety boots that are suitable for the job. If necessary, you should also wear dust-proof glasses, dust-proof masks, gloves and other safety protection products to protect your body.
2. Because the exhaust contains harmful components, it is forbidden to run the engine for a long time in a closed place or a place with poor ventilation.
3. When the engine is just stopped, the temperature of the engine and the muffler is still very high. Do not touch them before cooling to avoid burns.
4. The storage battery solution (dilute sulfuric acid) is a strong corrosive agent, which may cause burns and blindness when it touches the skin and eyes. If your clothes or skin are accidentally stained with battery solution, please wash them immediately with plenty of water and go to the hospital for treatment. The storage battery and storage battery solution should be kept strictly, and must be placed in a safe place out of the reach of children. When the battery is charged, it will produce flammable and explosive hydrogen. Once a fire source or electric spark approaches, there is a danger of explosion. So please charge in a well-ventilated place.
5. As gasoline is flammable, fireworks are strictly prohibited at the work site. Pay attention not only to open flames, but also to electric sparks. In addition, the vaporized gasoline may explode. Please choose a well-ventilated site for operation.
6. Be careful not to let the rear wheels, clutches and other rotating parts and movable parts pinch hands and clothes during maintenance.
7. When two or more people are doing homework, they must greet each other continuously to confirm safety.

Precautions for disassembly and assembly

1. Parts, lubricating oil and grease must use KAYO recommended products.
2. The parts of each system should be sorted and kept separately, so that the parts can be installed back to their original positions.
3. Please clean the dirt and dust on the car before maintenance.
4. Gaskets, O-rings, piston pin retaining rings, split pins, etc. must be replaced with new ones after disassembly.
5. When the elastic retaining ring is disassembled, if the opening is too large, it will be deformed and will easily fall off after reassembly. Please do not use elastic retaining rings that have become loose or have lost their elasticity.
6. After the parts are disassembled and inspected, they should be cleaned and the cleaning agent should be blown off with compressed air before the measurement. Apply lubricating oil

on the moving surface before assembling.
7. When disassembling, check the necessary places and measure relevant data so that it can be restored to the state before disassembly during assembly.
8. Fasteners such as bolts, nuts, and screws must be pre-tightened first, and then tightened on the diagonal according to the specified tightening torque according to the principle of from large to small, from inside to outside.
9. The rubber parts should be checked for aging during disassembly and replaced in advance if necessary. In addition, since rubber parts are not resistant to gasoline, kerosene, etc., try not to let volatile oils and greases adhere to them.
10. According to the requirements of the maintenance manual, apply or inject the recommended grease on the designated parts.
11. Use correct special tools for disassembly and assembly operations.
12. The inner ring or outer ring of the ball bearing can be rotated by fingers to confirm whether the rotation is flexible and smooth. If the disassembly method of applying force on the ball is adopted during disassembly, the dismantled bearing should not be used again:

- If the bearing axial or radial clearance is too large, replace it.
- Bearings that feel stuck in rotation should be cleaned, and those that still feel stuck after cleaning should be replaced, and those that cannot be cleaned should be replaced directly.
- It is a compression fit with the body or the shaft diameter. If the fit is not tight after disassembly, replace the bearing.

13. Bearings should be coated with oil or grease before assembling. Pay attention to the installation direction when assembling single-sided dust-proof bearings. Open type or double-sided dust-proof bearings should be installed with the manufacturer's logo and size facing outward when assembling.
14. When installing the rectangular retaining ring, the chamfered side should face the direction of force. Do not use the retaining ring that has been slackened and lost its elasticity. After assembling, turn the rectangular retaining ring to confirm that it is firmly installed in the groove.
15. After assembly, it is necessary to check whether each fastening part is tightened and whether it works normally.
16. Brake fluid and coolant will damage the painted surface, plastic parts, rubber parts, etc. Do not allow them to adhere to such parts, and rinse with water immediately in case of adhesion.
17. The oil seal should be installed with the side with the manufacturer's logo facing outward (the direction without oil):

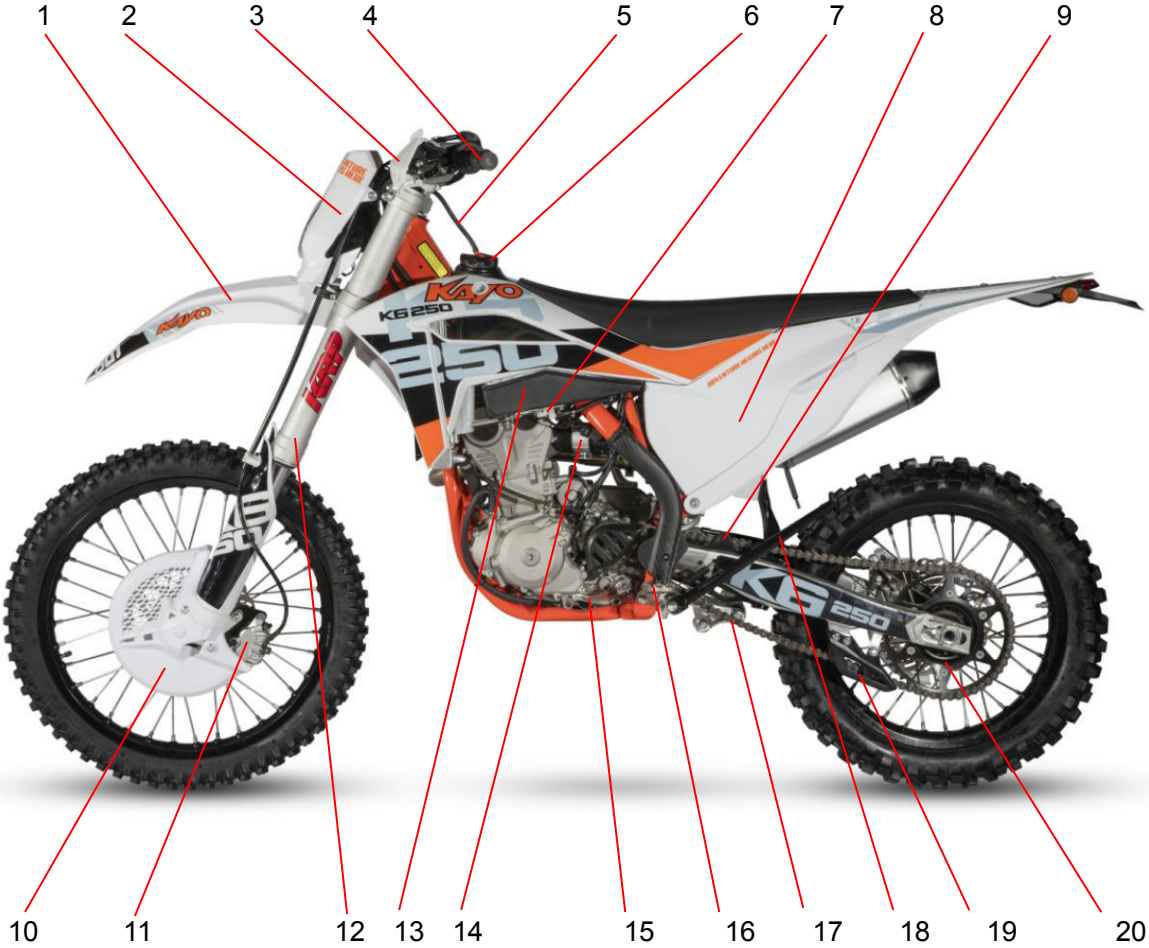
- When assembling, be careful not to curl the oil seal lip and prevent burrs from scratching the oil seal lip.
- Apply grease on the oil seal lip before assembling.

18. When installing hose-like parts, insert the hose into the root of the joint. If there is a pipe clamp, install the pipe clamp in the dent of the pipe. Replace the hoses that are not tight during installation.
19. Don't get dust, dirt, etc. into the engine and brake hydraulic system.
20. The gasket material attached to the joint surface of each engine box must be cleaned up

before assembly. The bumps on the contact surface must be polished evenly with oilstone.
21. Do not twist or bend the cable too much. Deformed and damaged cables can cause malfunction or breakage.
22. When assembling protective cap parts, if there is a groove, the protective cap must be inserted into the groove.

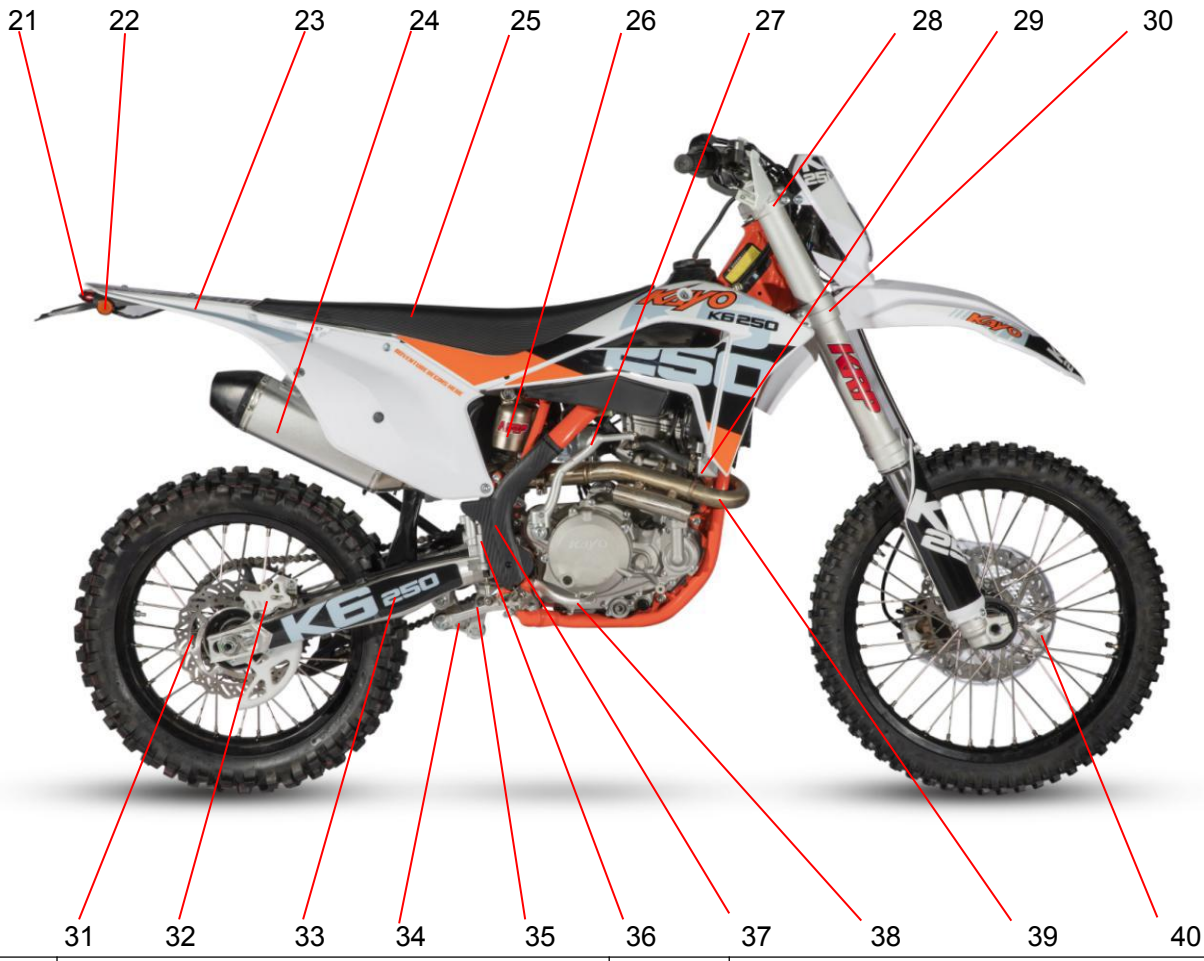
Vehicle components and location

2021 K6 specific components and locations



No.	Name	No.	Name
1	Front fender	11	Front brake caliper
2	Headlight	12	Front shock
3	Handguard	13	Fuel tank
4	Handlebar	14	EFI system
5	Vent pipe	15	Gear shift lever
6	Fuel tank cap	16	Pedal
7	Fuel tank petcock	17	Chain
8	Air filter cover	18	Single support

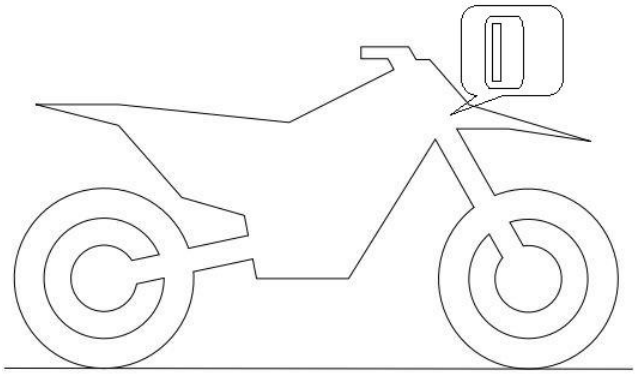
9	Chain guide cover	19	Chain guide
10	Front disc brake cover	20	Rear sprocket



No.	Name	No.	Name
21	Taillight	31	Rear disc brake
22	Rear left and right reflectors	32	Rear brake caliper
23	Rear fender	33	Aluminum swingarm
24	Exhaust pipe muffler	34	Triangle rocker arm
25	Seat	35	U-shape rocker arm
26	Rear shock	36	Rear brake pump body
27	Start lever	37	Protective cover
28	Upper clamp	38	Brake pedal
29	Cooling water tank	39	Exhaust pipe
30	Lower clamp	40	Front disc brake

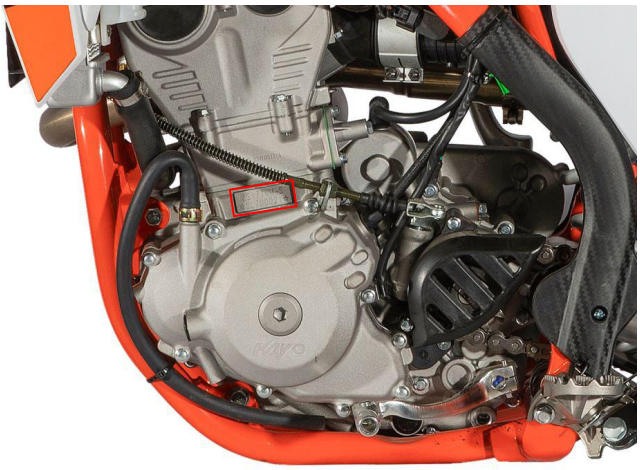
VIN Code and Engine Number

VIN Code



The VIN Code of the 2021 K6 is located on the nameplate of the front extension tube.

Engine Number



The engine number of the 2021 K6 is located on the left side of the engine.

The Vehicle Parameter

Vehicle Dimensions and Mass Parameter	
L*W*H（mm）	2180×820×1254
L*W*H（mm）	1488
Net weight（kg）	110
Tire size	F: 80/100-21；R:110/100-18
Seat height（mm）	950
Min ground clearance（mm）	340

Tank volume（L）	7.5
Engine Parameters	
Engine type	Single cylinder, four stroke, water cooling, 4 Valves, double overhead camshafts, balance shaft
Clutch type	Wet type, Multiple disk
Cylinder diameter×stroke	77×53.6mm
Displacement	249.6
Max. Power（kw/r/min）	22/9500
Max. Torque （N•m/r/min）	23.7/8000
Compression Ratio	11.6：1
Shift type	Usually engaged two - stage transmission six - speed transmission, International profile, with aluminum alloy shift lever
Starting	Electric and kick
Fuel control system	EFI system/PWKcarburetor
Battery	12V/7Ah Lithium battery
Chain	#520H；13T/49T
Frame/Shock/Brake/Wheel system Parameters	
Frame type	Central double cradle type high strength steel tube frame,
Front shock	KAYO new KRP double adjustable front shock absorber L=950mm
Rear shock	KAYO new KRP double adjustable nitrogen airbag rear shock absorber L=480mm
Swingarm	High strength aluminum alloy internal high pressure forming structure, L=595mm with improved progressive rate of forged aluminum connecting rod system
Handlebar	6061 aluminum alloy fat bar, with Kayo special ultra-soft off-road grip
F/R rims	F:1.60×21；R:2.15×18；7050 high strength aluminum rim；Cast wheel hub
F brake system	Φ240mm disc brake, CNC small handle bar
R brake system	Φ240mm disc brake, forged internal brake pedal
Others	
Air filter type	Sponge filter core filter type
Fuel type	92 and above grade gasoline
Motorcyclists	1 人（rider）
Maximum load mass	120kg

Vehicle maintenance parameters

Item		standard	Maintenance limit
Rim bounce	Radial	0.8mm	2mm
	Axial	0.8mm	2mm
Tire pressure	front wheel	225kPa	/
	rear wheel	280kPa	/
Front brake	Brake lever stroke	20~34mm	/
	Thickness of brake disc	4mm	3.5mm
Rear brake	Brake pedal stroke	25~40mm	/
	Thickness of brake disc	4mm	3.5mm
Magneto	Type	Permanent magnet alternator	
	Output form	Three-phase full wave	
	Trigger coil resistance	150Ω	
	No-load voltage (engine cold state)	/	
	Maximum output power	180W	
	Regulated voltage	14.5±5V	
	Trigger coil peak voltage	≥1V，200r/min；≥8.5V，2000r/min	
Rectifier form		Full wave rectification	
Battery	capacity	12V 7Ah	
	Voltage between terminals when fully charged	14.4V	
	Voltage between terminals when the power is not full	<11.8V	
Ignition method		CDI electronic ignition	
Spark plug	Type	Resistance spark plug	
	Adopt the standard	D8RTC	
	gap	0.6~0.7mm	
	Spark characteristics	Blue and white	
Ignition coil resistance	primary	0.3Ω	
	Secondary	3.8kΩ	
Peak voltage	Ignition coil primary	300~450Ω	

	Pulse generator	20~30kΩ
Start relay coil resistance		3.5kΩ
fuse		10A
Headlight		12V 35W
Tail light/brake light		12V 2.8W

Important fastener specifications

No.	Item	Fastener specifications	**Quantity**
1	Front brake caliper mounting bolt	Outer hexagon small head flange M8×40 full thread	2
2	Front brake guard mounting screw	Inner hexagon big flat head M6×16	2
3	Steering column nut	Aluminum silver M30××H10	1
4	Upper pressure block mounting screws	Hexagon socket head M8×30	4
5	Front disc brake rotor mounting bolt	Opposite side of outer hexagon M6×20	6
6	Front axle mounting nut	Outer hexagon flange M16×1.5×H14	1
7	Pedal seat mounting bolt-1	Hexagonal big head flange M8×16	2
8	Pedal seat mounting bolt-2	Hexagonal big head flange M12×20	2
9	Shift lever mounting bolt	Opposite side of outer hexagon M6×25	1
10	Mounting bolts on engine lifting points	Opposite side of outer hexagon M10×110	1
11	Engine mounting bolts	Opposite side of outer hexagon M10×115	1
12	Engine mounting nut	Hexagon flange self-locking nuts M10×1.25	2
13	Exhaust pipe mounting nut	Hexagon flange self-locking nuts M8	2
14	Chain guide sleeve mounting screws	Phillips flat head machine screw M6×10	2
15	Flat fork shaft mounting nut	Hexagon flange self-locking nuts M16×1.5×H14.8	1
16	Triangle cradle fastening nut	Hexagon flange self-locking nuts M12×1.25	3

17	Adjusting Chain bolt	Hexagon bolts on opposite sides M10×40×1.25 S14	2
18	Adjusting chain nut	Hexagonal flange tooth nut M10×1.25	2
19	Rear reduction and frame connecting bolt	Outer hexagon small head flange bolts M10×50×1.25	1
20	Connecting bolts of rear shock and tripod cradle	Oval head bolts M10×42×1.25+Φ10×28	1
21	Fastening nut for rear shock and tripod cradle	Hex flange with teeth M10×1.25	1
22	Rear brake disc mounting bolt	Opposite side of outer hexagon M6×20	4
23	Rear sprocket mounting screws	Hexagon socket countersunk head screws M8×31 10.9 level	6
24	Rear sprocket fastening nut	Hexagon self-locking nuts M8	6
25	Rear axle nut	Hexagon self-locking nuts M22×1.5	1
26	Rear brake disc guard mounting bolt	Outer hexagon small head flange bolts M6×12	4
27	Brake pedal head mounting screw	Cross half round head with gasket M5×10 full thread	2
28	Brake limit bolt	Hexagonal big head flange M8×20 full thread	1
29	Rear brake pump mounting bolt	Cross half round head with gasket M6×16 full thread	2
30	Brake pedal bolt	Cross half round head with gasket M6×25 full thread	1
31	High voltage package mounting bolt	Outer hexagon small head flange M6×20	2
32	ECU/Igniter mounting bolt	Cross half round head with gasket M6×16 full thread	1/2
33	Voltage stabilizer mounting bolt	Cross half round head with gasket M6×25 full thread	2
34	Electric door lock bracket bolt	Outer hexagon small head flange M6×12	2
35	Screws connecting the left and right guard plates to the fuel tank	Cross half round head with gasket M5×10 full thread	6
36	Muffler mounting bolt	Outer hexagon big head flange bolts M8×35 full thread	1
37	Hexagonal flange tooth nut	M6	8
38	Hexagon flange self-locking nuts	M6	14

The tightening torque of the fasteners in the above table can refer to the standard torque.

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

The Vehicle Control

Clutch lever inspection

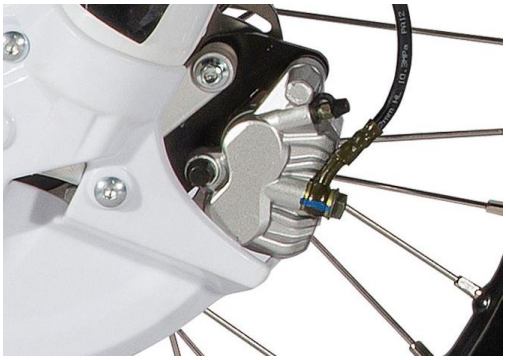
The clutch is controlled by the clutch lever, which located at the left end of the handlebar, and operated by the left hand.

The angle of the 2021 K6 clutch lever can be adjusted according to the wishes of customers. By adjusting the screw, the angle between the clutch lever and the handlebar can be changed. This adjustment does not change the internal structure of the clutch, so it will not affect the normal use of the clutch.

Front brake lever inspection

The front disc brake is controlled by the brake lever. Which located at the right end of the handlebar, and operated by the right hand.

The angle between the brake lever and the handlebar of 2021 K6 model can be adjusted according to the needs of customers. For details, see "Adjusting the Stroke of the Front Brake lever". →p.47



The front brake adopts a floating caliper disc brake, which is installed on the lower end of the left front shock and fixed by 2 bolts.

Throttle knob

The throttle knob is located on the right side of the handlebar and is controlled by turning with the right hand. When the handle is turned counterclockwise, increase the throttle, release the handle and return it to the position.

Start

The vehicle start button is located on the right side of the handlebar, close to the position of the throttle knob. It is a square gray button. Long press it to start the motorcycle engine. In addition to the start button, the vehicle can also be started by stepping on the start lever.

Note：When starting, the left hand should squeeze the brake to prevent the engine from starting with gear。

Note：There should be fuel in the fuel tank before starting the engine, and the fuel tank switch is required to be in the open position。

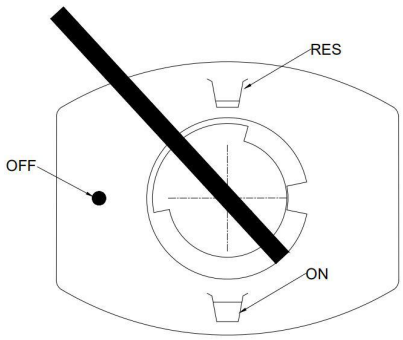
Extinguish

The engine's flameout switch is located on the left side of the handlebar near the grip. It is a square red button. Long press it to turn off the engine.

Fuel Tank Pump/Fuel Tank Switch

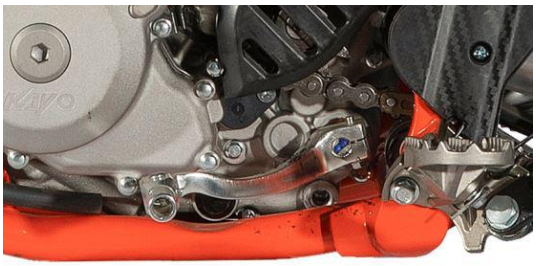
2021 K6 EFI versions deliver oil to the engine through an oil pump, and the amount of oil is adjusted by ECU (Electronic Control Unit). →p.98

The 2021 K6 carburetor version adjusts the fuel supply through the fuel tank switch, which is located at the bottom of the left side of the fuel tank. By rotating the switch, you can control whether the fuel enters the carburetor, so as to achieve the control effect.

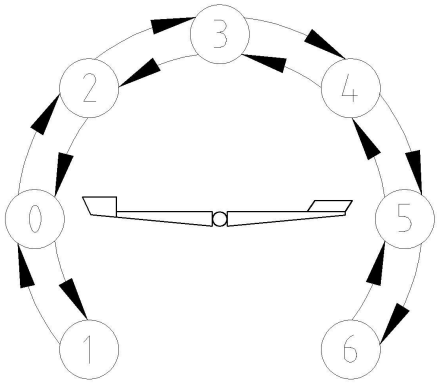


The meaning of each symbol on the fuel tank switch is as shown in the left figure, where the "ON" symbol indicates that the switch is turned on and the fuel is drained; the "OFF" symbol indicates that the switch is turned off and the fuel drain stops; the "RES" symbol indicates that the reserve oil is enabled.

Shift check

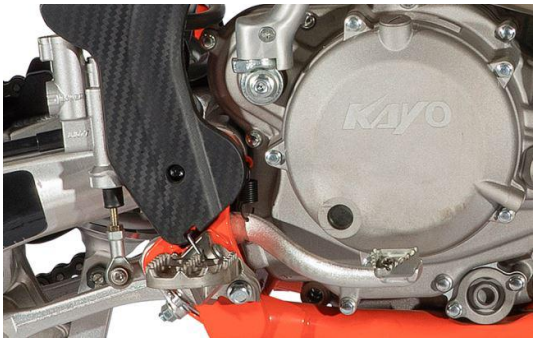


The 2021 K6 shift lever is located on the left side of the engine, and the shift operation is performed by stepping on and hooking up the shift lever.



The 2021 K6 engine gear is the international six gears, and its gear setting is shown in the left picture.

Inspection of rear disc brake



The foot brake pedal is located on the right side of the engine and is operated by stepping on it.

Note： When performing brake operation, the foot brake should be used as the main brake, and the hand brake should be used as a supplement.

The rear wheel brake adopts a floating caliper disc brake, whose caliper body is located on the right side of the rear wheel and is fixed by a disc brake bracket.

Parking support

2021 models of K6 use a single support for parking support. The single support is located on the left side of the whole vehicle. When in use, the vehicle is centered and the single support is kicked to expand it. Tilt the whole vehicle to the left to make the single support contact the ground and support the motorcycle.

Precautions Before Use

Advice for beginners

1.Please read this manual before driving, especially the "The Vehicle Control" and "Drive Guide" sections. →p.20&24
2.Please carry out a standard run-in when driving.
3.If any part problem is found during use, please refer to this manual for repair or contact KAYO dealer.
4.After each use, the whole vehicle needs to be cleaned with water flow.
5.If not necessary, do not drive in bad weather (such as heavy rain, blizzard, etc.).
6.The company is not responsible for the whole vehicle problems caused by malicious behavior.

The running-in process

Motorcycle engines have a lot of relatively moving parts, such as pistons, piston rings, cylinder blocks, and transmission gears that mesh with each other. Therefore, at the initial stage of use, the engine must be run-in to a standard. 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、0～2.5h stage：when the motorcycle is used at 50% ~ 75% throttle, the speed should be changed frequently to avoid the motorcycle running for a long time at the same

throttle; After working for 1 hour, let the engine cool for 5 ~ 10 minutes; Avoid rapid acceleration, throttle can not be sudden and small.
2、2.5～4h stage：at 50% ~ 75% throttle, the motorcycle can run for a long time at the same throttle. In the working process, the throttle can reach 100%, but the duration is not higher than 5 ~ 10 seconds;
3、4～5h stage：use the motorcycle at 75% ~ 100% throttle.
4、More than 5h：increase the speed to 60 ~ 80km/h, until the engine performance can be fully played.

Danger： When driving a motorcycle, please do not speed up regardless of the consequences, this behavior is easy to cause engine damage, thus causing safety accidents.Therefore, please pay attention to certain driving skills when using motorcycles.

Drive Guide

Check items before driving

1.Check the tank level
2.Check the liquid level of the hand brake oil cup
3.Check the liquid level of the foot brake oil cup
4.Check the hand brake clamp system dynamic friction plate
5.Check the foot brake clamp system dynamic friction plate
6.Check braking effect of braking system
7.Check antifreeze level
8.Check the chain
9.Inspect rear sprocket, engine sprocket and chain guide structure
10.Check the chain guider
11.Check the outside surface of the tire
12.Check tire pressure
13.Check the battery level
14. Check the thickness of the front disc brake
15. Check the thickness of the rear disc brake
16. Check the torque of each fastener
17. Check the engine gear
18. Check cover
19. Check the fuel tank switch
20. Check if the body armour is fully worn

Precautions for ignition

The steps of electric ignition are as follows:
1、Open the electric lock.
2、Squeeze the brake lever with your right hand.
3、Hold the ignition switch with your right finger.
4、The engine starts to work, loosen the ignition switch, and the start of the vehicle is over.

The steps of kick ignition are as follows:
1、Squeeze the brake lever with your right hand.
2、Step on the start lever with your right foot vigorously.
3、The engine starts to work and he start of the vehicle is over.

Note：Before starting the engine for 2021 K6 carburetor models, turn the fuel tank switch to the "ON" position.

Precautions for start

1、An inspection should be carried out before starting, including the state of the vehicle and the driver’s dress.
2、When starting, the motorcycle should not go too fast.
3、 To ensure safety, please use the first gear to start driving for a certain distance before shifting gears.

Precautions for turning

1、Take care to slow down in advance when turning.
2、When turning, lower your center of gravity to reduce the risk of side rolling.
3、When turning, do not shift gears.

Precautions for acceleration

1、Do not accelerate on the corners.
2、After acceleration, shift gears in time.

Precautions for shift gears

1、Do not skip gears when shifting gears.
2、Do not increase the throttle when shifting gears.
3、Shifting should not be done in corners.

Precautions for brake

1、When braking should be based on the foot brake, hand brake as a supplement.
2、Check the level of brake fluid in the brake fluid cup every time you ride.
3、When the brake fluid is insufficient, the appropriate brake fluid should be added in time according to the maintenance manual.→p.47&50

Precautions for stop & park

1.When parking, we should pay attention to slow down first and then stop, and should not brake in an emergency.
2.When parking, unfold the single support and tilt to the left for parking operation.
3.Please put the gear in neutral before stopping.

Suggested inspection time for all parts of the vehicle

	1 hour after each ride	every 10 hours/after every ride	every 20 hours	every 30 hours
Check and charge the battery		●	●	●
Check the front disc brake plat		●	●	●
Check the rear disc brake plate		●	●	●
Check the front and rear disc brake discs		●	●	●
Inspect brake tubing for damage or leakage		●	●	●
Check the rear disc brake fluid level		●	●	●
Check the free stroke of the brake pedal		●	●	●
Check the frame and swingarm		●	●	●
Check whether the swingarm bearing is loose			●	
Check the top of the shock absorber		●	●	●
Check the shock absorber connecting rod		●	●	●
Check tire surface condition	○	●	●	●
Check tire pressure	○	●	●	●
Check hub bearings for looseness		●	●	●
Check the wheel hub		●	●	●
Check the rim bounce	○	●	●	●
Check the spoke tension	○	●	●	●
Check chain, rear sprocket, engine sprocket, guide sleeve and chain		●	●	●
Check chain tension	○	●	●	●
Oil all moving parts (chain, handlebars, etc.) and check for smooth		●	●	●
Check the front disc brake level		●	●	●
Check the free stroke of brake handlebar		●	●	●

Check whether the steering head bearing is loose	○	●	●	●
Check valve clearance	○			●
Check clutch			●	
Replace the cap seal and shaft seal ring of the pump				●
Change the gear oil	○	●	●	●
Check all hoses (such as fuel, cooling, exhaust, drainage, etc.) and	○	●	●	●
Check antifreeze and antifreeze level	○	●	●	●
Check the cable for damage and sharp bend		●	●	●
Check that the throttle cable is intact, free of sharp bends, and set	○	●	●	●
Clean air filter and air filter housing		●	●	●
Check whether screws and nuts are tightened	○	●	●	●
Replace the fuel filter	○	●	●	●
Check the carburetor idle speed	○	●	●	●
Check front and rear lights				
Final inspection: check whether the vehicle is running safely and conduct	○	●	●	●

○ One-time interval

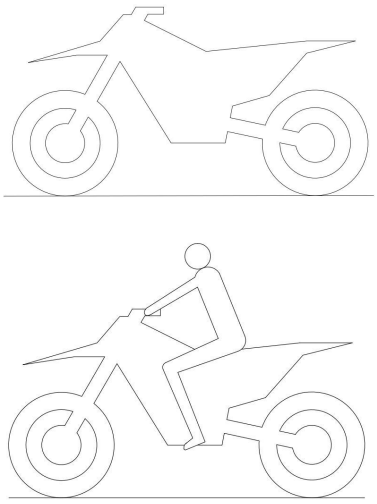
● Periodic interval

Attention： This table is for reference only. Please adjust the maintenance cycle of the motorcycle according to the specific model and use situation.

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

Suspension system

Check the vehicle's compression and rebound（with rider）



To ensure the best driving characteristics of the vehicle and avoid damage to swingarm, shock absorbers, linkage and frame, the basic setting of the suspension components must match the driver's weight.

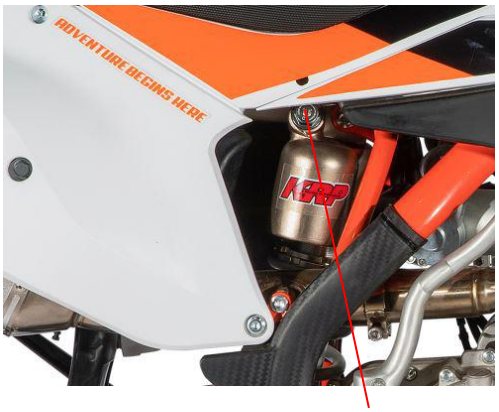
The total standard rider mass of the 2021 K6 off-road motorcycle is shown in the table below.

2021 K6	75～85kg

If the rider's weight is above or below the standard range, the basic setting of these sections must be adjusted accordingly. A small weight difference can be compensated by adjusting the rear shock absorber spring preload, but if the weight difference is large, the spring must be

replaced.

Adjustment for the low speed compression damping of rear shock absorber



adjusting screws

The low-speed compression damping of the rear shock absorber is controlled by an adjusting screw, which can be adjusted with a flat-blade screwdriver. When it is turned counterclockwise, the damping compression damping is reduced; when it is turned clockwise, the damping compression damping is increased.

Adjustment for the high speed compression damping of rear shock absorber

adjusting nut

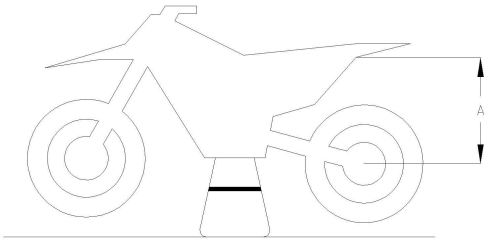
The high-speed compression damping of the rear shock absorber is controlled by an adjusting nut. It can be adjusted with an open-end wrench or T-sleeve. When it is turned counterclockwise, the damping compression damping is reduced; when it is turned clockwise, the damping compression damping is increased.

Adjustment for the rebound damping of the rear shock absorber

adjusting screws

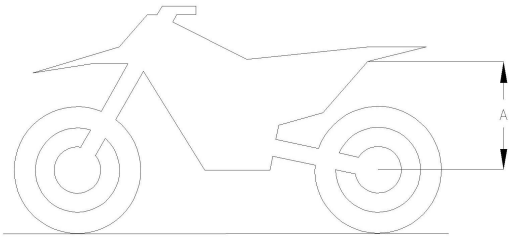
The rebound damping of the rear shock absorber is controlled by an adjusting screw, which can be adjusted with a flat-blade screwdriver. When it is turned counterclockwise, the rebound damping decreases; when it is turned clockwise, the rebound damping increases.

Measure the distance from the center of the rear wheel to the rear fender in suspension



The measurement procedure is as follows:
1, the whole motorcycle set up, so that the rear wheel is completely suspended
2. Select a fixed point on the side of the rear fender and mark it as "point 1".
3. Measure the distance from "Point 1" to the center of the rear axle and record it as "A1".
4. Remove the motorcycle from the rack

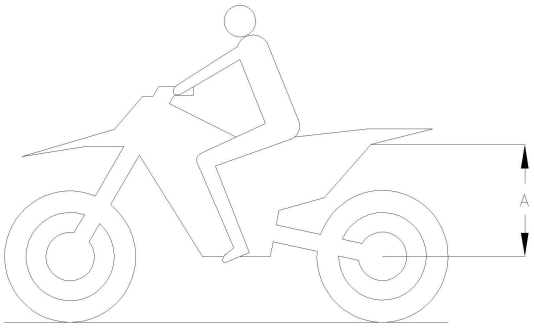
Measure distance from center of rear wheel to rear fender under no load



The measurement procedure is as follows:
1. The motorcycle is righted so that the center surface of the tire is perpendicular to the ground
2. Measure the distance from the center of the rear wheel axle of the motorcycle to "point 1" and record it as "A2".
3. Use single stand to support the vehicle
4. Calculate the difference between "A1" and "A2" and denote it as "D1".
The value of "D1" when K6 motorcycle leaves factory is shown below

Model	D1
2021 K6	25～35mm

Measure distance from center of rear wheel to rear fender in driving condition



The measurement procedure is as follows:

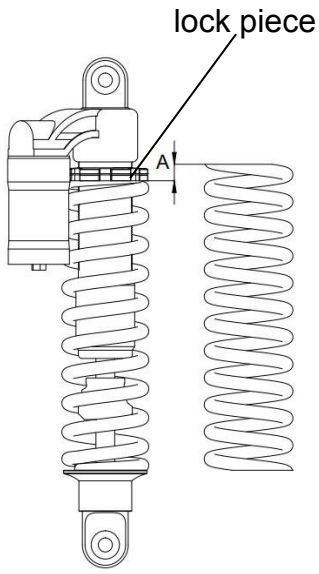
1. The driver rides the motorcycle (the engine does not start)
2. Righten the motorcycle so that the center surface of the tire is perpendicular to the ground
3. Measure the distance from the center of the rear wheel axle of the motorcycle to "point 1" and record it as "A3".
4. The driver uses single stand to support the vehicle and leave the seat
5. Calculate the difference between "A1" and "A2" and denote it as "D2".

The value of "D2" when 2021 K6 leave the factory is shown below

Model	D2
2021 K6	90～100mm

If "D2" measured by the customer is lower than the factory value, the spring preload can be lowered appropriately; If the customer measured "D2" is higher than the factory value, the spring preload can be adjusted higher; If "D2" is far less than the factory value, it is necessary to replace the spring with a lower hardness; If "D2" is much greater than the factory value, it is necessary to replace the spring with a greater hardness.

Adjustment for the spring preload of rear shock absorber



The spring preload of the rear shock absorber can be controlled by adjusting the lock piece. Adjust the lock piece to move down, the spring preload increases; Adjust the lock piece to move up, the spring preload is reduced.

Check for the setting of front shock absorbe

The inspection procedure of the front shock absorber is as follows:
1. Place the whole motorcycle on the ground
2. Righten the vehicle
3. Hold the handlebars with both hands and press down on the front shock absorber
4. Observe the effect of pressure and rebound of front shock absorber

If the compression of the front shock absorber is difficult, the compression damping should be appropriately reduced.If the rebound of the front shock absorber is difficult, the rebound damping should be appropriately reduced;When the ambient temperature is high, the front shock absorber should also be properly deflated.

Adjustment for the compression damping of front shock absorber

Steps of compression damping adjustment of front shock absorber are as follows:
1, check the front shock absorber, to determine whether the need to adjust the damping
2. Remove the handlebars
3, use a word screwdriver to rotate the damping adjustment screw to adjust. If compression damping needs to be reduced, turn the adjusting screw counterclockwise;If you need to increase the compression damping, adjust the screw

dozens of rotation

Adjustment for the rebound damping of front shock absorber

damping adjusting screw

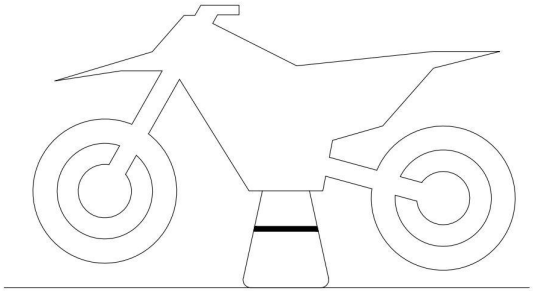
The adjustment steps of the rebound damping of the front shock absorber are as follow：
1, check the front shock absorber, to determine whether the need to adjust the damping
2. Use a screwdriver to rotate the damping adjusting screw to adjust. If you need to reduce the rebound damping, turn the adjusting screw counterclockwise;If rebound damping needs to be increased, turn the adjusting screw clockwise

Adjustment for the handlebar

The handlebars of the vehicle can be adjusted according to customers' driving habits. The specific steps are as follows:
1. Take out the jacket leather and jacket on the handlebar
2. Unscrew the press bolt so that the handlebar can rotate
3. Sit on the vehicle and help the handlebars to the natural position of your hands
4. Screw the press bolt back
5. Obtain the position of handlebars. If not satisfied, repeat the above process.

Related maintenance of the vehicle

Placement



When carrying out the related maintenance of the whole vehicle, it is necessary to suspend the motorcycle to facilitate the disassembly and assembly of various parts.

Disassembly and installation of disc brake cover

The disassembly and installation steps of the front disc brake cover are as follows:

1. Turn the front to the vertical position
2. Use a 5mm Allen key to remove the mounting screws
3. Remove the disc brake cover
4. Installation is carried out in the reverse order of disassembly

Disassembly and installation of front shock absorber guard plate

The disassembly and installation steps of the front shock absorber guard plate are as follows:
1. Remove the front shock absorber protection plate fixing screw
2, remove the front disc brake oil pipe clip
3. Remove the front shock absorber guard plate
4. Installation shall be carried out in the reverse order of disassembly
Note: when removing the front shock absorber guard plate of 2021 K6, the front wheel should be removed first, otherwise the screws on the inside near the tire cannot be removed.

Disassembly and installation of front disc brake

The disassembly and installation steps of the front disc brake are as follows:
1. Remove the mounting bolt of disc brake clamp body
2. Remove the front brake oil pipe clamp
3. Remove the front brake handle
4, remove the front panel over line card
5. Remove the front disc brake
6. Installation shall be carried out in the reverse order of disassembly
Note: For 2021 K6 model, disc brake cover should be removed first.

Disassembly and installation of front shock absorber

The steps of the front shock absorber are as follows:
1, remove the front disc brake
2. Remove the front wheel
3. Loosen the front shock absorber fixing bolt on the coupling plate
4. Remove the front shock absorber
5. Installation is carried out in the reverse order of disassembly.

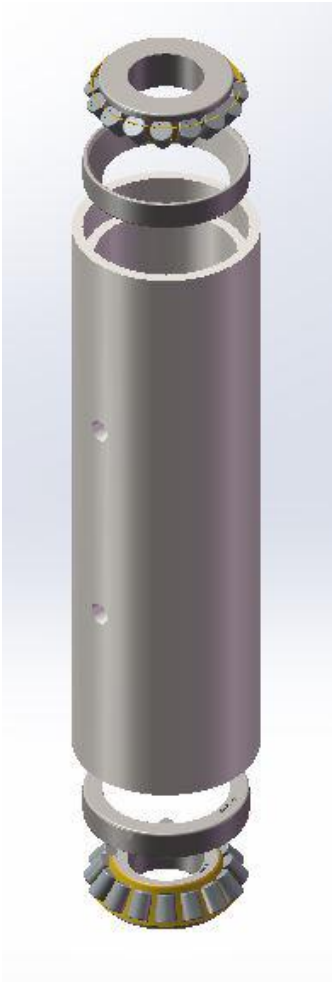
Disassembly and installation of coupling plate

The disassembly and installation steps of the coupling plate are as follows:
1. Remove the front shock absorber
2, remove the directional column lock nut
3. Remove the upper connecting plate
4. Remove the adjusting nut of the directional column
5. Take out the lower coupling plate
6. Remove the directional column
Installation is carried out in the reverse order of disassembly

Check the head steering

Check the head steering steps as follows:
1. Aerial the whole vehicle
2. By turning the handlebar left to right to control the motorcycle head, if it turns smoothly and there is no obstruction, the motorcycle head turning is normal
3. If it is found that there is a sense of delay and obstruction, then remove the coupling plate to check whether the steering bearing is normal

Disassembly,installation and lubrication of steering head bearing



When installing the steering bearing of the car head, apply a layer of lithium-based grease on the surface of the roller. Refer to the figure on the left for specific installation

Removal and installation of headlights

Fixing bolts of upper bracket

Removing Steps are as follows:

1. Remove the fixing bolts of the upper bracket
2. Remove the headlight
3. Pull out the connector between headlight and main cable
4. The installment should be carried out in the reverse order of removal.

Removal and installation of front fender

The disassembly and assembly steps of the front fender are as follows:

1. Remove the mounting bolts of the front fender;
2. Remove the front fender;

Installation is carried out in the reverse order of removal.

Removal and installation of rear shock absorber

Check the rear shock absorber whether the airbag is normal and the spring is cracked or not,etc. If necessary, replace the rear shock absorber.

Please follow the steps below to removing the rear shock absorber:

1. Remove the muffler tube (see the exhaust system inspection section for details).
2. Remove the mounting bolts of the rear shock absorber and the frame.
3. Loosen the connecting bolts of the U-shaped rocker arm and the triangular rocker arm (do not remove it);
4. Remove the connecting bolts between the rear shock absorber and the triangular rocker arm;
5. After confirming that there is no interference, take out the rear shock absorber from the side;

Perform the Installation in the reverse order of removal.

Removal and installation of seat cushion

The removal and installation steps of the seat cushion are as follows:

1. Remove the fixing bolt on both sides of the rear seat.
2. Take out the seat backwards.
3. The installation steps should be carried out in the reverse order of removal.

Removal and installation of air filter

The removal and installation steps of air filter are as follows:

1. Remove the side cover of the air filter;
2. Loosen the connection between the air filter hose and the throttle body/carburetor;
3. Remove the air filter sponge assembly;
4. Remove the air filter hose;
5. The installation is carried out in the reverse order of removal.

Note：2021 models of K6 adopt a unique tool-free maintenance design. The side cover of the air filter can be removed or installed from the main body of the cover with only hands.

Cleaning and maintenance of air filter

Before performing maintenance on the parts of the air filter, you need to check first as follows:

1. Check whether there are cracks on the surface of the air filter hose
2. Check whether the air filter sponge is damaged
3. Check whether the air filter sponge support is damaged
4. Check whether there is a rupture problem in the air filter

If the air filter is damaged, replace the corresponding parts; if no parts are damaged, perform maintenance as follows:

1. Clean the air filter hose with water and let it air dry
2. Clean the dust attached to the air filter sponge and infiltrate the surface with air filter oil. If the dust on the sponge is really difficult to handle, you can also replace the new air filter sponge.
3. Clean the surface of the air filter sponge support, let it dry naturally, and then apply a layer of oil on the surface
4. Rinse the air filter housing with water and let it air dry

Removal and installation of exhaust pipe

The removal and installation steps of exhaust pipe are as follows:
1. Remove the muffler
2. Remove the fixing bolts of the exhaust pipe
3. Remove the fixing nut at the connection of the engine exhaust pipe
4. Remove the exhaust pipe
5. Installation is carried out in the reverse order of removal

Removal and installation of muffler

The exhaust pipe and the muffler can guide the gas emission and reduce the noise.
If the exhaust pipe is rusty 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.
For the cleaning of the exhaust system, please consult with KAYO dealers before proceeding.
If you need to replace the muffler, please follow the steps below:
1. Unscrew the mounting bolts of the muffler;
2. Unscrew the fixing bolts of the muffler;
3. Loosen the buckle at the connection between the muffler and the exhaust pipe;
4. Pull out the muffler backwards;
5. Replace the muffler and install the fasteners;
6. Fastener installation is carried out in the reverse order of removal.

Removal and installation of fuel tank

Installation screw

Removal and installation of fuel tank are as follows:

1. Remove the seat cushion
2. Remove the water tank
3. Remove the front left and right guard plates
4. Unscrew the fuel tank installation screws
5. Remove the fuel tank from the frame
6. Installation is carried out in the reverse order of removal

Check the chain and clean it

The inspection of the chain is carried out from the following aspects:

1. Observe the chain from the rear of the vehicle to check whether the chain is generally skewed
2. Rotate the rear wheel by hand to observe whether the rotation of the rear wheel is smooth
3. Carefully check the gap between the chains to see if there is any sediment attached

The cleaning steps of the chain are as follows:

Use a special cleaning agent to wash the surface of the chain and the silt and grease in the gaps, wait until the chain is naturally air-dried, and then apply a layer of anti-rust oil on the surface of the chain.

Removal and installation of chain

The removal and installation steps of the chain are as follows:
1. Remove the spring on the chain
2. Remove the movable section of the chain
3. Pull out the chain from below the sprocket
4. Installation is carried out in the reverse order of removal

Adjustment of chain tension

The chain transfers the power output from the engine to the wheels so that the motorcycle can move. So it is an important part of the motorcycle. Therefore, the chain needs frequent inspection and maintenance to ensure its normal use.
The chain tension can be adjusted according to requirements, the steps are as follows:
1. Fix the motorcycle so that the rear wheel is completely suspended;
2. Measure the distance between the rear of the flat fork and the chain. The normal distance should be 30-40mm, which is about the distance between two fingers. The distance should be close to the normal distance, and it is not necessary to be very demanding;
3. Loosen the rear axle nut;
4. Find the position with the greatest tension on the chain when the normal distance is satisfied;
5. Through the nut on the tensioner, use the notches on the tensioner and the lugs on the adjuster to align the two ends of the flat fork;
6. Tighten the tensioner nut;

7. Tighten the rear axle nut;
8. Check the point of maximum tension and readjust the tension if necessary.

When checking the chain tension, in addition, a visual inspection of the chain guide and sprocket is required.

When the chain is over-used or the stretch exceeds 2%, the chain should be replaced, and the corresponding guide rail and sprocket should be replaced at the same time. 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 quickly 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 original factory production or 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.

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

Inspection of rear sprocket, engine sprocket and chain guide structure

Check the wear of the chain guide and the chain protector on the swingarm. Under normal circumstances, these two can play a role in guiding the movement of the chain. If the wear is too large, it is not conducive to the normal movement of the chain and affects its transmission effect. Therefore, the excessively worn chain guide and chain protector should be replaced in time to ensure that the motorcycle works normally.

Inspection of the frame

Checking steps are as follows:

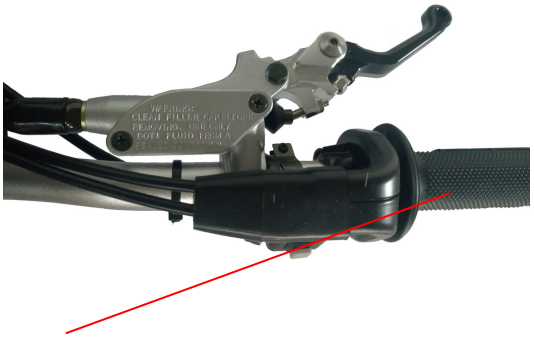
1. Check whether the paint layer on the surface of the frame is damaged or not.
2. Check whether the fixed points of the frame are deformed or not, especially the installation points of the engine, flat fork and rear shock absorber.
3. Check whether there are cracks on the surface of the frame, especially at the welded point.

Inspection of the swing arm

Checking steps are as follows

1. Check whether there are cracks on the surface of the swing arm
2. Check whether there is any deformation at the mounting point of the cradle on the swing arm
3. Check whether the surface paint of the swing arm is damaged or not.

Inspection of throttle cable



Throttle lever

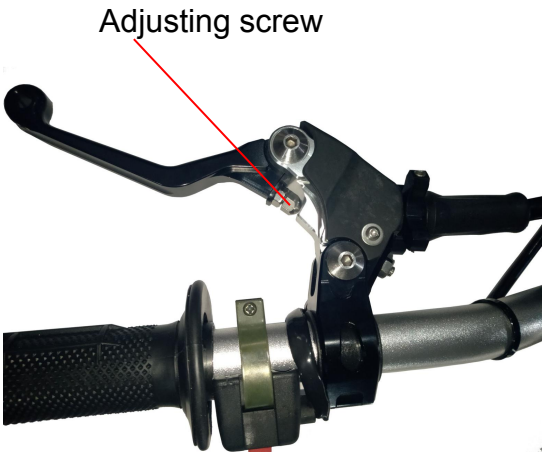
The method of checking the throttle cable is as follows:

1. Turn the throttle lever to feel whether the throttle rebounds smoothly
2. Start the motorcycle engine, turn the front of the car left and right, and observe whether the power of the engine changes due to the movement of the front of the car.

Inspection of handlebar

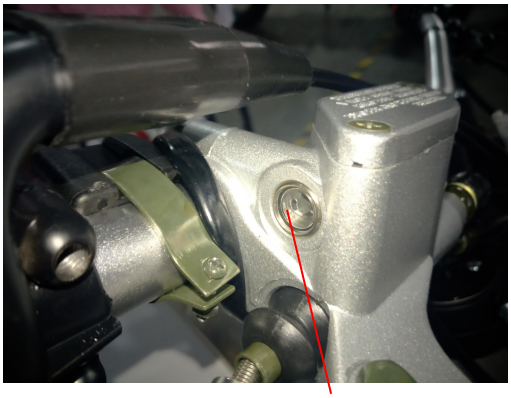
Let the rider sit on the vehicle, put his hands on the handlebars naturally, and feel whether the position of the clutch lever and brake lever is comfortable. If you feel difficult to control, adjust the positions of the clutch and brake levers.

Adjust the angle of the clutch lever



The clutch angle can be adjusted according to the customer's wishes:
By adjusting the screw, the angle between the clutch lever and the handlebar can be changed.
This setting does not change the internal structure of the clutch, so it will not affect the normal use of the clutch.

Check the level of the hydraulic clutch and replenish the transmission fluid



K6 uses a hydraulic clutch, and its liquid level needs to be checked frequently. The inspection steps are as follows:
1. Observe the liquid level of the clutch transmission fluid through the observe hole, the liquid level should not be lower than the minimum liquid level, that is half of the observation hole;
2. Pinch and release the clutch lever with your hands. If you feel that is soft, check whether the transmission fluid pipe is leaking. If there is a leak, replace the hydraulic clutch.

If the fluid level of the clutch transmission fluid is lower than or equal to the minimum fluid level, you need to replenish the transmission fluid, the steps are as follows
1. Unscrew the fixing screw of the oil cup cover
2. Remove the oil cup cover
3. Add transmission fluid to the maximum level
4. Put back the lid and screw back the fixing screws

Check and maintain of brake system

Check the free stroke of the front brake lever

The method of checking the stroke of the front brake lever is as follows:

1. Put your right hand on the right hand grip naturally;
2. Use the index finger and middle finger of your right hand to check the free stroke. At this time, two fingers are required to hook and pull the handle;
3. Pinch and release the handle, and feel the resistance of each pinch and release;
4. If it feels soft when pinching, air may be mixed into the oil pump or oil pipe. Then, check the entire brake system and take corresponding measures.

Adjust the stroke of the front brake lever

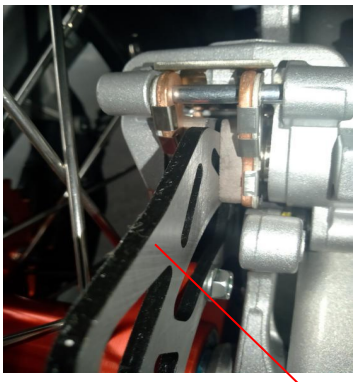
front brake lever：

The front brake lever can be adjusted to suit the operating habits of different people. The adjustment steps are as follows:

1. Loosen the fixing nut;
2. Turn the adjusting nut to adjust the angle of the handlebar to the position you are satisfied with;
3. Return the fixing nut.

Danger: Please test the brake system (including front brake and rear brake) every time the motorcycle starts. If you 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 parts of the brake system are in poor condition. Once the above situation occurs, please check the brake system immediately and contact your KAYO dealer.

Check the brake disc

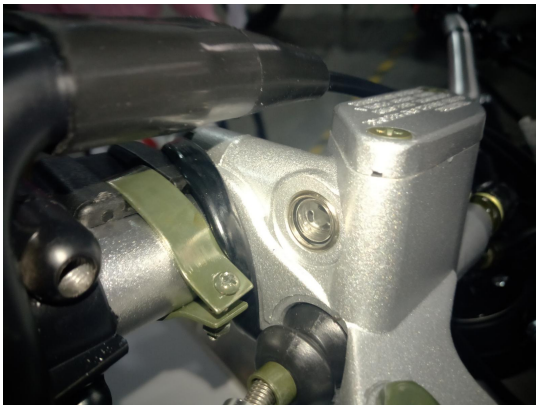


brake disc

Check the brake disc from the following aspects
1. Check whether there are cracks, dents and other damages on the surface of the brake disc
2. Measure the thickness of the brake disc and compare it with the limit thickness.If the measured brake disc is less than or equal to the limit thickness of the brake disc, then it must be replaced immediately.
The limit thickness table of brake disc is as follows:

	Limit thickness of front brake disc	Limit thickness of rear brake disc
2021 K6	3.5mm	3.5mm

Check the front brake fluid level



2021 K6 model use hydraulic disc brakes, and the brake fluid level of the disc brakes can be checked through the observation hole.
If the liquid level is lower than the lower edge of the observation hole, you should immediately add brake fluid to the upper edge of the observation hole.

Add the front 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 also 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.

Note: Even if the motorcycle is not used for a long time, the brake fluid should be changed once a year.

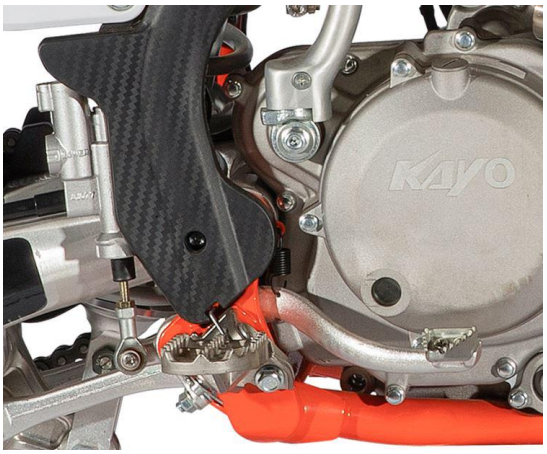
Check the front brake pads

Check the thickness of the brake pads of the caliper. If the thickness of the brake pads is less than the minimum, then it must be replaced.

The minimum thickness of the brake pad is 1mm.

Note: The brake pads should be replaced as a complete set. If you are not sure to complete the replacement work, please go to the KAYO dealer and have a professional complete the replacement.

Check the free stroke of the foot brake



Rear brake pedal：

Normally, the free stroke of the brake pedal is shown in the table below. Check the brake pedal and pay attention to whether the stroke is correct.

Model	Free stroke of brake pedal head
2021 K6	25～40mm

Check the rear disc brake fluid level

Observe through the liquid level hole to check the level of brake fluid. 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.

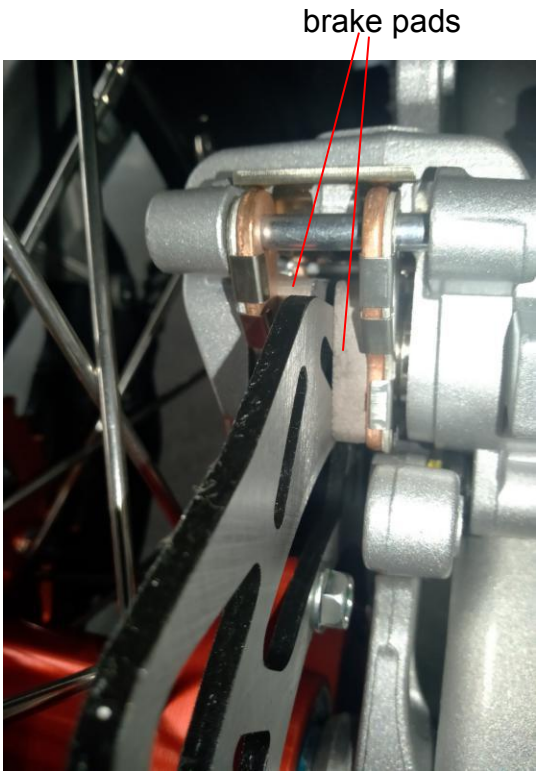
Note: Do not splash the brake fluid on the paint surface, which may cause corrosion.
Danger: Please pay attention to check whether the brake fluid is leaking and whether the brake fluid pipe is damaged. If there is a leakage problem, please contact KAYO dealer.

Replenish the rear disc brake fluid

The steps for replenishing rear brake fluid are as follows:
1. Remove the cup cover screw;
2. Remove the cover of the cup;
3. Add brake fluid to a suitable position;
4. Replace the cup cover .

It is recommended to use DOT4 brake fluid.

Check the rear brake pads



check the thickness of the brake pads of the brake caliper, the thickness should not be less than 1 mm. If the thickness of the brake pads is lower than the minimum thickness, the entire set of brake pads should be replaced immediately.

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

Tire inspection and maintenance

Removal and installation of front wheels

The front wheels can be dismantled in the following order:

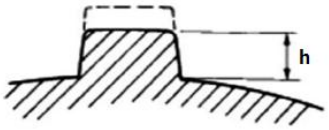
1. Put the whole car on the stool and let it hang in the air.
2. Remove the front brake disc guard (if there is no guard, skip this step).
3. Loosen the front wheel shaft lock nut.
4. Fix the front wheel with one hand, and slowly pull out the front wheel axle with the other hand.
5. Remove the front wheel and place it in a suitable position.
6. Installation is carried out in the reverse order of removal

Removal and installation of rear wheels

The rear wheels can be dismantled in the following order:

1. Loosen the chain adjusting nut
2. Remove the chain
3. Loosen the rear axle lock nut
4. Fix the rear wheel with one hand, and slowly pull out the rear axle with the other hand
5. Remove the rear wheel and put it in a suitable position
6. Installation is carried out in the reverse order of removal

Check the outside surface of the tire

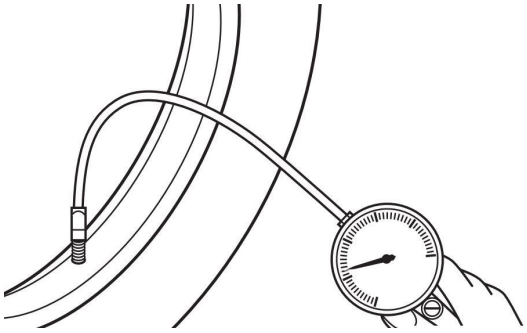


The inspection steps for the outer surface of the tire are as follows:

1. Check whether there are scratches, holes or foreign matter attached to the outer surface of the tire;
2. Check the tire pattern height. If it is less than or equal to the minimum height, replace the tire immediately.

The minimum height of the tire pattern: h=3mm.

Check the tire pressure



Use a pressure gauge to check whether the tire pressure level meets the vehicle's standard. If there are frequent problems with low pressure, check whether the tire is leaking. If the tire is leaking, please contact KAYO dealer.

Recommended pressure：

	front wheel air pressure	rear wheel air pressure
2021 K6	225kPa	280kPa

Note：The check of tire pressure should be carried out under normal temperature conditions.

Check the rim and spokes

Flick the adjacent spokes with your fingers to check whether the tire spokes lack tension. If you find that the spokes are loose and weak, you must check all the spokes and both wheels. If there is any problem, please contact the KAYO dealer.

Electrical system

Battery removal and installation

The steps for removing 2021 K6 battery are as follows:
1. Remove the seat cushion
2. Disconnect the battery from the main cable
3. Remove the screws of the battery fixing bracket
4. Remove the battery

Installation is carried out in the reverse order of removal

Replace the battery

If you find bulging on the surface of the battery or the battery is charged frequently, you need to replace the battery. New batteries need to use KAYO original products or KAYO authorized products.

The size data of the battery is: 112mm×69mm×85mm

The cooling system

Overview of cooling system

The antifreeze fluid can absorb excessive heat from the engine and transfer it to the air through the radiator. If the antifreeze fluid level in the water tank is insufficient, it will not have a cooling effect, and the engine will be damaged due to overheating. Therefore, before each motorcycle is used, the level of antifreeze must be checked to ensure normal cooling.

In order to protect the metal parts of the cooling system from rust or corrosion due to antifreeze, the antifreeze should contain chemical inhibitors. The use of antifreeze without chemical inhibitors is easy to make the metal part of the cooling system rust, hinder the cooling pipe, and affect the cooling effect.

Note: Our company originally selected Volkswagen Baishun antifreeze for this series of models, with a freezing point of -25°C.

Danger: The antifreeze is a chemical reagent, which may be harmful to the human body. Please read the manufacturer's instructions carefully when using it.

Warning: Using incorrect antifreeze will cause damage to the engine and cooling system. Please select antifreeze containing inhibitors according to the instructions.

Removal and installation of water tank guard plate and pipe

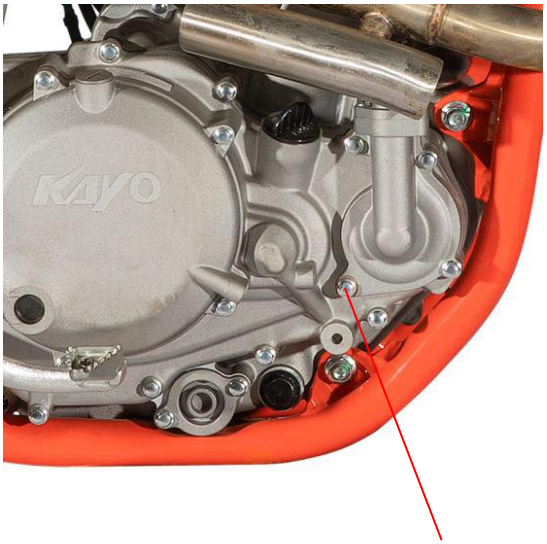
Check if the antifreeze water tank water pipe is cut or damaged, and if there is any leakage after connection.
Check whether the fins outside the water tank are blocked, and clean the dirt with low-pressure water flow.
Warning: Do not use high-pressure water to clean the fins, which may damage the fins and affect the heat dissipation effect of the cooling system. In addition, please do not install unauthorized accessories, which will interfere with the heat dissipation of the cooling system, and this interference may cause damage to the engine due to overheating.

Check antifreeze level

the highest level

When checking the level of antifreeze, follow the steps below:
After parking the car, wait for the motorcycle to turn off and cool down;
Rotate the water tank cover, after the hot steam in the water tank overflows, open the water tank cover to complete the disassembly;
After shaking the motorcycle from side to side, check the level of the antifreeze, the level should be below the highest level;
If the amount of liquid is insufficient, add the required amount through the opening.

Drain the antifreeze



the drain screw

On water-cooled engines, the antifreeze in the engine and cooling system can be discharged through the drain screw. The draining steps are as follows:

1. After parking the motorcycle, wait for the engine to cool down completely;
2. Place a container under the drain screw, which is located under the water pump cover, to drain the antifreeze from the engine and the water tank;
3. Unscrew the drain screw, at this time the antifreeze liquid still cannot be drained due to the air pressure problem;
4. Remove the water tank cover to allow air to enter the cooling system to facilitate the smooth discharge of antifreeze.

Note: If the water tank cover has not been loosened, and the antifreeze can flow down smoothly, it indicates that one or more places in the cooling system are leaking, and a comprehensive inspection is required.

Change antifreeze

The antifreeze fluid needs to be replaced regularly to extend the service life of the engine. The replacement steps are as follows:

1. Drain the antifreeze;→p.50
2. When the antifreeze is drained, screw back the screw;
3. Add a small amount of antifreeze through the water tank port to check if there is any leakage in the cooling system;
4. Add antifreeze to a suitable level;
5. Start the engine, heat it for 5 minutes, then turn off ;
6. After the engine has cooled down, check the liquid level, if the liquid level drops, add to the appropriate liquid level;
7. Tighten the water tank cover.

Danger: To avoid burns, do not remove the water

tank cover and drain screw when the engine is hot, and wait for the engine to cool down before proceeding.

Danger: If the antifreeze liquid falls on the tires, it is easy to make the tires slip and cause an accident. Therefore, the antifreeze falling into the chassis and wheels should be cleaned. Check the replaced antifreeze. If there are white spots in the antifreeze, it means that the aluminum part of the cooling system is corroded; if the liquid is brown, it means that the steel or iron part of the cooling system is corroded. In addition, the cooling system is normal.

Warning: Check the sealing ring in the cooling system, if it is damaged, it needs to be replaced.

Engine installation

The installation steps of the engine are as follows:

⑴ Hang the engine on the frame (pay attention to protect the appearance of the engine);

⑵ Install the throttle body/carburetor to the intake elbow and fasten it with nuts and bolts;

⑶ Install the throttle cable and air filter, the interface should be sealed, and the clutch control cable should be installed;

⑷ Install the transmission chain;

⑸ Install the left rear cover or sprocket guard, fasten with bolts, pay attention to the outgoing wire of the magneto;

⑹ Install exhaust silencer. The M8 nut and the exhaust pipe sealing ring should be installed firmly, with a tightening torque of 25～30N•m, and the exhaust port should not leak air during installation.

Inspection, disassembly and installation of the engine cylinder head

Precautions

1. Camshaft lubrication is lubricated by the oil passage on the cylinder head through the oil hole of the rocker shaft. The oil passage on the cylinder head must not have foreign matter enter and keep it unblocked;
2. Before installing the cylinder head, the cylinder head positioning pin must be assembled;
3. The camshaft should not have scratch marks, and oil should be applied first when assembling;

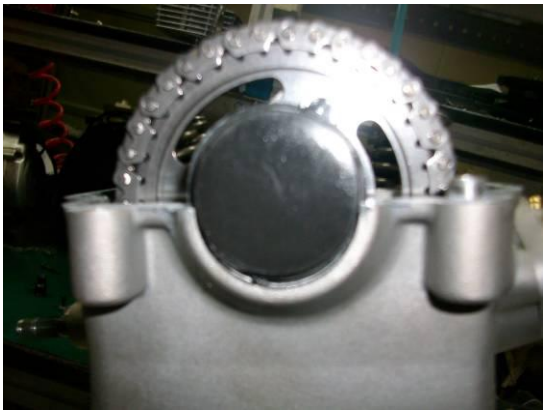
Maintenance parameters of various parts

items		standard value（mm）	Repair limit value（mm）
The axial clearance between the swing arm and swing arm of the cylinder head cover		0.05～0.3	0.5
Radial clearance between swing arm and rocker shaft		0.016～0.045	0.08
Free length of valve spring		48.35	47.5
Valve clearance		0.04～0.06	/
Camshaft base circle runout		0.02	0.04
Clearance between valve stem and catheter	Intake	0.013～0.04	0.07
	exhaust	0.025～0.052	0.08
Width of valve seal band		1.5	/
Cylinder head	Flatness	0.04	0.05
	Working surface width of valve seat	0.8	/

Removal of cylinder head cover

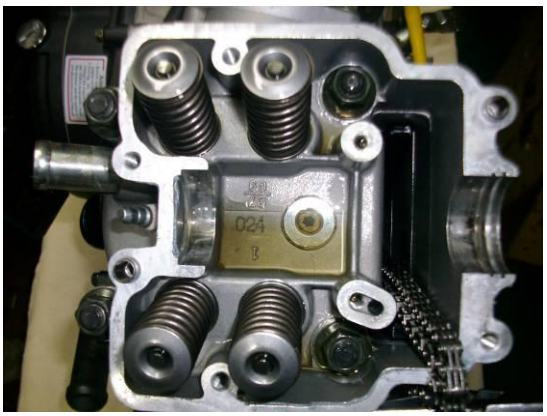
The removal steps of the cylinder head cover are as follows:
1. Remove the 4 GB/T16674 small plate M6×20 fastening bolts of the valve cover on the intake and exhaust sides of the cylinder head cover;
2. Remove the valve cover on the intake and exhaust sides of the cylinder head;

3. Remove 2 GB/T16674 small plate bolts M6×60, 2 GB/T16674 small plate bolts M6×35, 4 GB/T16674 small plate bolts M6×30 that fasten the cylinder head cover, and remove 2 A88 intake pipe gasket and install it on the M6×60 bolt;



4. Remove the cylinder head cover

Removal of cylinder head



The removal steps of the cylinder head are as follows:

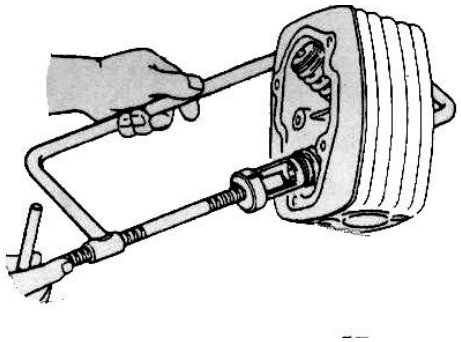
1. Remove the NC250 cylinder head sealing rubber sleeve and NC250 camshaft baffle plate;
2. Remove GB/T16674 small plate bolt M6×16 and ZS500 positioning plate washer 6.5×1.5×18;
3. Remove the two GB/T16674 small plate bolts M6×20 that fasten the tensioner, and then remove the tensioner bolt, tensioner combination, and tensioner gasket;
4. Remove the timing chain sleeved on the timing driven sprocket;
5. Remove the camshaft assembly;
6. Remove the GB/T16674 small plate M6×25 bolts connecting the cylinder head and cylinder block;
7. Remove 4 ZS500A, B bolt nuts M10×1.25, and then remove 4 ZS500A, B bolt nut washers 10.5×2×20;
8. Remove the cylinder head.

Decomposition of cylinder head cover

The decomposition steps of the cylinder head cover are as follows:

1. Remove the two NC250 rocker shaft positioning plate bolts M14×1 on the cylinder head cover,
2. Remove the inlet and exhaust rocker arm shafts, and the inlet and exhaust rocker arms.

Decomposition of cylinder head

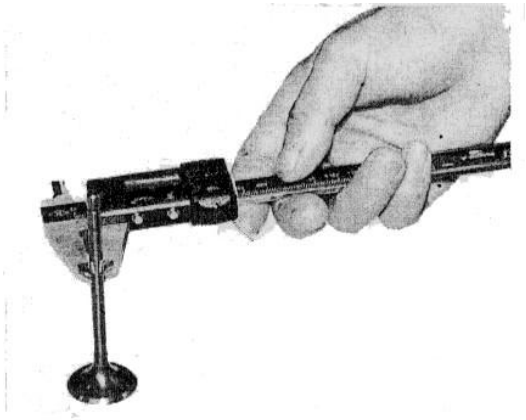


The decomposition steps of the cylinder head are as follows:

1. Press down the valve spring with a valve remover;
2. Remove the valve lock clip;
3. Loosen the valve remover;
4. Remove the valve spring seat;
5. Valve spring and valve.

Note: In order to prevent permanent deformation of the valve spring, the valve spring cannot be compressed excessively, only the valve lock clip can be removed; all the removed parts should be marked to ensure that they reach the original assembly position during assembly.

Inspection of valves and valve springs



The inspection steps are as follows:
1. Check whether the valve is bent, burned or the valve stem has abnormal wear;
2. Measure the outer diameter of the valve stem; the maintenance limit value:
Intake: φ4.96mm Exhaust: φ4.94mm
3.Measure the width of the contact surface; repair limit value: 1.5mm
Note: If the contact surface of the valve is rough, abraded unevenly or the contact with the valve seat is abnormal, the sealing performance cannot be guaranteed, and the valve should be replaced.

4.Measure the free length of the valve spring;
Service limits (intake and exhaust): 47.5 mm

Inspection of swing arm and shaft

The inspection steps of the swing arm and swing shaft are as follows:
1. Check whether the swing arm is worn, damaged, or the axial clearance of the swing arm rollers, such as the abrasion, serious damage, or the axial gap of the swing arm rollers
If the gap is too large, a new swing arm needs to be replaced;
2. Check whether the swing shaft is worn or not. If the wear is serious, replace the swing shaft with a new one.

Inspection of camshaft parts

The inspection steps of camshaft components are as follows:
1. Check whether the surface of the camshaft is worn or damaged, and whether the bearings at both ends of the camshaft rotate flexibly. If the wear is serious or the bearing is spinning, new camshaft parts should be replaced;
2. Check whether the NC250 camshaft pressure reducing valve slinger assembly has cracks, ruptures, etc., and whether the pressure reducing valve centrifugal slinger and the pressure reducing valve core shaft are loose. If so, replace the pressure reducing valve slinger assembly.

Inspection of cylinder head

The inspection steps of the cylinder head are as follows:
1. Check whether the airtightness of the cylinder head is good. If the airtightness of the cylinder head is poor, replace the cylinder head or valve with a new one;
2. Check whether there are cracks in the spark plug hole and valve seat;
3. Check whether the cylinder head is deformed, and check the flatness of the cylinder head with a knife-edge ruler and feeler gauge.

Inspection and grinding of valve seat

1. Check the valve seat: completely remove the carbon deposits in the combustion chamber, apply a thin layer of red stamping oil evenly on the valve seat, place the valve on the valve seat and knock the valve lightly without rotating, and then pull out the valve. If the contact marks on the valve working surface are discontinuous, the valve seat should be polished and repaired.
2. Grinding of the valve seat: remove the carbon deposits on the intake and exhaust valve seats, and then apply abrasives on the valve seat, and then use the rubber head grinding tool to suck up the valve and grind the valve seat.

Inspection of valve guide

Use a dial indicator to measure the inner diameter of each valve catheter and make a record.
Maintenance limit value: intake: φ5.035 mm; exhaust: φ5.035 mm

Note: Before measuring the inner diameter of the valve guide, the carbon deposits in the guide should be completely removed.
If the valve guide needs to be replaced, the valve seat should be polished again, and each valve should be inserted into the guide, observe its movement, and finally calculate the gap between the valve stem and the valve guide.
Valve clearance maintenance limit clearance: intake: 0.07 mm; exhaust: 0.08mm

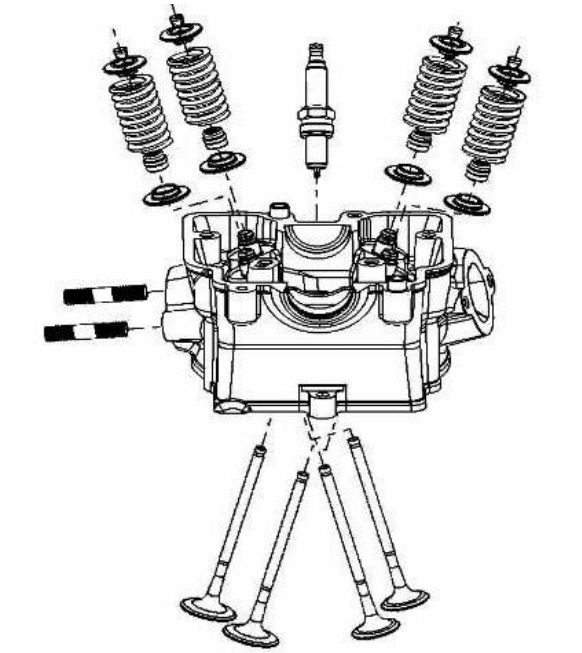
Replacement of valve guide

The valve guide replacement steps are as follows:
1. Put the cylinder head in a thermostat and heat it to 100-150 degrees Celsius, take out and support the cylinder head (be careful not to burn), and use the valve disassembly tool to drive the valve guide toward the side of the rocker chamber;
2. Press-fit the new valve guide, and ream the newly installed valve guide after the cylinder head cools down;
3. Clean the cylinder head with cleaning agent, and use compressed air to remove the metal chips accumulated on the cylinder head.
Note: When removing the valve guide, do not damage the cylinder head.
Note: When reaming, the reamer must be coated with cutting oil, and the reamer should be rotated when loading or unloading.

Measure the width of the valve seat contact surface

Measure the width of the valve seat contact surface, and its maintenance limit: 1.5 mm
If the measured valve seat is too wide, too narrow or has dents, the valve seat should be ground to achieve the correct degree of sealing. The grinding steps are as follows:
1. Use an electric holster to put on the rubber tube (with a tight fit);
2. Put the valve stem on the rubber tube, and apply a little graphite paste for grinding on the valve sealing tape;
3. Then attach it to the sealing line of the valve seat, start the electric gun, rotate the valve, and grind the valve and seat ring together.
4. Check whether the sealing line between the valve and the seat ring has been ground, otherwise it should be ground again.
If the grinding is not in place, replace the valve or cylinder head.

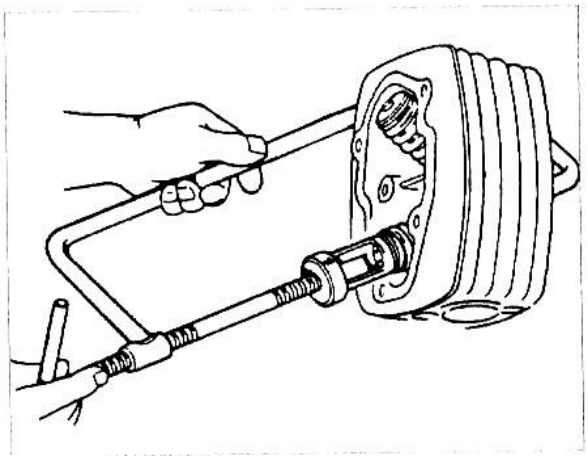
Assembly of cylinder head



The assembly steps of the cylinder head are as follows:

1. Install the valve spring lower seat and the oil baffle cover on the valve guide;
2. After coating the intake and exhaust valve rods with lubricating oil, install the valve guide, install the valve spring, the valve spring upper seat and the valve lock clip;
3. Use the valve remover to press down the valve spring, and then install the valve lock clip into the valve spring seat;

Note: In order to prevent permanent deformation of the valve spring, do not over-compress the spring so that it can be installed in the valve lock clip.



4. Check whether the valve lock clamp assembly is in place;
5. Check the air tightness of the assembled cylinder head assembly. If the cylinder head assembly does not leak, proceed to the next step.

Assembly of cylinder head cover

Rocker shaft trim

The assembly steps of the cylinder head cover are as follows:

1. Put the inlet and exhaust rocker arms into the cylinder head cover first;
2. Respectively assemble the intake and exhaust rocker arm shafts through the cylinder head cover and the intake and exhaust rocker arm shaft holes;
3. Install the NC250 rocker arm shaft positioning plate bolts into the corresponding holes on the cylinder head cover and tighten them.

Note:

When installing the rocker arm shaft, the side with the trimmed side of the rocker arm shaft should face the hanging hole on the cylinder head cover;

After the cylinder head cover is installed, rotate the rocker arm, the rocker arm should rotate flexibly without jamming;

3. Tightening torque of the bolts of the rocker shaft positioning plate: 16～20N·m.

Installation of cylinder head

The installation steps of the cylinder head are as follows:

1. Remove the old cylinder head gasket, install the new cylinder head gasket, and then install the positioning pin;
2. Install the cylinder head on the A and B bolts, then put the ZS500A and B bolt nut washers on the A and B bolts, and then install the ZS500A and B bolt nuts on the A and B bolts and tighten them;

Note: Do not allow dust and scum to enter the cylinder; tightening torque of bolts A and B: 55～60N·m.

3. Install the cylinder head cylinder body connecting screw GB/T16674 small plate bolt M6×25 into the cylinder head cylinder body connection hole and tighten it, tightening torque: 11～13N·m;
4. Install the camshaft on the cylinder head, and then install the timing chain on the timing driven

sprocket on the camshaft, and then check whether the engine is in the timing position. If it is not in the timing position, readjust the engine Timing position.

The method of NC250 engine timing adjustment:

(1) Remove the large view hole cover of the left front cover and NC250 rocker shaft positioning plate bolts;

(2) Rotate the NC250 magneto lock nut with a special tool, and at the same time observe whether the timing line "one" on the magneto rotor is aligned with the timing mark on the left front cover through the rocker shaft positioning plate bolt hole on the left front cover positive;

(3) After the above timing mark is aligned, pay attention to observe whether the timing mark on the timing driven sprocket is on the same plane as the cover surface;

Only when (2) and (3) are satisfied at the same time can the engine be in the correct timing position.

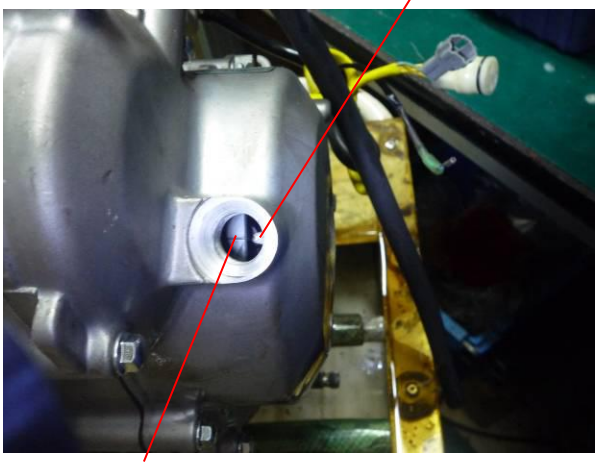
After adjusting the timing position, assemble the large sight hole cover and rocker shaft positioning plate bolts to the left front cover;

5. Install the tensioner into the corresponding hole on the cylinder body, and fasten it with two GB/T16674 small plate bolts M6×20, and finally assemble the tensioner spring, sealing ring and bolt in place;

6. Put the ZS500 positioning plate washer on the GB/T16674 small plate bolt M6×16, fasten the bolt to the camshaft, install the NC250 camshaft baffle into the baffle groove of the cylinder head, and finally set the NC250 cylinder The head sealant is set into the sealant sleeve groove of the cylinder head.

Installation of cylinder head cover

left front cover timing mark



Magneto rotor timing mark

Timing mark for timing driven sprocket

The installation steps of the cylinder head cover are as follows:

1. Apply a layer of silicone rubber plane sealant evenly on the joint surface of the cylinder head cover;
2. Install the assembled cylinder head cover on the cylinder head;
3. Set two A88 intake pipe washers to GB/T16674 small plate bolt M6×60, install it in the cylinder head oil passage hole, and then install two GB/T16674 small plate bolts M6×35 and 4 GB/T16674 small plate bolts M6×35 /T16674 Small plate bolt M6×30 passes through the corresponding hole of the cylinder head cover and tightened, tightening torque: 11～13N.m.
4. Adjust the clearance between intake and exhaust valves, the clearance value of the valve: 0.04～0.06mm
5. Install the valve cover on the cylinder head cover and fasten it with GB/T16674 small plate bolts M6×20, tightening torque: 11～13N.m.

Troubleshooting

Performance	Possible Causes	
Low air pressure in the cylinder	Valve	Incorrect valve clearance adjustment
		The valve is not tightly sealed
		Wrong gas timing
		Broken valve spring
	Cylinder head	The spark plug is not connected tightly to the cylinder head
		Damaged cylinder head gasket
		Cracks or blisters in the cylinder head
	Cylinder, piston, piston ring	Piston ring clearance is too large or broken
		Piston is cracked or excessively worn
		Excessive cylinder inner diameter or blisters
Black smoke in	Valve guide wear	

exhaust	Leaking or damaged oil baffle
	Cylinder head gasket leakage
	Piston ring clearance is too large
Excessive noise or abnormal noise	Incorrect valve adjustment
	The valve is stuck or the valve spring is broken
	Excessive wear on the upper rocker arm
	Inaccurate gas timing
	Camshaft wear

Engine cylinder and piston

Notes

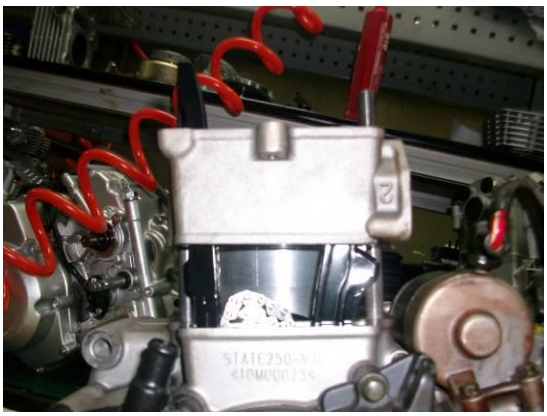
1、Cylinder head lubricating oil is supplied to the cylinder head through the small oil hole next to the AB plug on the left body of the engine. Before installing the cylinder, make sure that the small oil hole next to the AB plug on the left body is unblocked.
2、Do not allow dust or dust to penetrate into the crankcase.

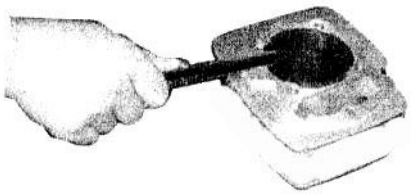
Maintenance parameters of various parts

Item			standard value（mm）	Repair limit value（mm）
Cylinder	Cylinder inner diameter		φ77～φ77.01	φ77.018
	Out of roundness		0.05	0.01
	Flatness of cylinder surface		0.03	0.05
Piston/piston ring/piston pin	Piston outer diameter		φ76.96～φ76.97	φ76.94
	Piston pin hole inner diameter		φ16.001 ～ φ16.006	φ16.015
	Clearance between piston pin and piston pin hole		0.001～0.012	0.025
	Piston ring closed gap	Top ring/Second ring	0.2～0.35	0.5
		Oil ring	0.2～0.7	1.4
	Piston ring and piston ring groove clearance	Top ring	0.03～0.07	0.08
		Second ring	0.02～0.06	0.08
	Cylinder and piston clearance		0.035～0.045	0.07
	Piston pin outer diameter		φ15.994～φ16	φ15.99
Connectin	inside diameter		φ16.015 ～	φ16.04

g rod small end		φ16.025	
	Clearance between small end of connecting rod and piston pin	0.015～0.03	0.05

Disassembly of the cylinder





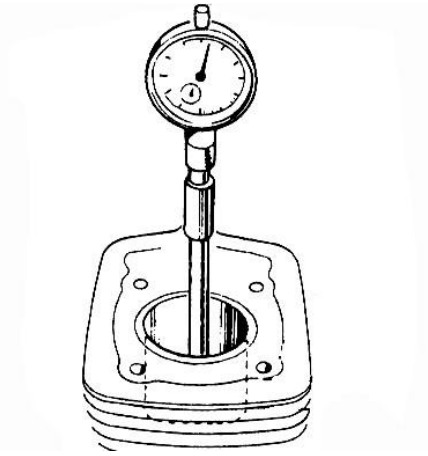
The disassembly steps of the cylinder are as follows：

1、Remove the chain guide plate and remove the cylinder bloc

2、Scrape the remaining gaskets on the surface of the cylinder with a scraper

Note：If the gasket is immersed in gasoline, it is easy to disassemble. When doing this work, avoid damaging the cylinder contact surface.

Inspection of cylinder



The cylinder inspection steps are as follows:

1. Check whether the cylinder is worn or damaged;

2. Measure the inner diameter of the cylinder. When measuring, three positions should be taken, namely the top, middle and bottom of the piston stroke. When measuring, two directions at right angles to each other should be measured.

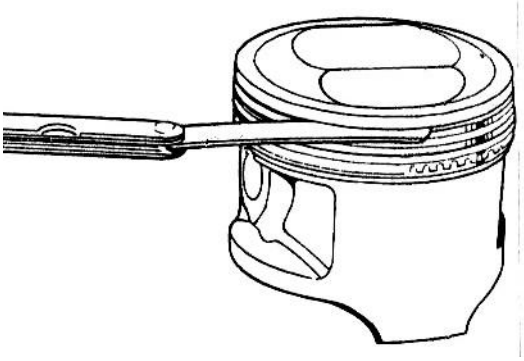
Repair limit value: φ77.018mm

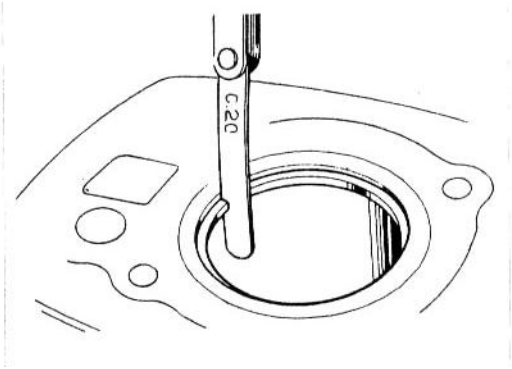
Disassembly of the piston

The steps for removing the piston are as follows:
1. Use needle-nose pliers to remove the piston pin retaining ring;
2. Remove the piston pin and piston.

Note: Do not drop the retaining ring into the crankcase when removing the piston pin retaining ring.

Inspection of piston and piston ring





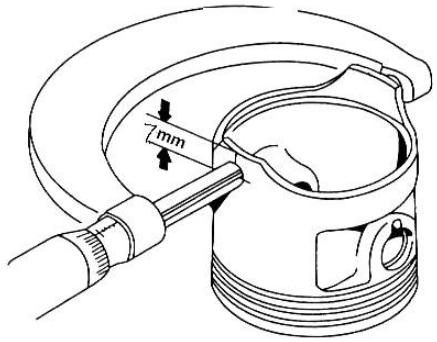
The inspection steps for pistons and piston rings are as follows:
1. Remove the piston ring;
Note: When disassembling, do not damage the piston ring.
2. Measure the gap between the piston ring and the groove of the piston ring, the maintenance limit value: the first ring: 0.08 mm; the second ring: 0.08 mm; the oil ring: 0.08 mm
3. Check whether the piston is worn or cracked, and whether the piston ring groove is worn.
4. Insert the piston ring into the cylinder, and then measure the end clearance.
Repair limit value:
The first ring: 0.5mm

Second ring：0.5mm
Oil ring：1.4 mm

5、Measure the inner diameter of the piston pin hole.

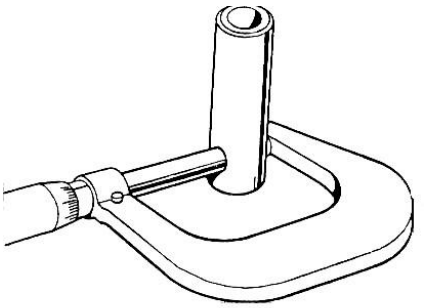
Repair limit value: φ16.015 mm

6、Measure the outer diameter at a height of 7 mm from the piston skirt
Repair limit value: φ76.94 mm



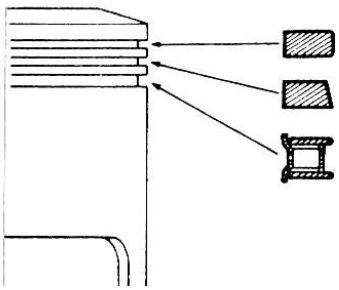
7、Calculate the gap between the cylinder and the piston.
Repair limit value: 0.1mm

8、Measure the outer diameter of the piston pin
Service limit: 15.99 mm

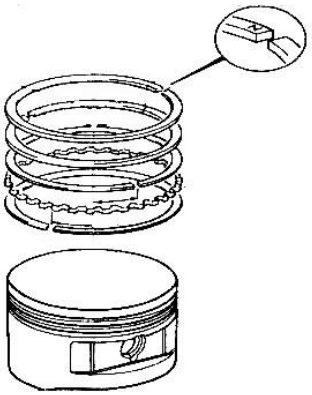


9、Calculate the gap between the piston and the piston pin
Repair limit value: 0.025 mm

Installation of piston ring



The installation steps of the piston ring are as follows:
1. Thoroughly clean the groove of the piston ring;
2. Install the piston ring;
note:
①During installation, the piston and piston ring should be prevented from being damaged;
②When installing the piston ring, do not install the first ring and the second ring wrongly, and the marked side of



the first and second ring faces the top of the piston; after installation, the piston ring should rotate flexibly.

3. The gap between the rings in the oil ring should match the gap of the spacer ring; when installing the oil ring, the spacer ring should be installed first, and then the side guide rails should be installed.

Installation of piston

The installation steps of the piston are as follows:
Install the piston, piston pin and new piston pin retaining ring.
note:
1. When installing the piston, the side marked with "" should face the exhaust side of the engine;
2. The opening of the end gap of the piston pin retaining ring should face downwards;
3. If the piston pin retaining ring is severely deformed, it must be replaced with a new one;
4. Do not allow the piston pin retaining ring to fall into the crankcase.

Installation of cylinder block

The installation steps of the cylinder block are as follows:
1. Install cylinder block positioning pins and new cylinder block gaskets;
2. Apply a layer of engine oil evenly on the surface of the cylinder block, piston and piston ring;
3. After staggering the openings between the piston rings by 120°, gently assemble the cylinder block in place;
4. Assemble the chain guide plate in place.
Note: When installing the cylinder block, avoid damaging the piston ring.

Troubleshooting

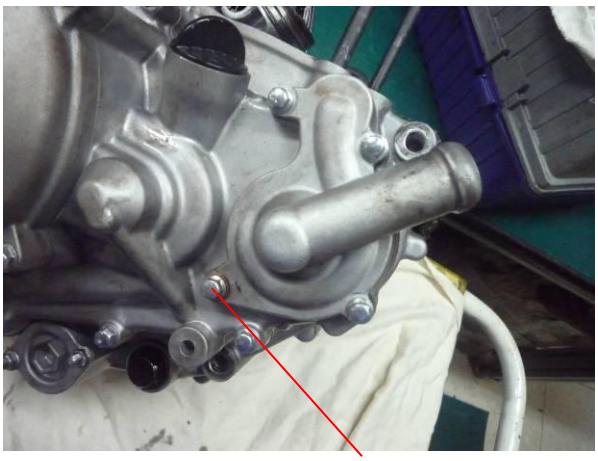
Performance	Possible Causes
Low or unstable compression	Cylinder or piston ring is worn
Exhaust excessive black smoke	Cylinders, pistons or piston rings are worn
	Incorrect installation of piston ring
	Scratches or scratches on the piston or cylinder wall
overheat	Excessive carbon deposits in the piston
There is knocking or abnormal noise	Pistons or cylinders are worn
	Excessive carbon deposits in the piston

Engine clutch, active gear, overrunning clutch, oil pump, shifting mechanism

Maintenance parameters of various parts

Item		standard value（mm）	Repair limit value（mm）
Repair limit value	Spring free length	32.3～33.3	32.3
	Free thickness of friction active plate	2.95～3.05	2.85
	Clutch driven plate flatness	0.1	0.14
	Clearance between clutch cover and friction plate	0.1～0.3	0.6
Oil pump	Radial clearance between outer rotor and inner rotor	0.06～0.15	/
	End gap between rotor assembly and cover plate	0.04～0.1	/

Disassembly of water pump impeller



The disassembly steps of the pump impeller are as follows:
1. Remove the drain bolt of the water pump cover;
2. Drain the cooling water in the engine from the water drain bolt;
Remove the water pump cover and impeller when there is no water flowing out of the drain bolt.

Removal of the right crankcase cover

The steps for removing the right crankcase cover are as follows:
1. Drain the oil first (remove the oil filter cover on the left and right sides, take out the oil filter combination in the box, and wait for the oil in the box to run out);
Remove the right cover connecting screw and remove the right crankcase cover.

Disassembly of water pump shaft, water seal assembly and oil seal

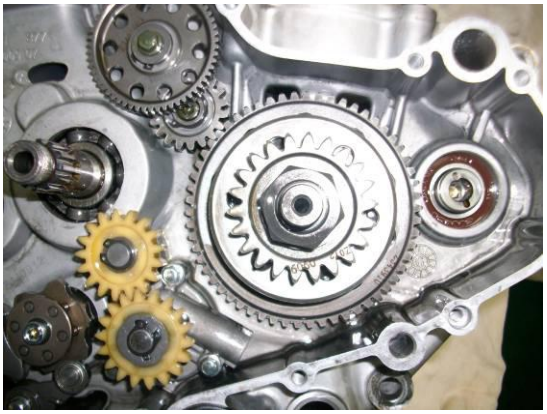
The steps for removing the water pump shaft, water seal assembly, and oil seal are as follows:
1. First remove the GB/T893.1 retaining ring 22 in the retaining ring groove of the water pump shaft hole;
2. Remove the water pump shaft;
3. Remove the water seal assembly and oil seal from the shaft hole of the water pump.

Disassembly of the clutch

The disassembly steps of the clutch are as

follows:
1. Remove the spring and bolts of the clutch pressure plate, and note that when the clutch pressure plate bolts are loosened, they should be loosened in a crosswise manner twice or three times;
2. Remove the clutch pressure plate, clutch lever and friction plate;
3. Remove the clutch lock nut and gasket;
4. Remove the clutch center sleeve, outer cover, clutch shaft sleeve, and gasket;
5. Take out the clutch push rod from the center hole of the main shaft.

Disassembly of driving gear, overrunning clutch and starting gear



The disassembly steps of driving gear, overrunning clutch, and starting gear are as follows:
1. Remove the drive gear lock nut and lock nut washer;
2. Remove the super-off and start gear.

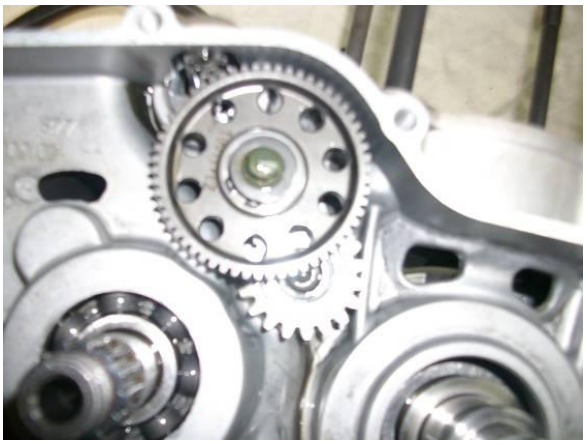
Note: When disassembling the starter gear assembly, remove the starter gear washer together with the starter gear, and keep the washer in a safe place.

Disassembly of the right pump

The disassembly steps of the right pump are as follows:
1. Remove the oil pump bridge gear and the retaining ring of the oil pump gear combination;
2. Remove the washer of the oil pump bridge gear, the oil pump bridge gear, and the oil pump gear assembly;
3. Remove the three GB/T16674 small plate bolts M5×18 from the right oil pump cover plate; remove the oil pump cover plate assembly and the oil pump inner and outer rotor assembly.
Note: There are 1 oil pump bridge tooth washers on the top and bottom of the oil pump

bridge tooth. The removed retaining ring, washer and oil pump pin should be kept properly to avoid loss.

Disassembly of double gear



The disassembly steps of the double gear are as follows:
1. Remove the GB/T894.4 retaining ring 15 on the retaining ring groove of the double gear shaft;
2. Remove the double gear washer;
Remove the double gear.

Disassembly of starter motor

The disassembly steps of the starter motor are as follows:
1. Remove the fastening screws of the starting motor;
Remove the starter motor.

Disassembly of gearshift mechanism

The disassembly steps of the shift mechanism are as follows:
1. Remove the five-star plate fastening screw GB/T70.1 M6×35;
2. Remove the five-star board;
3. Remove the shift arm components;
4. Remove the combination fastening screws of the positioning plate;
5. Remove the positioning plate gasket and positioning plate combination.

Inspection of the right crankcase cover

The inspection steps of the right crankcase cover are as follows:
1. Check whether the crankshaft oil seal of the right crankcase cover is damaged. If the oil seal is found to be broken, it needs to be replaced with a new one;
Note: To replace the oil seal is required to confirm whether the state of the oil seal is correct. The end face of the NC250 crankshaft oil seal should be marked with "TCV"; the marked surface should face outwards during assembly.
2. Check whether the starting shaft oil seal is damaged. If the oil seal is found to be broken, it needs to be replaced with a new one.

Inspection of water pump shaft, water pump impeller, water seal assembly, oil seal

The inspection steps of the water pump shaft, water pump impeller, water seal assembly, and oil seal are as follows:
1. Check whether there are cracks in the impeller of the water pump and whether the inserts of the impeller of the water pump are loose. If the above phenomenon occurs, replace the impeller with a new one;
2. Check whether the water seal components and oil seals are broken, check whether the water pump shaft is abnormally worn or bent. If so, replace the water seal components, oil seals and new water pump shafts.
Note: When replacing the water pump shaft, water pump impeller, water seal assembly, and oil seal, apply a proper amount of oil in the NC250 water pump shaft hole, press the NC250 water pump shaft oil seal in place with a special tool, and the oil seal end surface mark outward; use a special tool to set the NC250 water pump shaft Press-fit the water seal in place, 0.5mm below the end face, and when assembling the water seal, the mark on the end face of the water seal faces inward; apply a proper amount of grease (grease model: MYSTIK JT-6) to the main lip of the water seal; insert the new water pump shaft Use special tooling to press fit in place; install GB/T893.1 retaining ring 22 into the retaining ring groove of the water pump shaft hole, and the assembled water pump shaft should rotate flexibly.

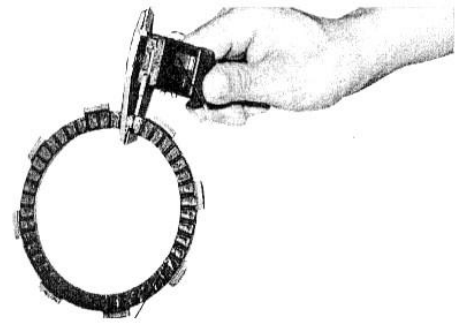
Inspection of start shaft

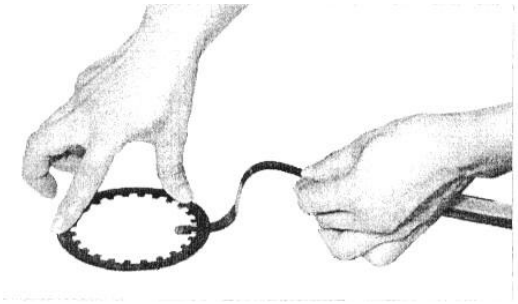
Check content of starting shaft: Check whether the gear of starting shaft is worn.

Inspection of clutch spring

When checking the clutch spring:
Measure the free length of the clutch spring.
Repair limit value: 32.3mm.

Inspection of clutch friction plate





The inspection steps of the clutch friction plate are as follows:

1. Check the surface of the friction plate. If the clutch friction plate has scratches or discoloration marks, it should be replaced;
2. Measure the thickness of each clutch friction plate; maintenance limit value: 2.85mm
3. Check whether there is any distortion on the surface of the clutch driven plate, and check it with a feeler gauge; the maintenance limit value: 0.14 mm
4.Check the gap between the clutch cover and the friction plate. Service limit: 0.6 mm

Inspection of clutch cover

The inspection content of the clutch cover: check whether the tooth grooves on the cover drum are notched or scarred due to the friction of the clutch disc. If it is serious, the cover needs to be replaced.

Inspection of driving gear

The inspection content of the driving gear: Check whether the driving gear is worn and damaged. If the phenomenon of wear and damage is serious, it needs to be replaced with a new driving gear.

Inspection of overrunning clutch

Overrunning clutch wedge

Overrunning clutch cover

The inspection steps of the overrunning clutch are as follows:

1. Remove the clamp ring on the end face of the overrunning clutch;

Check whether the wedge of the overrunning clutch is worn or damaged.

Inspection of start big gear

The inspection content of the starting gear: Check whether the starting gear is worn or damaged.

Inspection of the right oil pump

Right oil pump cover

Right oil pump rotor combination

The inspection steps of the right body oil pump are as follows:

1. Check whether the internal and external rotors of the oil pump are worn and damaged. If the signs of wear and damage are serious, replace the new oil pump rotor assembly;
2. Check whether the oil pump bridge gear and oil pump gear combination is broken, if there is, it needs to be replaced with a new oil pump bridge gear and oil pump gear combination;
3. Check whether the right oil pump cover is worn or damaged. If so, you need to replace it with a new right oil pump cover.

Inspection of start motor and double gear

Check the starting motor and double gear: check whether the cogging of the starting motor is damaged, and check whether the double gear is worn or damaged.

Inspection of shifting mechanism

The inspection content of the gear shifting mechanism: check whether the rollers of the positioning plate are worn and whether the rollers rotate flexibly.

Assembly of start shaft

The method of assembling the starting shaft: install the starting shaft into the corresponding starting shaft hole on the right body.

Assembly of double gear

The assembly steps of the double gear are as follows:
1. Install the double gear on the double gear shaft of the right body;
2. Install the double gear washer on the end face of the double gear;
3. Install the GB/T894.1 retaining ring 15 to the retaining ring groove on the double gear shaft.

Assembly of shift mechanism

The assembly steps of the shift mechanism are as follows:
1. Install the positioning plate assembly on the right body and fasten it;
2. Install the five-star plate on the speed change drum, pay attention to the notch to align the speed change drum pin, install the fastening screw and tighten;
3. Install the gear shift arm. After the gear shift arm is assembled, first check whether the gear shift is correct, and then continue to install the machine after the gear shift is correct.

Assembly of the right oil pump

The assembly steps of the right oil pump are as follows:
1. First install the oil pump pin into the pin hole on the oil pump shaft;
2. Install the rotor assembly into the hole of the right box;
3. Fasten the oil pump cover plate assembly to the oil pump rotor with 3 GB/T16674 small plate screws M5×18;

Note: When installing the oil pump rotor, the marked surfaces of the inner and outer rotors should face the same direction; the oil pump cover bolt tightening torque: 7-9 N•m; after the cover is assembled, ensure that the oil pump shaft rotates flexibly.
4. Install the oil pump gear assembly on the oil pump shaft and install the GB/T894.1 retaining ring 10 into the clamp ring groove on the oil pump shaft;
5. Install the oil pump bridge gear washer on the oil pump bridge gear shaft, and install the oil pump bridge gear on the oil pump bridge gear shaft;
6. Install the oil pump bridge gear washer on the oil pump bridge gear;
7. Install GB/T894.1 retaining ring 10 on the retaining ring groove of the oil pump gear shaft.

Assembly of overrunning clutch

The method of assembling the overrunning clutch: just install the wedge on the outer cover of the overrunning clutch.
Note: Do not install the wedge upside down when assembling.

Installation of start gear and overrunning clutch

The installation steps of starting gear and overrunning clutch are as follows:
1. Install the large starting gear washer on the right crank;
2. Install the large starting gear and the overrunning clutch on the right crank.
Note: Before installing the starting gear, apply an even layer of grease on the inner hole of the starting gear.

Installation of driving gear

The installation steps of the driving gear are as follows:
1. Install the active gear on the right crank;
2. Install the driving gear lock nut washer on the driving gear;
3. Apply 3 to 4 thread tightening glue on the active gear lock nut, install it on the right crank and tighten it.
Note: The tightening torque of the active tooth lock nut: 150～160N·m.

Installation of the clutch

The installation steps of the clutch are as follows:
1. Install the clutch cover gasket, clutch shaft sleeve, clutch cover and clutch center sleeve gasket to the main shaft;
Note: Apply grease evenly to the inner ring of the clutch sleeve.
2. First install the clutch center sleeve and the clutch lock nut washer on the main shaft, apply 3 to 4 thread fastening glue to the clutch lock nut, install it on the main shaft and tighten it;
Note: The tightening torque of the clutch lock nut: 80～90N·m.
3. First install the clutch friction plate into the clutch center sleeve and the clutch cover;
4. Install the clutch push rod into the center hole of the main shaft;
5. Install the clutch lever into the center hole of the main shaft;
6. Install the thrust bearing and tie rod washer on the tie rod;
7. Install the clutch pressure plate, clutch pressure plate spring, and pressure plate screw, and tighten the pressure plate screw with a torque wrench. Tightening torque: 8-10N·m.

Installation of starter motor

Starter motor assembly method: After evenly spreading oil on the cogging end of the starter motor, assemble the starter motor in place, and fasten it with two GB/T16674 small plate bolts M6×25. The tightening torque is 11～13N·m.

Installation of the right crankcase cover

The installation steps of the right crankcase cover are as follows:
1. Remove the old right crankcase gasket, install the new gasket, assemble the right crankcase cover in place and tighten it with 10 GB/T16674 small plate bolts M6×30, tightening torque: 11～13N·m
2. Install the water pump impeller on the water pump shaft and tighten it, tightening torque: 2～4N·m;
3. After installing the water pump cover gasket, assemble the water pump cover in place and fasten it with 3 GB/T16674 small plate bolts M6×35 and 1 GB/T16674 small plate bolt M6×20.

Troubleshooting

Performance	Possible Causes
Clutch slips during acceleration	free stroke is not enough
	The disc is worn

	clutch plate bent
Too much pressure on the handle	The clutch cable is sticky, damaged or dirty
	Damaged lifting mechanism
After releasing the clutch, the vehicle will move slowly	The free stroke is too large
	clutch plate bent
Clutch operation is difficult	The clutch cover chute has burrs
Oil pressure is too low	The oil pump is faulty
	Broken oil pump drive gear
The shift pedal cannot rebound	Broken return spring
	Interference between transmission shaft and crankcase cover
Difficult shifting	The stop plate is bent or worn
	Incorrect clutch adjustment
Shift gear skipping	The stop arm spring is broken or has insufficient elasticity
Cylinder temperature is too high	The pump impeller is faulty
Electric start is difficult	The starting motor is faulty

Engine magneto and balance main and driven gears

Disassembly of the left crankcase cover

The removal steps of the left crankcase cover are as follows:
1. Remove the fastening bolts of the left front cover;
Remove the left crankcase cover.

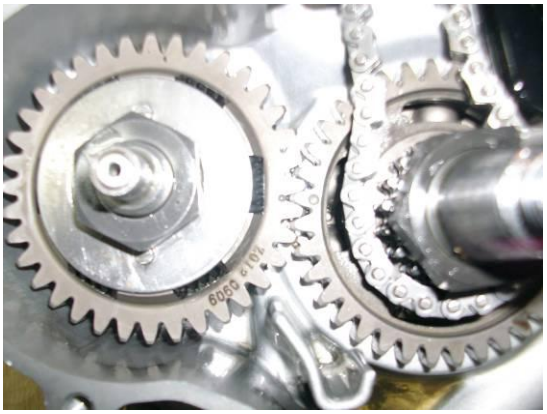
Disassembly of the magneto stator

The disassembly steps of the magneto stator are as follows:
1. Remove the 2 GB/T818 screws M5×10 (color zinc) ML35-HIPER fastening screws for sensing;
2. Remove the 2 GB/T70.1 screws M5×30 fastening screws of the stator coil; 3. Remove the magneto stator assembly from the left crankcase cover.

Disassembly of the magneto rotor

The disassembly steps of the magneto rotor are as follows:
1. Remove the lock nut of the magneto rotor;
2. Remove the magneto rotor with special tools.
Note: When disassembling the magneto rotor, only special tools can be used to remove it, and it is not allowed to knock the magneto rotor; the magneto rotor is accidentally impacted during the disassembly and assembly process. If the magneto rotor falls to the ground or is struck by a foreign object, you should Replace the magneto rotor with a new one.

Disassembly of balance main and driven gears



The disassembly steps of balancing main and driven gears are as follows:
1. Remove the timing chain, remove the chain tensioning plate, and then remove the balance active tooth lock nut and active tooth lock nut washers respectively;
2. Remove the crankshaft timing driving sprocket and balance driving gear;
3. Remove the balance driven tooth lock nut and the CB125 clutch disc washer;
4. Remove the balance gear driven wheel,

NC250 crankshaft sleeve, and balance shaft key.

Removal of the left body oil pump

The disassembly steps of the left body oil pump are as follows:
1. Remove the three GB/T16674 small plate bolts M5×10 that fasten the cover plate of the left oil pump;
1. Remove the cover plate of the oil pump;
2. Remove the rotor assembly of the left oil pump.
Note: The oil pump pin should be kept in a safe place so as not to be lost

Inspection of left crankcase cover

The inspection content of the left crankcase cover: check whether the balance shaft oil seal of the left crankcase cover is damaged, if any, the balance shaft oil seal must be replaced.

Inspection of magneto stator and rotor

The inspection steps of magneto stator and rotor are as follows:
1. Check whether there are cracks or breakages in the magnetic tile of the magneto stator. If so, replace the magneto rotor with a new one.
2. Check whether the magneto rotor is worn or damaged, if so, it needs to be replaced with a new magneto rotor

Inspection of balance main and driven gears

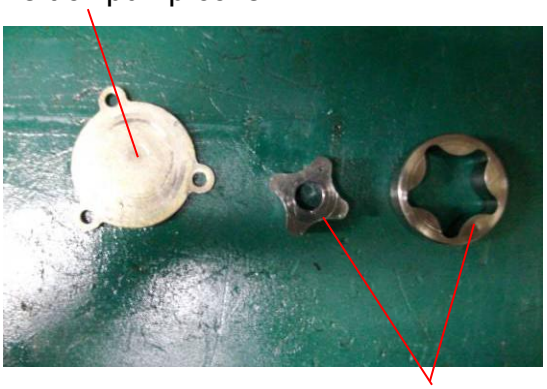
Check content of balance main and driven gears: check whether the balance main and driven gears are worn or damaged.

Inspection of the left oil pump

The inspection steps of the left body oil pump are as follows:
1. Check the left body oil pump rotor assembly for wear and damage;
2. Check whether the cover plate of the left body oil pump is worn or damaged.

Installation of the left oil pump

Left oil pump cover



Left oil pump rotor combination

The installation steps of the left oil pump are as follows:

1. Install the left oil pump into the corresponding hole of the left body;
2. Fasten the left cover of the oil pump with three GB/T16674 small plate bolts M5×10.

Note: When installing the oil pump rotor, the marked surfaces of the inner and outer rotors should face the same direction; the left oil pump cover bolt tightening torque: 7-9N·m; after tightening, check whether the oil pump shaft rotates flexibly.

Installation of balance main and driven gears

The installation steps for balance main and driven gears are as follows:

1. Sleeve the NC250 crankshaft onto the balance shaft;
2. Install the NC250 balance shaft flat key 4×4×13 into the keyway of the balance shaft;
3. Install the balance shaft driven gear on the balance shaft;
4. The balance active gear is installed on the left crank;
5. Install the NC250 crankshaft timing sprocket to the left crank;

Note: When installing the balancing master and driven gear, the timing marks of the balancing master and driven gear should be aligned, that is, the teeth with timing marks on the balancing master and driven gear must mesh with each other.

6. Put the balance driving gear nut lock washer and CB125 clutch disc washer on the crankshaft timing driving sprocket and balance shaft driven gear respectively, and smear the balance shaft lock nut M24×1 clutch lock nut M16×1 After 3-4 thread tightening glue, install it on the crankshaft and balance shaft and tighten them.

Note: Balance the tightening torque of the main and driven gear lock nuts: 80～90N·m.

Installation of magneto rotor

The installation steps of the magneto rotor are as follows:

1. Install the magneto rotor on the left crank;

Apply 3 to 4 thread fastening glue to the IB175-FC magneto nut, then install it on the left crank and tighten it.

Installation of magneto stator

Installation method of the magneto stator: fasten the magneto stator assembly to the left crankcase cover with 2 GB/T818 M5×10 and 2 GB/T70.1 screws M5×30, tightening torque: 7～9N· m.

Installation of the left crankcase cover

The installation steps of the left crankcase cover are as follows:
1. Remove the old gasket and install the new gasket;
2. Assemble the left crankcase cover in place and fasten it with 8 GB/T16674 small plate bolts M6×35, tightening torque: 11～13 N·m.

Engine crankcase, crankshaft, transmission, balance shaft

Specifications of parts

Item			standard value（mm）	Repair limit value（mm）
Shift fork	Inner diameter of countershaft right fork/Inner diameter of countershaft left fork		φ14.016～φ14.043	φ14.045
	Spindle fork inner diameter		φ12.016～φ12.043	φ12.045
	Claw thickness		4.8～4.9	4.8
Shift fork shaft	Outer diameter of main shaft fork shaft		φ11.973～φ12	φ11.95
	Outer diameter of countershaft fork shaft		φ13.973～φ14	φ13.95
	Cylindricity		0.006	/
Crank shaft	Inner diameter of connecting rod small head		φ16.015～φ16.025	φ16.04
	Large end side clearance of connecting rod	Axial	0.15～0.4	0.6
		Radial	0.008～0.016	0.02
Balance shaft	Shaft diameter		φ19.98～φ19.993	φ19.96

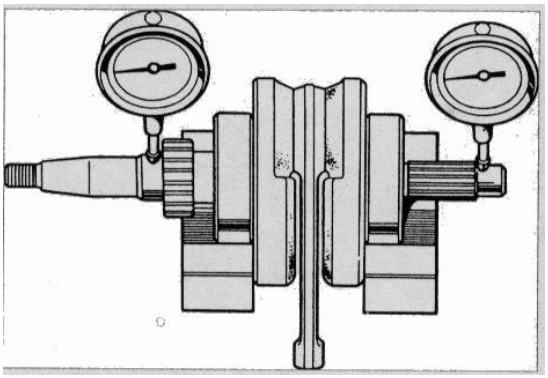
Disassembly of the crankcase

The decomposition steps of the crankcase are as follows:
1. Place the left crankcase of the engine upward;
2. Remove 8 GB/T16674 small plate bolts M6×65 and 5 GB/T16674 small plate bolts M6×45 fastening screws;
3. Separate the left crankcase from the right crankcase and remove the 2 positioning pins.

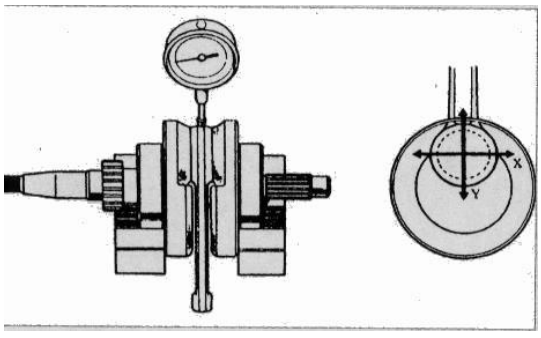
Removal of crankshaft, balance shaft, main and counter shaft

How to disassemble the crankshaft, balance shaft, main and counter shafts: Take out the crankshaft assembly, balance shaft, shift fork shaft, shift fork, shift drum, main and counter shaft components from the box.
Note: When taking the main and counter shaft components, make sure that no parts are missing

Inspection of crankshaft

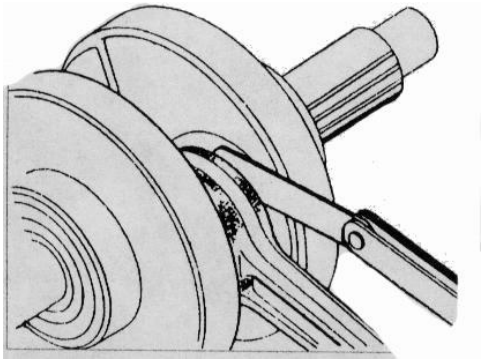


The inspection steps of the crankshaft are as follows:
1 Put the crankshaft on the V-shaped iron;
2. Use a dial indicator to measure the radial clearance of the crankshaft shaft diameter;
The actual radial clearance of the crankshaft is 1/2 of the total reading value (TIR)
Repair limit value: 0.1 mm;

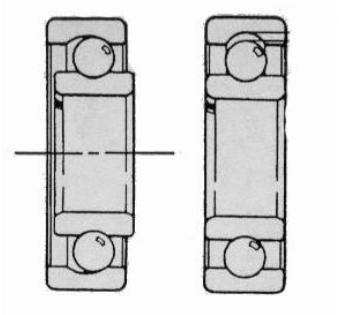


3. Measure the radial gap between two points in the X and Y directions of the big end of the connecting rod;
Repair limit value: 0.02 mm

4. Use a thickness gauge to measure the side clearance of the big end of the connecting rod.
Service limit: 0.6 mm



Inspection of left and right box bearings

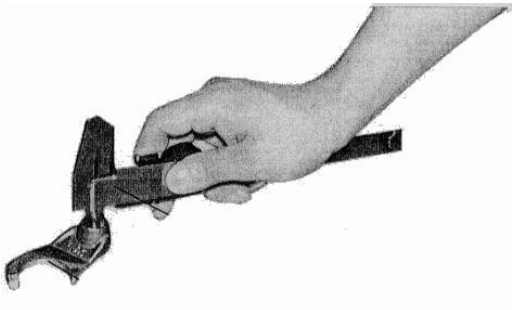


The inspection steps of the left and right box bearings are as follows:

1. Check whether the rotation of all the bearings of the left and right boxes is flexible. If the rotation is not flexible or there is a phenomenon of card issuance, the bearings of the same model should be replaced;

2. Remove the crankshaft bearings of the left and right boxes and check their radial jumps and end jumps. If noise or large radial jumps and end jumps are found, new crankshaft bearings should be replaced.

Inspection of shift fork, shift fork shaft, and shift drum



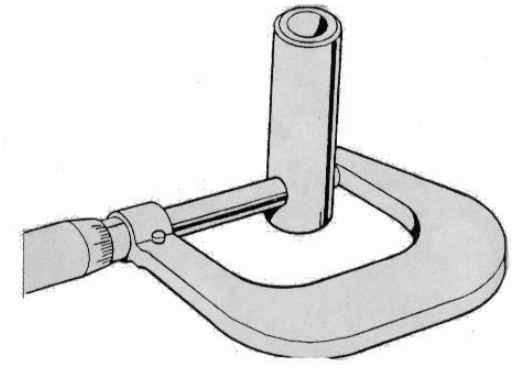
The inspection steps of shift fork, shift fork shaft, and shift drum are as follows:

1. Check whether the gear shift forks are worn, bent or any other faults, and measure the inner diameter of the gear shift forks;

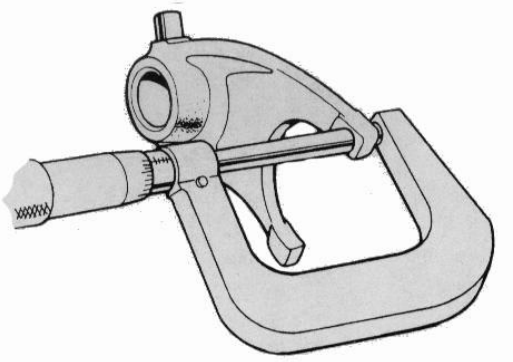
Maintenance limit value of spindle fork: φ12.045 mm

Maintenance limit value of the countershaft fork: φ14.045 mm

2. Check whether the main shaft and counter shaft are worn, damaged or bent, and measure the outer diameter;



Maintenance limit value of spindle fork shaft: φ11.95 mm
Maintenance limit value of countershaft fork shaft: φ13.95 mm



3. Measure the thickness of the fork claw;
Service limit: 4.8 mm

4. Check whether the surface and groove of the variable speed drum are worn or damaged.

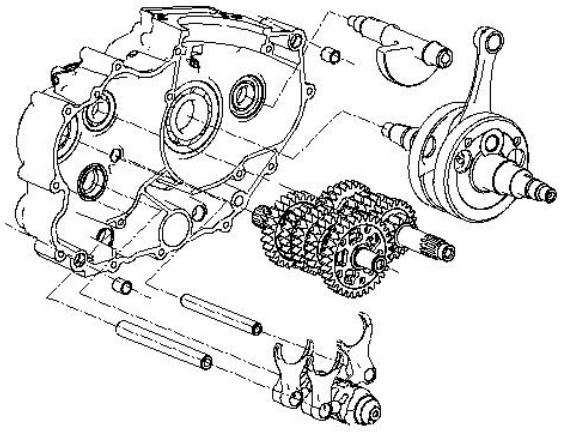
Inspection of main and counter shaft components

Inspection content of main and counter shaft components:
Check whether the gears of the main and countershaft components have excessive or abnormal wear, and check whether the clamp rings between the gears are deformed or fall off.

Inspection of gasoline filter components and oil filter

The inspection steps of gasoline filter components and oil filter are as follows:
1. Check the cleanliness of the oil filter parts and oil filter screens, and rinse the oil filter parts and oil filter screens with poor cleanliness with clean gasoline;
2. Check whether the oil filter components and oil filter are damaged. If they are damaged, replace the oil filter components and oil filter with new ones.

Assembly of transmission, crankshaft and balance shaft



The assembly steps of transmission, crankshaft and balance shaft are as follows:

1. Install the crankshaft and balance shaft into the corresponding holes on the left body;
2. Install the main and auxiliary shaft components into the corresponding holes on the left body, and then assemble the shift fork to the corresponding position;

Note: The shift fork marked --R is installed on the side of the countershaft on the right side; the shift fork marked -L is installed on the side of the countershaft on the left body; the shift fork labeled --C is installed on the main shaft.

3. Install the shifting drum into the corresponding hole on the left body, then fit the other end of the shift fork into the corresponding groove of the shifting drum, and finally install the shifting fork shaft into the corresponding shifting fork.

Note: The long fork shaft passes through the fork marked -R and -L, and the short fork shaft passes through the fork marked -C.

Assembly of box and oil filter

Oil filter closed end

Oil filter open end

The assembly steps of the box and oil filter are as follows:

1. Spread a layer of sealant evenly on the joint surface of the right box body, and install the positioning pins into the corresponding holes of the left box body;
2. Fit the right box body to the left box body, and insert 5 GB/T16674 small plate bolts M6×45 and 8 GB/T16674 small plate bolts M6×65 through the corresponding bolt holes of the left body and tighten them ; Tightening torque: 11～13 N·m
3. Install the oil filter components into the corresponding holes of the box;

Note: When installing the oil filter, the open end

should face the left box.
4. Install the oil filter cover on the stud bolts, and then tighten with two GB/T6177.1 nuts M5, tightening torque: 7～9 N·m
5. Install the oil filter screen assembly into the corresponding holes of the left and right boxes, and then fasten it with the oil filter screen cover. Tightening torque: 11～13 N·m

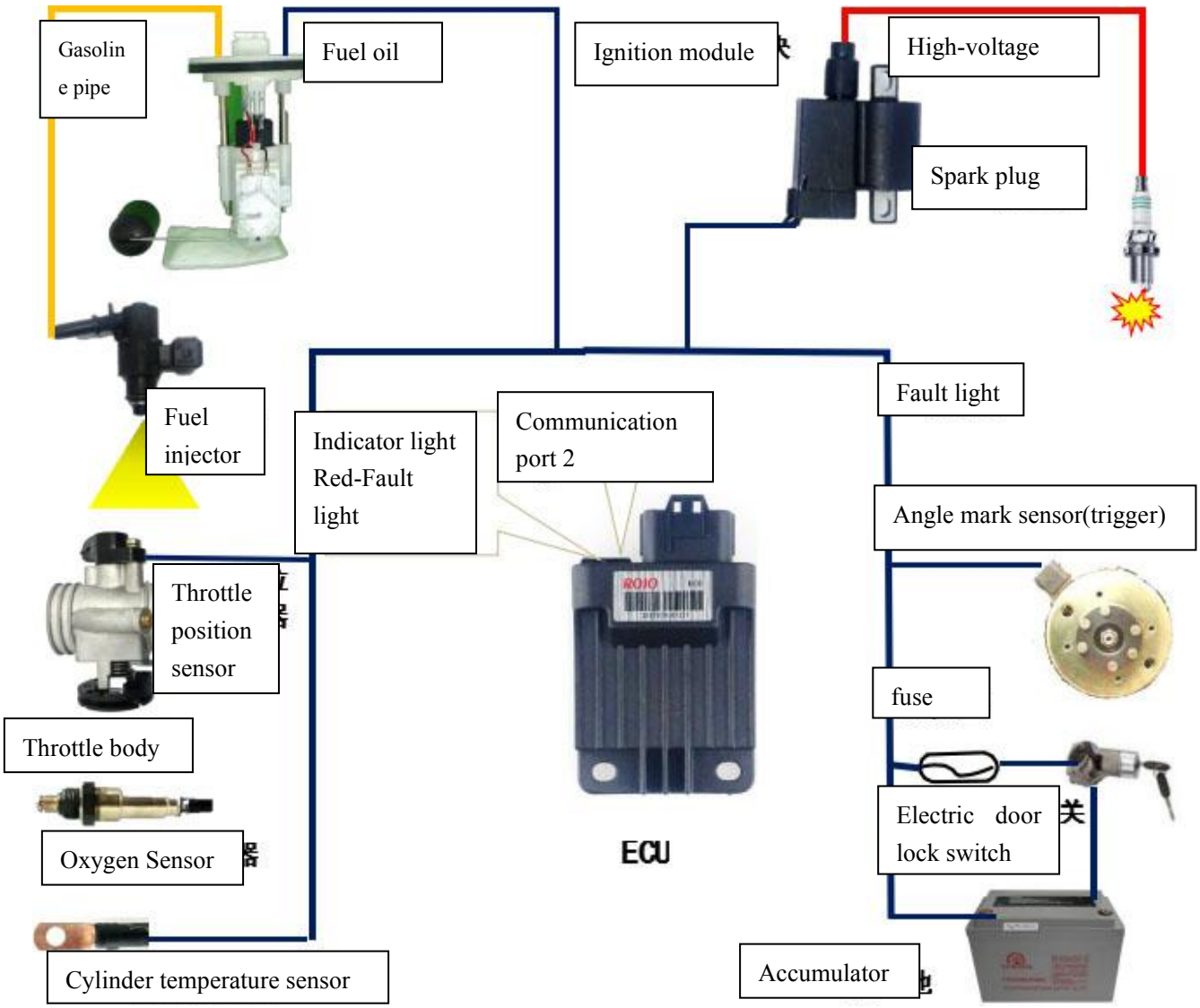
Troubleshooting

performance	possible reason
Difficult to shift	shift fork is bent
	The shift fork shaft is bent
Shift gear is noisy	Worn shift gear
	Worn spline shaft
Transmission skip	The gear pawl is worn out
	Bent or worn gear shift fork
	The shift fork shaft is bent
The crankshaft is noisy	The shift fork shaft is bent
	connecting rod is bent
	Crankshaft bearings are worn

Introduction to EFI system

Working principle of EFI system

Fuelinjector



Precautions for EFI system

1. Do not add too much oil, otherwise it will cause blue smoke, damage the oxygen sensor, and reduce the engine power;
2. It is necessary to remove the fuel pump and replace the filter bag at the head of the fuel pump every 5000 kilometers, otherwise it will cause the fuel pump to jam or the fuel injector to block;
3. Do not change the connection location of the ground wire at will, otherwise the EFI system will not work normally;
4. The connectors must be combined in place, and the power supply and grounding of the EFI system must be reliable to avoid loosening during use;
5. Bundling of wiring harness and tubing must comply with specifications to avoid pulling and friction during use;
6. To replace the high-voltage cap or spark plug, a resistance type must be used, and the resistance is between 4～8KΩ, otherwise it will interfere with the operation of the system;
7. The wiring harness should be as far away as possible from the high-voltage line, and the

EFI wiring harness must not be bundled with the high-voltage line, otherwise it will interfere with the system's operation;
8. The rectifier must use a qualified full-wave rectifier, otherwise the EFI system will not work stably

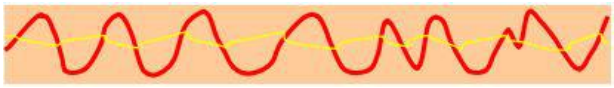
Maintenance of EFI system

The maintenance method of the EFI system is as follows:
1. Look at the fault light first: If the fault light is on, quickly pull the accelerator twice to enter the flash code mode, and read the fault through the flash code. You can also read the content of the fault through the mobile phone APP, computer communication interface, and general diagnostic tool.
2. If the fault light is not on, look at the ECU indicator:
When the motor is turned on, the green light of ECU does not flash, indicating that the magneto has no trigger signal. Check whether the gap between the trigger head and the boss of the magneto is too large;
Stop state, if the throttle is at the minimum and maximum opening, if the ECU green light is not on, it means that the throttle calibration is wrong and needs to be recalibrated;
In hot engine state, the green light of ECU is always off, indicating that the oxygen sensor is invalid or the plug is loose.
3. Still not ruled out, adopt fire test and oil test method:
Pull out the high-voltage line and start the motor to test the fire. If there is no spark or the spark is weak, the ignition module may be faulty;
Pull out the fuel injector and test the oil by driving the motor. If the fuel is not sprayed or the atomization is poor, it means that the fuel pump or the fuel injector is malfunctioning.
4. Still not ruled out, use substitution method or trial method
If the speed fluctuates, try to replace the spark plug (must use a spark plug with resistance);
If the warm-up engine returns to the throttle, the speed drops too slowly, and the warm-up engine return to the throttle is easy to stall, try to reduce the idling gas volume;
If the cold start is difficult and the throttle of the cold engine is likely to stall, try to increase the idle speed.
5. Still not ruled out, use mobile APP, or computer communication interface to analyze the cause of the fault through data flow analysis or fault code interpretation. If there is a jump in the speed, it may be that the magneto gap is too small and the speed signal is malformed.
6. Still not ruled out, request remote assistance.

Function introduction of EFI components

1. Oxygen sensor
When the mixture is rich, the output voltage is 0.7-0.9V;
When the mixed gas is lean, the

output voltage is 0-0.2V;
Under normal conditions, the output signal fluctuates between 0-0.9V, 1-3 times a second (ECU4 indicator light is on for rich, and off for lean).
Main failure modes:
The ceramic body is broken and there is no signal completely, mainly because the exhaust pipe is wading;
Carbon pollution, slow response, such as adding too much oil, blue smoke from exhaust.
elimination method:
Replace the oxygen sensor, or unplug the oxygen sensor, and perform an open-loop self-learning.



Note: Do not use cleaning agents to clean the oxygen sensor, and the exhaust pipe must not leak.
2. Ignition module

Integrated DC igniter and high voltage coil.
The main fault form: no spark, or weak spark.

Remedy: Replace the ignition module
3. Built-in gasoline pump

Including rotor pump pump element, filter bag, regulator valve. Main failure modes:
The pump core is stuck and cannot be started without pressure;
The filter bag is clogged, the pressure drops, and it cannot go up at high speed.

elimination method:
Replace the filter bag;
Replace the pump core.

4. Injector
Used to inject fuel into the engine's intake port.

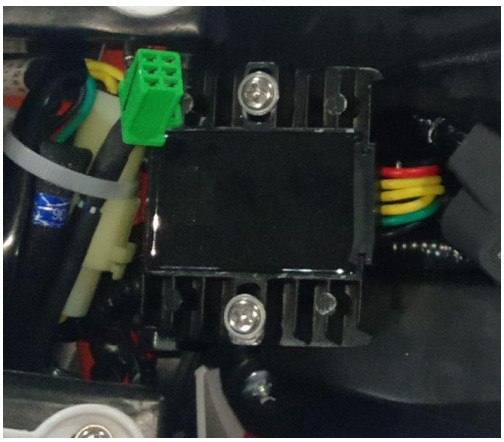
Main fault forms: Blockage and no fuel injection, or small fuel injection, which is generally caused by the use of unqualified fuel filters;

elimination method:
• Clean the inlet filter of the injector;
• Replace fuel injector
5. Cylinder head temperature sensor

Used to measure the temperature of the cylinder head. Main failure modes:
Loose plugs and broken wires will cause difficulty in cold start.
6. Throttle body

Used to adjust the intake air volume.
Main failure modes:
Idle air volume is not appropriate. If air volume is too small, cold start is difficult. If the air volume is too large, the engine will stop when the throttle is turned on, the idle speed is too high, and the speed drops too slowly;
Errors in throttle calibration will cause excessive idle speed or insufficient maximum opening power;
The throttle stick can't be returned, causing the idle speed to lose control.

7. Rectifier



It is used to ballast the alternating current generated by the magneto into direct current, with voltage limiting function.
Failure form: After failure, the charging voltage is too high and the fault light will alarm.

Note: It is necessary to use a qualified full-wave rectifier, otherwise it will cause unstable voltage of the EFI system, flameout, and high-speed power fluctuations.

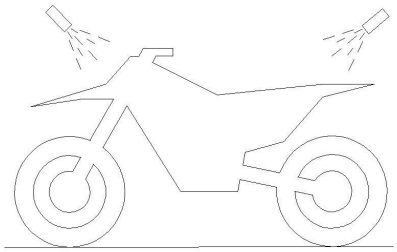
Motorcycle cleaning

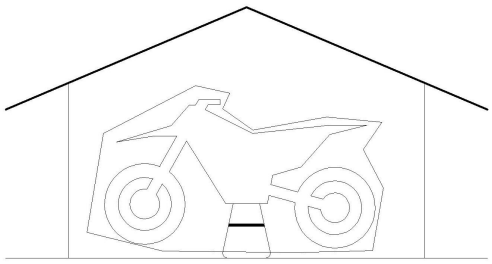
The cleaning of the vehicle is also an important part of the daily use and maintenance of the motorcycle. Frequent cleaning of your motorcycle can keep your car in a good state of motion and prolong its service life. You can clean your motorcycle through the following steps:
1. Cover the exhaust system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

Motorcycle storage

The preparation before the motorcycle is left unused for a long time



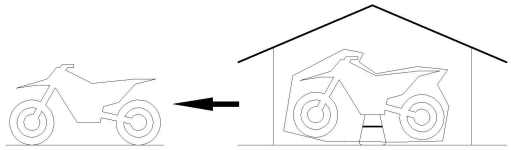


When you plan to store the vehicle and not use it for a long time, please follow the steps below:

1. Block the exhaust port of the muffler tube;
2. Take out the battery;
3. Thoroughly clean the motorcycle;
4. Wait for the motorcycle to dry naturally;
5. Empty the fuel tank (if not used for a long time, the gasoline will deteriorate);
6. Lubricate the chain;
7. Apply oil to all unpainted metal surfaces to avoid rust;
8. When storing the motorcycle, keep the motorcycle wheels in the air. If this condition cannot be achieved, you can use cardboard to pad under the motorcycle tires;
9. Cover the motorcycle to prevent dust and dirt from adhering.
10. Move the motorcycle into a dry room and place it.

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

The preparation before the motorcycle is put into use for a long time



After the motorcycle has been stored for a long time, please follow the steps below when it is put into use:

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. Install the battery;
5. Check the items that need to be checked before daily driving;
6. Routine lubrication for motorcycles.

Maintenance points

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
When the electric starter is pressed, the engine does not respond	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 batteryRemove the seat cushion and check the battery
Engine won't start	The motorcycle has been parked for a long time and the fuel has deteriorated	Exhaust old fuel and inject new fuel
	Dirt or wet spark plug	Clean or dry the spark plug, if necessary, replace the spark plug
	Engine water intake	First, drain the mixed fuel in the engine and remove the engine crankcase, 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 wipe the air filter element. 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 mixed fuel to the engine before starting the car. Because the moisture in the crankcase is difficult to completely evaporate, the new fuel still contains a small amount of moisture. Therefore, after the engine has flooded and the car has run for 100 kilometers, the fuel should be changed again, and then again within 500 kilometers. After three times, the water in the carburetor is almost gone. 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 on the mouth of the oil dipstick for a few minutes. Warning: For safety reasons, the spark plug should be wrapped with dry cloth to avoid spark jumping.
	Incorrect mixing of air and fuel	Clean the fuel tank vent pipe, 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 antifreeze	Replenish antifreeze, check the cooling system for leaks

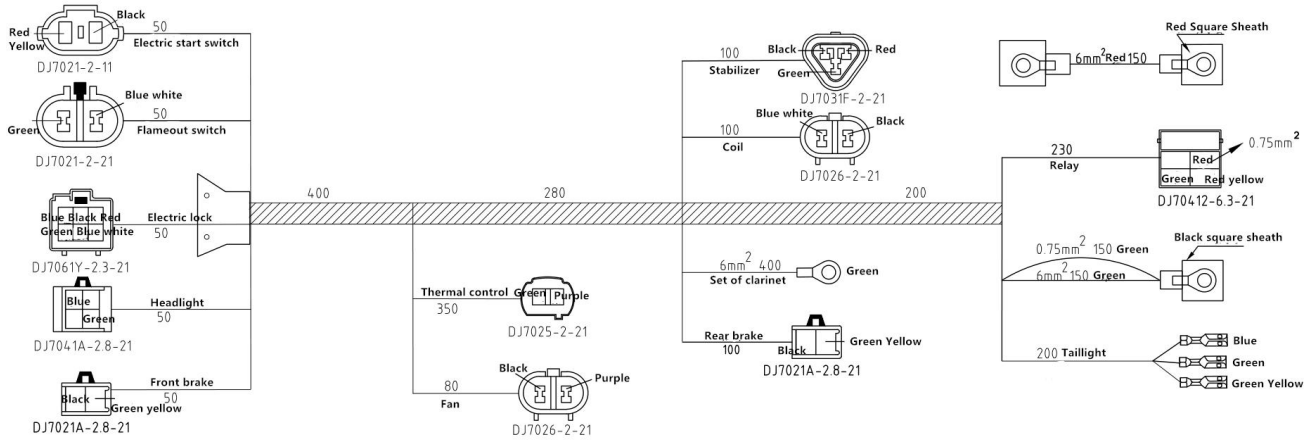
	Clogged water tank fins	Use low-pressure water to clean the fins of the water tank and replace them if necessary
Unbalanced engine operation	The spark plug is dirty, damaged or adjusted incorrectly	Remove the spark plug for cleaning, adjustment, and replacement if necessary
	Problem with spark plug cap	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 in good condition, 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

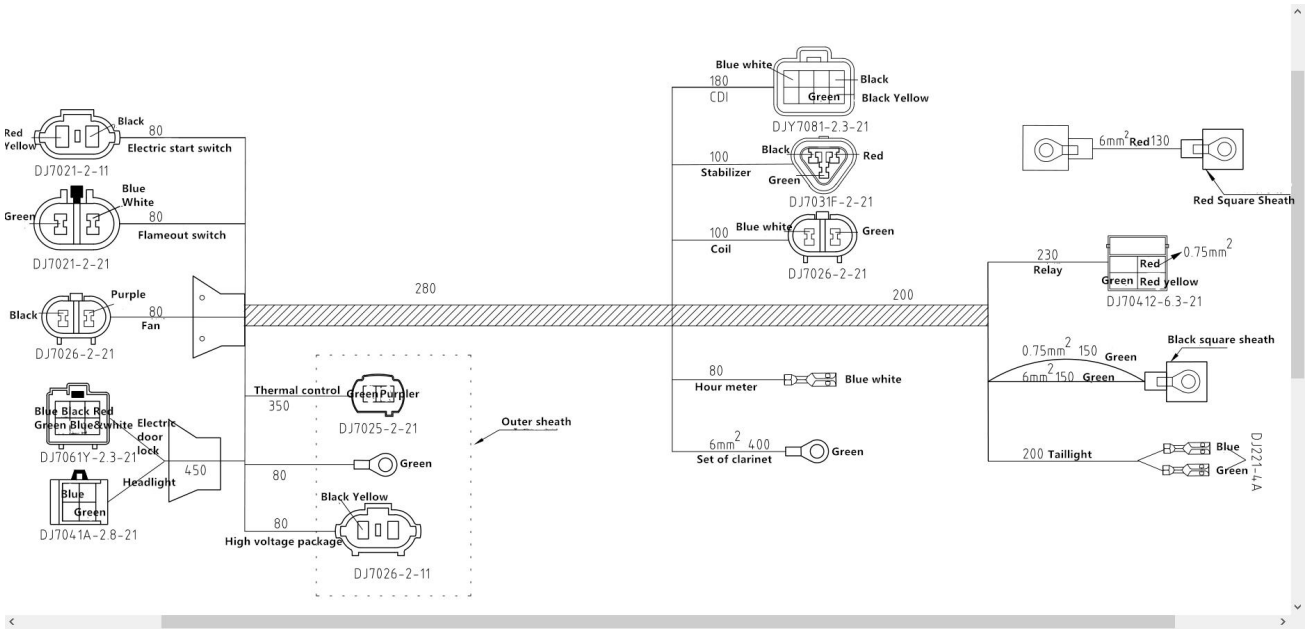
Gearbox gear does not mesh	Clutch abnormality	Contact KAYO Service Center
	The fork is bent or stuck	Check and adjust the fork
	Damaged gear lever	Replace the gear lever
	Damaged gear shift drum	Replace the shift drum
	Damaged ratchet device	Replace the ratchet device
	Loose or broken spring at the selector 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 bearings	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 **Note:** It is required to add the same oil
	Fork oil viscosity is too low	Change to fork oil with suitable viscosity
	Tire pressure is too low	Check whether the tires are

		leaking, if the tires are complete, inflate to the proper pressure
	Damping adjustment error	Re-adjust damping
There is abnormal noise when the motorcycle is driving	Improper chain adjustment	Re-adjust the chain tension
	Chain wear	Replace the chain and front and rear sprockets
	Wear of rear sprocket teeth	Replace the rear sprocket
	Insufficient chain lubrication	Follow the manual to lubricate the chain
	Off-center rear wheel	Check the spokes and adjust the spoke tension centrally if necessary
	The front fork spring is soft or broken	Replace the front fork spring
	Disc brake disc wear	Check the disc brake disc, if its thickness is less than the limit thickness, replace it
	Damaged cylinder head	Contact KAYO Service Center
	Brackets, nuts, 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
	steering shaft bent	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 Huayang Service Center if necessary
Brake failure	Disc brake disc wear	Replace the disc brake rotor
	Insufficient brake fluid	Replenish brake fluid
	Deteriorating brake fluid	Replace brake fluid

	Piston damage	Contact KAYO Service Center
	Brake pad wear	Check the brake pads, if the thickness is less than the minimum friction thickness, replace the brake pads

Appendix：




Red
Yellow
Black
80
Electric start switch
DJ7021-2-11
Green
Blue
White
80
Flameout switch
DJ7021-2-21
Black
Purple
80
Fan
DJ7026-2-21
280
Blue Black Red
Green Blue&White
Electric door lock
DJ7061Y-2.3-21
Blue
Green
Headlight
450
Thermal control
Green
Purple
350
DJ7025-2-21
Outer sheath
80
Green
Black Yellow
80
High voltage package
DJ7026-2-11
Blue white
180
CDI
Black
Green
Black Yellow
DJY7081-2.3-21
100
Stabilizer
Black
Red
Green
DJ7031F-2-21
100
Coil
Blue white
Green
DJ7026-2-21
200
80
Hour meter
Blue white
6mm²
400
Set of clarinet
Green
6mm² Red 130
Red Square Sheath
230
Relay
0.75mm²
Red
Green
Red yellow
DJ7041Z-6.3-21
0.75mm² 150
Green
6mm² 150
Green
Black square sheath
200 Taillight
Blue
Green
DJ221-4A