KAYO MOTO

T4

SERVICE MANUAL

W W W . K A Y OMOTO.US

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 differ slightly from production models.

Preface

This manual, it contains words like "Danger/Warning/Caution", please read the manual carefully and follow the instructions closely when performing inspections and repairs. KAYO strongly recommends that users have authorized dealers perform maintenance, service, inspections, and repairs. Please be sure to break in, check and maintain the motorcycle in accordance with this service manual, This will increase your motorcycle's lifespan.

Notification and Warning

This service manual is edited by KAYO
Manufacturer reserves the right to improve and update this manual, model's structure, and spare parts without notice.
The images in this manual may differ from the actual model.

This manual, contains words like "Danger/Warning/Caution", please read the manual carefully and follow the instructions closely when performing inspections and repairs, this will increase the reliability, performance and overall lifespan of the vehicle. The meanings of "DANGER", "WARNING" and "CAUTION" are as follows:

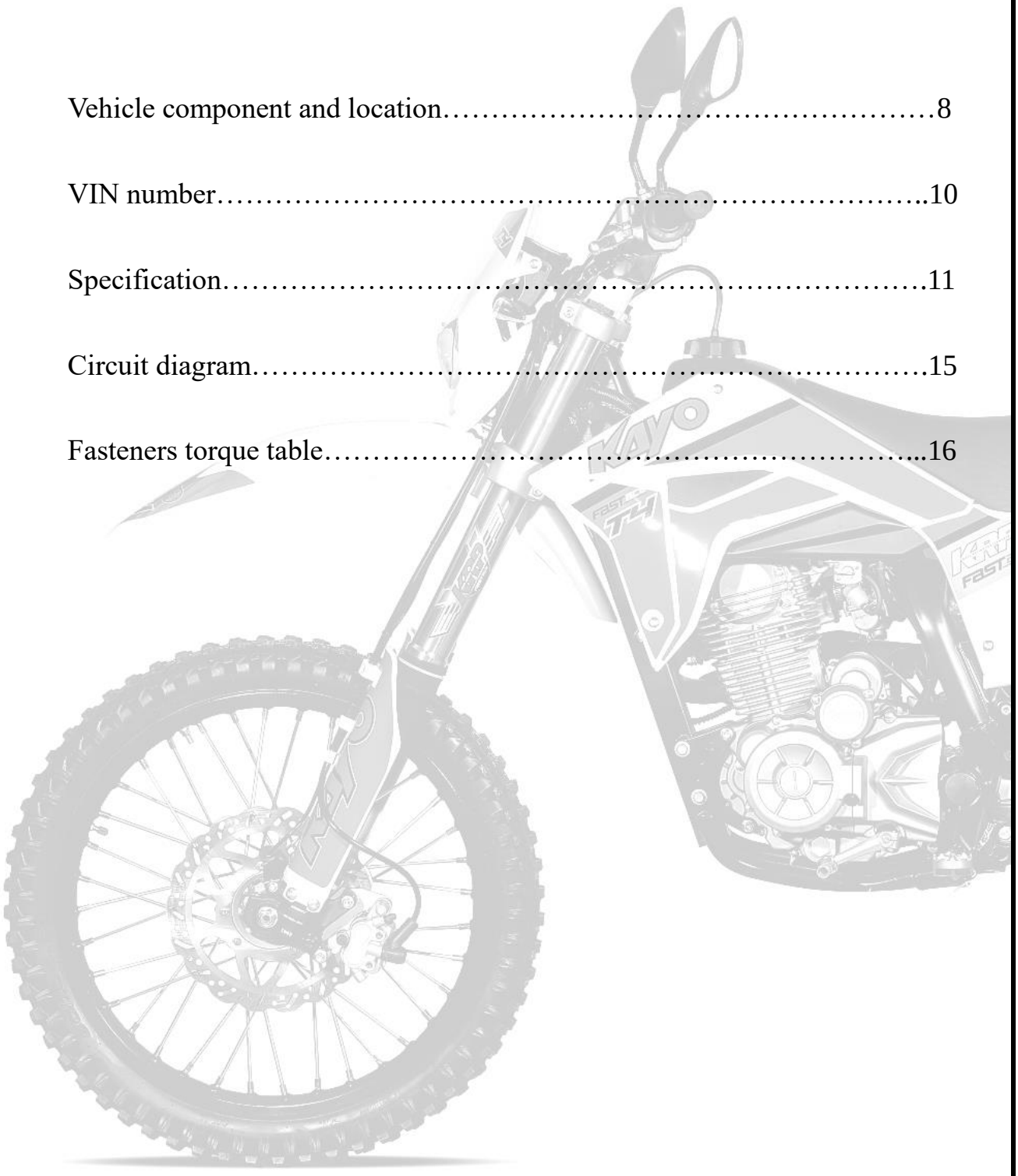
Danger: you should pay attention on the dangers that may cause severe injuries or death.

Warning: you should notice of the dangers that may cause injuries or vehicle damage.

Caution: you should focus on the dangers that may cause injury or vehicle lifespan decrease.

Content

Vehicle profile



Vehicle component and location

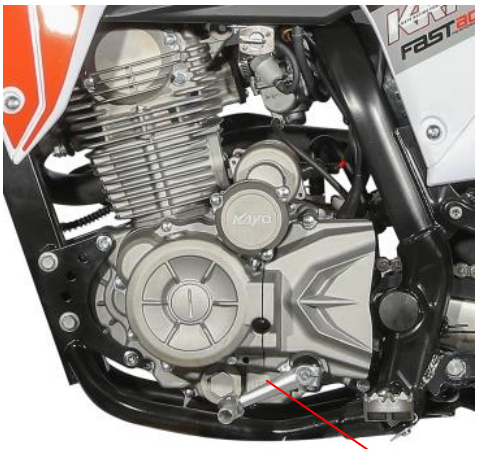
No.	Name	No.	Name
1	Front fender	10	Front brake caliper

2	Headlight	11	Front fork
3	Handlebar	12	Fuel tank
4	Vent pipe	13	Carburetor
5	Fuel tank cap	14	Gear shift lever
6	Fuel tank petcock	15	Pedal
7	Air filter	16	Chain
8	Chain slider	17	Chain guide
9	Front brake disc		

No.	Name	No.	Name
18	Rear fender	24	U-shape rocker arm

19	Muffler	25	Triangle rocker arm
20	Seat	26	Rear brake master cylinder
21	Rear shock	27	Brake pedal
22	Rear brake disc	28	Muffler pipe
23	Rear brake caliper		

VIN number



① ② ③

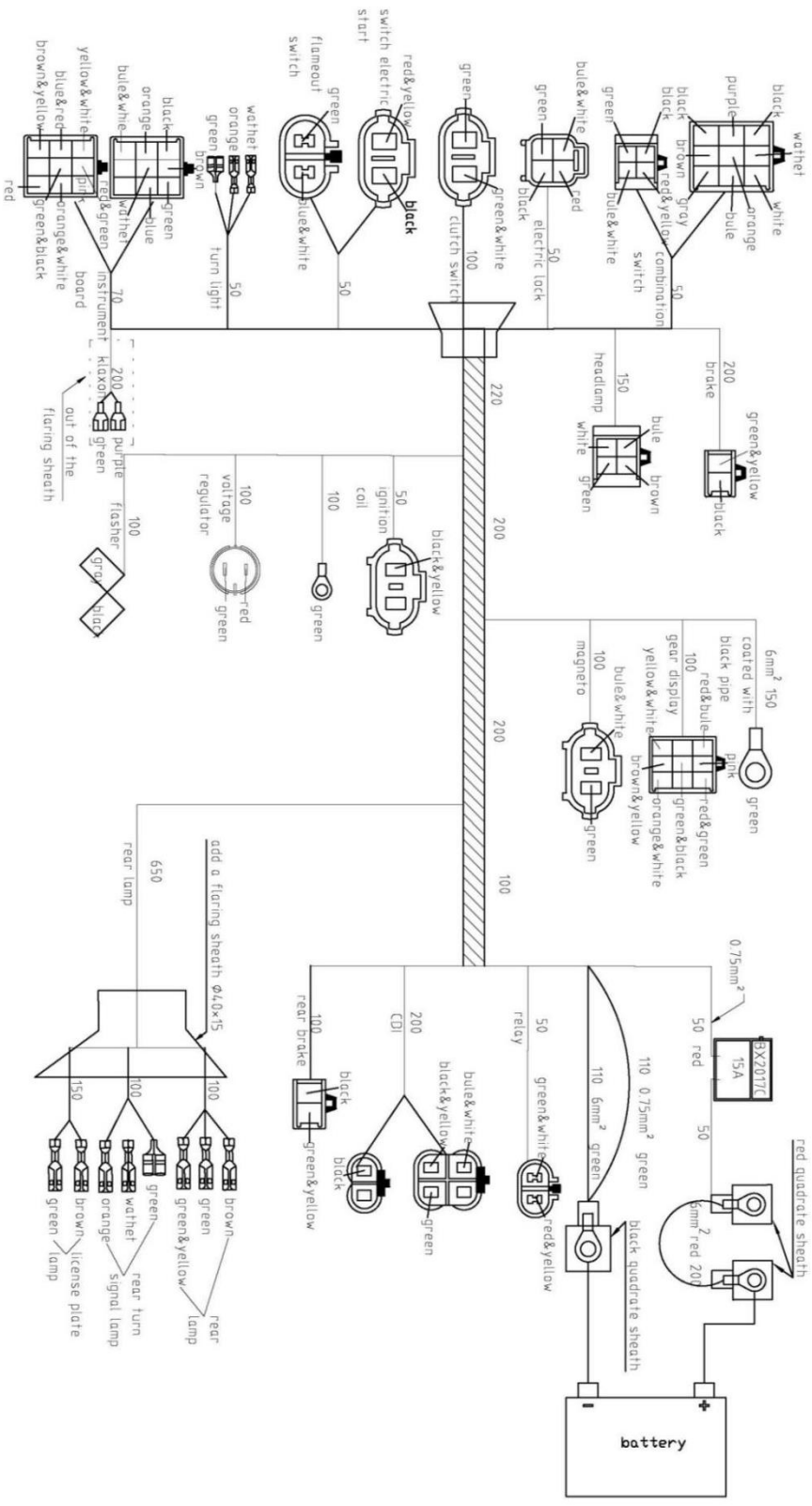
①	VIN number	Located on frame plate
②	Frame plate	Located on frame head tube
③	Engine number	Located on engine crankcase body

Specifications

T4（CP250）size and quality parameters	
Length × width × height （mm）	2195×820×1240
wheelbase（mm）	1436mm
weight（kg）	107
Tire spec.	Front 80/100-21；rear 110/90-18
Seat height（mm）	925
Ground clearance（mm）	335
Fuel tank capacity（L）	10
engine parameter	
Engine type	Single cylinder, four stroke, air - cooled, vertical
Clutch type	Wet, multi-plate
Cylinder diameter × stroke	65.5×66.2mm
method of lubrication	Pressure lubrication, splash lubrication
Oil capacity	1000ml
Oil brand	SJ 10W-40
displacement	223cc
Max power（kw/r/min）	15/8500
Max torque（N•m/r/min）	18/6500
compression ratio	9.25:1
Gear shift type	International six gears 1-N-2-3-4-5-6

Start method	Electric start
Fuel control system	PE28 carburetor
battery	12V/2.4Ah lithium battery
chain	#520H；13T/45T
Frame/shock absorber/braking/wheel parameters	
Frame type	High strength steel tube frame
Front shock	Inverted double adjustable front shock，L=880mm
Rear shock absorber	Compression recovery double adjustable nitrogen charged shock，L=450mm
Rear swing arm	Aluminum swingarm，L=570mm
handlebar	Aluminum alloy tapered handlebar，material 7075 Φ28.6mm
Front&rear rim	Front 1.60×21，rear 2.15×18；Black aluminum rim，Bright silver hub
Front brake system	Double piston pump hydraulic brake system，brake disc Φ270mm
Rear brake system	Single piston pump hydraulic brake system, brake disc Φ240mm
other	
Air filter type	Sponge filter type
Fuel type	Gasoline No. 92 and above
Persons capacity	1 person（driver）
Maximum load mass	120kg

Circuit diagram



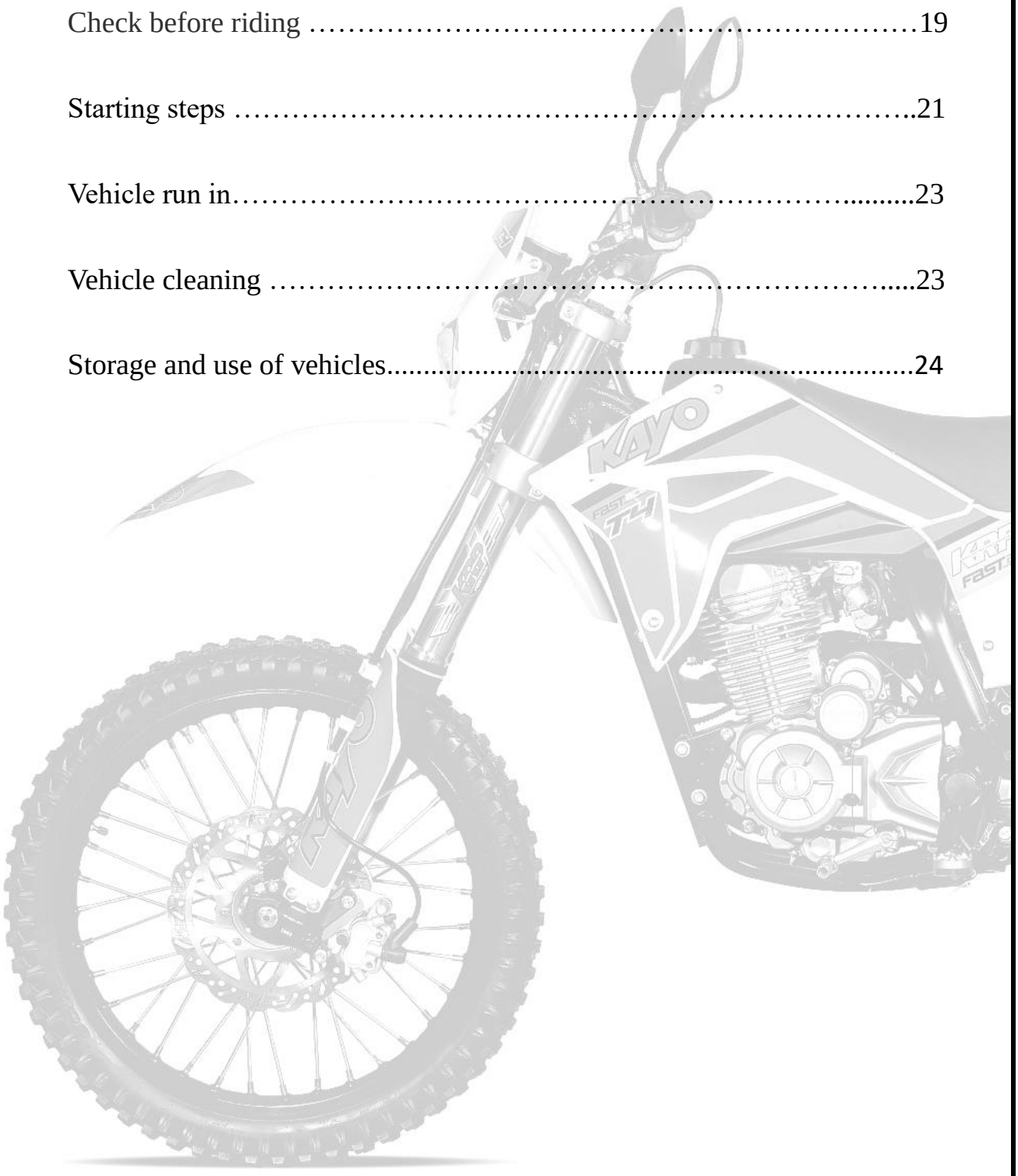
Fastener torque table

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

No.	Item	Fastener specification	Qty	Torque （N•m）
1	Front brake caliper mounting bolt	M8×40 full thread	2	20～32
2	front brake shield mounting screw	M6×16	2	7～11
3	steering column screw	铝制银色	1	/
4	Upper lock block mounting screw	M8×30	4	20～32
5	Front brake disc mounting bolt	M6×16	6	7～11
6	Front wheel axle mounting nut	M16×1.5×H14	1	175～218
7	Footpedal seat mounting bolt	M8×20 full thread	2	20～32
8	shift lever mounting bolt	M6×25	1	7～11
9	Engine hanger bolt	M8×60	3	20～32
10	Engine mounting nut	M10×1.25	2	40～70
11	Water tank mounting screw	M6×25	4	7～11
12	Exhaust pipe mounting nut	M8	2	20～32
13	Chain guider mounting screw	M6×12	3	7～11
14	Swing arm axle mounting nut	M16×1.5×H14.8	1	175～218
15	Triangle linkage mounting nut	M12×1.25	3	68～85
16	Chain adjustment bolt	M10×40×1.25 S14	2	36～55
17	Chain adjustment nut	M10×1.25	2	40～70
18	Rear shock and frame connection bolt	M10×50×1.25	1	40～70
19	oval head bolt	M10×42×1.25+Φ10×28	1	40～70

20	Rear brake disc mounting bolt	M6×16	4	7～11
21	Rear sproket mounting screw	M8×31　10.9 级	6	27～35
22	Rear wheel axle nut	M22×1.5	1	452～550
23	Rear brake shield mounting bolt	M6×12	4	7～11
24	Brake pedal head mounting screw	M5×10　full thread	2	4～7
25	brake limit bolt	M8×20　full thread	1	20～32
26	Rear brake pump mounting bolt	M6×16　full thread	2	7～11
27	brake pedal bolt	M6×25　full thread	1	7～11
28	Ignition coil mounting bolt	M6×20	2	7～11
29	Plastics mounting bolt	M6×16　full thread	10	7～11
30	CDI mounting bolt	M6×16　full thread	2	7～11
31	voltage regulator mounting bolt	M6×25　full thread	2	7～11
32	Electric switch lock bracket bolt	M6×12	2	7～11
33	Fuel tank switch mounting screw	M5×12　full thread	2	4～7
34	front mudguard bolt	M6×12	4	7～11
35	Left and right guard plate and fuel tank connection screw	M5×10　full thread	6	4～7
36	Cross head screw	ST 4.2×12	10	/
37	Cross flat head screw	M6×10	4	/
38	sparking plug	/	1	25～30

OPERATION INSTRUCTIONS



Check before riding

1.Fuel level

Open the tank cap and shake the handlebars, and observe the fuel the level of the tank. If fuel is low, please add fuel.

2. Fuel tank switch

There are three positions of the fuel tank switch in this motorcycle, from top to bottom: RES (the auxiliary fuel tank is open), OFF (the fuel tank switch is closed), ON (the fuel tank switch is open).If the fuel tank switch is OFF, there is no fuel in the carburetor and the engine cannot run. If fuel is low in the tank, switch the tank to the RES position and refuel immediately. If fuel is sufficient and the motorcycle is in good condition, switch to ON.

Note: when the engine is turned off, turn the tank switch to OFF

3. Engine Oil level.

Engine Oil capcity:1500ml. To check oil level run the vehicle for a few minutes until it reaches operating temperature. Then stand the bike up vertically and check the sight glass on the lower right side of the engine case.

Low High

4. **Brake fluid level**.

Through the brake fluid sight glass (①and②), checking the brake fluid in the brake master cylinder. If brake fluid level is lower than half of the observation hole, or "LOWER" position, then add brake fluid.

Note: brake fluid should be replaced annually even if the motorcycle has not been used for a long time.

Note: please check the brake fluid level frequently. Check the brake line and connecting points for damage or wear. If any, please replace. Check the master cylinder/calipers for damage or wear, if any, please replace.

Note: Do not leave .brake reservoirs open for extended periods of time

Note: Always use brake fluid from an unopened container

①Front Brake fluid sight glass

②Rear Brake fluid sight glass

5.Brake pads

Check the caliper brake pad's thickness, if the brake pad's thickness is less than the minimum thickness, the brake pad must be replaced. Check the caliper brake pad for damage or crack. If there is damage or crack, a new brake pad should be replaced.

Minimum thickness of brake pad:

Front MIN = 1 mm

Rear MIN = 1 mm

Note: brake pads should be replaced as a set.

Brake pad

6. **brake disc**

Check for damage to the brake disc surface, (scratches, gouges, warping, bluing) and check the thickness, if the brake disc is less than the limit thickness, the brake disc must be replaced immediately.

Limit thickness of brake disc:

Front MIN=3.5mm

Rear MIN=3.5mm

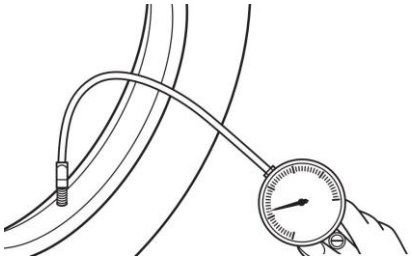
Brake disc

7.Check tire pressure

Use the pressure gauge to check whether the tire pressure level is in specification,

Recommended pressure: front 2.23 bar (2.23 kgf /cm2); rear 2.77bar (2.77 kgf /cm2).

Note: the tire pressure check should be done under cool conditions. Riding with over or under inflated tires will affect operation and ride comfort and may result in irregular tire wear and loss of control



8.Check spoke tension

Pinch the two adjacent spokes with your fingers to check whether there is a lack of tension in the spokes. If the spokes are found loose wheel truing and tightening may need to be performed..

NOTE: spoke tensioning and truing should be performed by a professional

9.Check the chain and its supporting parts

Check chain tension. If the chain is too loose, it can be adjusted by loosening the rear axle and adjusting the chain adjusters. Do not make the chain too tight.

Note: if the chain needs to be tensioned frequently, or if you find any signs of wear on the front sprocket, rear sprocket and chain replace immediately.

chain adjuster

10.Check whether the front shock absorber needs to vent

Exhaust screw

When the ambient temperature is high, the gas in the shock absorber is heated and expands. At this time, it is necessary to exhaust the gas through the exhaust screw at the front and the upper end. Otherwise, it is easy to expand and damage the oil seal, which will affect the use of the shock absorber.

11.Inspection of the remaining components

Visually inspect the entire motorcycle for loose parts. Tighten any loose bolt or parts

. Check the battery charge.

check the lights.

Note: these pre ride checks won't take much time, but it can help you develop good riding habits and make your daily riding easier and safer.

.

starting steps

Clutch handlebar

The electric starting steps are as follows:

1. Switch the fuel tank to the "ON" position;

2. turn the key switch on;

3, the left hand pull in clutch lever;

4, the right hand pull in front brake lever;

5. push the start button

6. once then engine starts make sure you are in neutral and release clutch and brake levers

Key switch Start button

Note: when the vehicle starts, the brake should be applied to prevent the vehicle from starting in gear.

Vehicle Break in procedure

Motorcycle engines have many parts that make relative movements, such as pistons, piston rings, cylinder blocks, and meshing transmission gears. Therefore, in the initial stage of use, the engine must be regularly run-in. The running-in can adapt the moving parts to each other, correct the working gap, and form a good smooth friction surface that can withstand large loads. After the engine break-in is complete. Engine will have excellent performance and reliability.

The recommended running-in steps are as follows:

1. 0 ~ 4.5h stage: when using a motorcycle at 50% ~ 75% throttle, the speed should be changed frequently to avoid the motorcycle running at the same throttle for a long time; after each hour of running, let the engine cool for 5 ~ 10 minutes; Avoid rapid acceleration, and deceleration.

2, 4.5 ~ 7h stage: work under 50% ~ 75% throttle, at this time, the motorcycle can run at the same throttle for longer times. While running, the throttle can reach 100%, but for no longer than 5-10 seconds;

3, 7 ~ 10h stage: Use motorcycles at 75% ~ 100% throttle.

4. Above 10h: Increase the speed to 60 ~ 80km / h, until the engine's performance is fully utilize.

Danger: when driving, please do not accelerate recklessly, this behavior can easily lead to engine damage, accident and injury.

Vehicle cleaning

Vehicle cleaning is also an important part of the daily use and maintenance of motorcycles. Regular cleaning of your motorcycle can keep your vehicle in good motion and prolong its service life. Here are the steps you can take to clean your motorcycle:

1. Plug the exhaust system to prevent water from entering;

2. Seal the switches and connectors with tape;

3. Use low-pressure water spraying device to remove mud and dirt on the surface;

4. Clean especially dirty parts with special motorcycle cleaner;

5. Rinse with low pressure water;

6. Let the motorcycle air dry naturally;

7. Drive the motorcycle for a short time until the engine reaches the working temperature;

8. Lubricate the chain and all other components that need lubrication.

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

Storage and use of vehicles

When you plan to store your vehicle for long periods of non-use, follow these steps:

1. Block the exhaust pipe;

2. Thoroughly clean the motorcycle;

3. Wait for the motorcycle to air dry naturally;

4. Start the engine for about 5 minutes to heat the lubricating oil, and then empty the oil from the engine;

5. Add new engine lubricant to the engine;

6. Empty the fuel tank (if it is not used for a long time, the gasoline will deteriorate);

7. Lubricate the chain;

8. Apply oil to all unpainted metal surfaces to avoid rusting;

9. Keep motorcycle wheels floating when storing motorcycles. If this condition cannot be met, cardboard or padding can be used under motorcycle tires.

10. Cover the motorcycle to prevent dust and dirt from adhering.

Note: when applying anti-rust oil, please do not splash oil on the brake and rubber parts, This may cause rubber parts to deteriorate. .

After the motorcycle is stored for a long time, please follow these steps before putting it into use:

1. Remove the obstruction in the exhaust pipe;

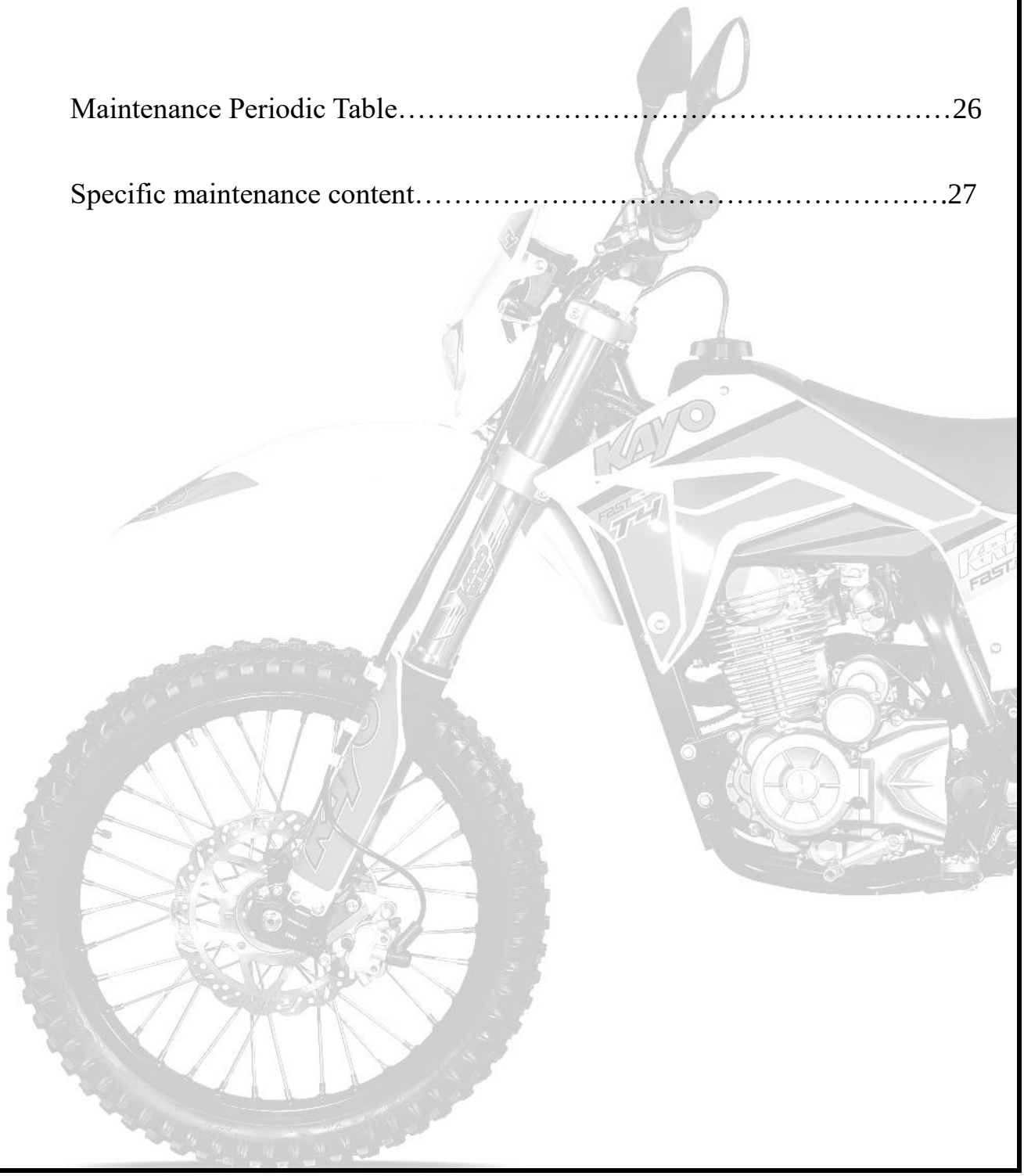
2. Tighten the spark plug;

3. Fill the fuel tank with fuel;

4. Check the inspection items before daily driving;

5, conventional lubrication of motorcycles.

Routine maintenance



Maintenance Periodic Table

	Once after 1 hour of riding	Every 10 hours/after racing	Every 20 hours	Every 30 hours
Check and charge the battery		●	●	●
Check the front disc brake pads		●	●	●
Check the rear disc brake pads		●	●	●
Check the front and rear disc brakes		●	●	●
Inspect the brake hose for damage or leaks		●	●	●
Check the rear disc brake fluid level		●	●	●
Checking the free travel of the brake pedal		●	●	●
Checking the frame and rocker		●	●	●
Check if the rocker bearing is loose			●	
Check the Heim connector on the top of the shock absorber		●	●	●
Check shock absorber connecting rod		●	●	●
Check the condition of the outer surface of the tire	○	●	●	●
Check tire pressure	○	●	●	●
Check if the hub bearing is loose		●	●	●
Check the wheel		●	●	●
Check for rim edge runout	○	●	●	●
Check spoke tension	○	●	●	●
Check the chain, rear sprocket, engine sprocket, chain guide and chain stopper		●	●	●
Checking chain tension	○	●	●	●
Oil all moving parts (such as chains, handles, etc.) and check for smooth operation		●	●	●
Check the front disc brake fluid level		●	●	●
Checking the free travel of the brake lever		●	●	●
Check if the steering head bearing is loose	○	●	●	●
Check valve clearance	○			●
Check clutch			●	
Replace the cap seal and shaft seal ring of the pump				●
Change oil and oil filter, clean oil filter	○	●	●	●
Inspect all hoses (such as fuel, exhaust, etc.) and bushings for cracks, leaks, and incorrect	○	●	●	●
Inspect cables for damage and sharp bends		●	●	●
Check that the throttle cable is intact, without sharp bends, and set correctly	○	●	●	●
Cleaning the air cleaner and air cleaner case		●	●	●
Check that the screws and nuts are tight	○	●	●	●
Replace the fuel filter	○	●	●	●
Checking the carburetor idle speed	○	●	●	●
Final inspection: check if the vehicle is running safely and test run	○	●	●	●

○ One time interval

● Periodic interval

Note: This table is for reference only. Please adjust the specific cycle according to the use of the motorcycle.

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

Specific maintenance content

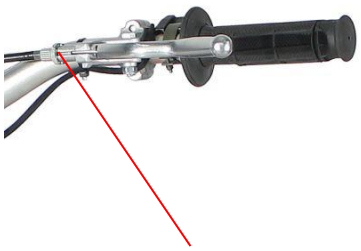
1.Clutch handle

The clutch handle can be adjusted according to your actual needs:

By adjusting the nut, the pull of clutch lever 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.

Note: The clamping force of the clutch handle should not be adjusted too much, otherwise the clutch line will be easily broken.



Adjusting nut

2.Clutch disc

For the inspection, adjustment and replacement of this item, please refer to the engine maintenance manual below for details

3. Throttle

Turn the throttle handle by hand to checking if it is smooth and snaps back quickly.

Check whether the throttle cable has a free play of 10-20mm;

If the free play is too little, adjust as follows:

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

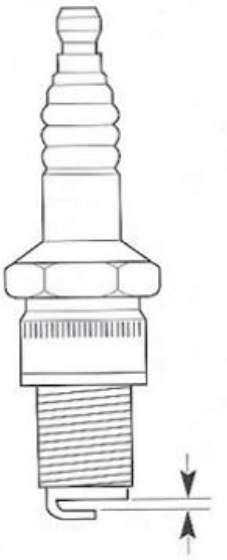
throttle handle

Rotate the adjuster until free play is correct,

Then tighten the lock nut.Rotate the adjuster for best results,

Then tighten the lock nut.

4.Spark plug



Engine spark plug torque is 25-30N • m.

The spark plug must be removed regularly to check the gap (0.6 to 0.7 mm) between the electrodes. If the spark plug contains oil or carbon, clean with a wire brush or similar. Measure the distance between the electrodes with a measuring instrument and adjust it to prevent abnormal bending of the external electrodes. If the spark plug electrode is rusted, damaged, or the insulator is broken, the spark plug must be replaced.

Note: The spark plug should be checked every 10 hours and replaced every 20 hours.

Note: If engine performance decreases, replace spark plug to restore normal performance

5.Air filter

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

Remove the seat cushion;

Remove the air filter cover;

Check the air filter.

seat

Installation is performed in the reverse order of removal.

Air filter cover

Danger: The air filter should be cleaned regularly to prevent dust or dirt from entering the engine, which may cause engine wear or even damage. Filters should be cleaned in a well-ventilated area and ensure that there are no sparks, flames, or strong heat sources in the workplace. Never use gasoline to clean the filter.

Warning: If the filter is damaged, it must be replaced immediately, otherwise dirt can enter the carburetor and cause engine failure. When installing the air filter lubricate all connections and threads.

6.Carburetor

Throttle screws and air screws allow idle speed adjustment of the carburetor. The steps are as follows:

Turn the air screw clockwise until it reaches the top of its stroke and reverse one and a quarter turns;

Adjust the throttle screw to ensure that the engine can idle at a steady speed when the throttle is fully relaxed;

Adjust the throttle screw to reduce the engine speed as much as possible;

Adjust the air screw to make the engine speed as high as possible;

Repeat the above steps until a satisfactory speed is obtained;

Check if the throttle cable is working properly.

Danger: Driving a motorcycle with a damaged throttle cable is undoubtedly a very dangerous behavior. A normal throttle cable should have a free travel of at least 10mm. Start the engine and turn the handlebar left and right. If the engine stalls or accelerates due to the movement of the handlebar, the throttle cable is not adjusted properly or damaged. Make sure the throttle cable is normal before driving the motorcycle.

7. Engine oil

Lubricating oil is a very important part of normal engine operation. Insufficient lubricant, deterioration or pollution can cause engine wear and damage.

Oil level check

If the motorcycle has just been used, wait for a few minutes after the engine has stopped to check;

Observe the amount of lubricating oil in the engine through the oil dipstick. The status of the CP250 engine of the T4 model can be observed through the oil level hole;

The level of lubricating oil in the engine should be between the maximum and minimum values, that is, between "H" and "L";

If the oil level is too high, remove excess oil through the drain bolt;

If the oil level is too low, add oil through the cap.

Note: The added lubricant should be the same as the original organic oil grade in the engine.

Recommended oil brands and brands are:

Shell lubricants SJ 10W-40

Maximum oil capacity: 1000ml

Oil Change

Lubricants need to be changed regularly to ensure the life of the engine. The replacement steps are as follows:

Start the engine and let it run for 5 minutes to mix any sediment with the oil;

Stop the engine and place the container under the engine;

Unscrew the oil drain bolt and place the motorcycle above the container, so that all the oil can be smoothly discharged;

oil drain bolt

Open the oil dipstick hole so that the engine can vent;

Clean the oil drain bolt;

Tighten the oil drain bolt, the torque is 68 ～ 84N • m;

Pour new oil through the oil filling hole;

Start the engine and observe the oil level. If the oil is low, shut down the engine, continue to add oil, and repeat the operation 3 to 4 times until the

oil level meets the requirements;

Close the oil fill hole and tighten the oil cap.

8.Piston and piston ring

For the inspection, adjustment and replacement of this project, please refer to the engine maintenance manual for details.

9.Cylinder, cylinder head and exhaust valve

For the inspection, adjustment and replacement of this item, please refer to the engine maintenance manual for details.

10. Exhaust system inspection

Exhaust pipe and muffler can guide gas emission and reduce noise.

If the exhaust pipe is rusted or damaged due to impacts, please replace it with a new one immediately. If the noise is too high or the engine performance is reduced, replace the muffler.

If you need to replace the muffler, follow these steps:

Unscrew the lower right protective plate fixing screw;

Unscrew the upper right protective plate fixing screw;

Unscrew the connecting bolt between the muffler and the rear subframe

Pull out the muffler backward;

Replace the muffler and replace the fasteners;

Muffler is installed in the reverse order of removal.

11.Crankshaft connecting rod and bearing

For the inspection, adjustment and replacement of this item, please refer to the engine maintenance manual for details.

12.Starter, shift pedal and brake pedal

Lubricate the moving parts and joints with oil or grease, use caution as excessive lubrication may cause the boots to slip on the pedals and affect riding.

13. Inspection of control system of brake system

Front brake handle:

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

Rear brake pedal:

Under normal circumstances, the brake pedal should have a free travel of 20 to 30 mm. Check the brake lever to see if the stroke is correct.

Danger: Please test the braking system (including front brake and rear brake) before starting each motorcycle. If you feel soft when pinching the brake lever or pressing the brake pedal, there may be air in the pump or oil circuit, or One or more parts of the braking system are in poor condition. If this happens, please check the brake system immediately and contact KAYO dealer.

14.Brake system wear inspection

Check the thickness of the front and rear brake caliper brake pads. The thickness should be not less than 1mm. If the brake pad thickness is less than or equal to the minimum thickness, the entire set of brake pads should be replaced immediately.

caliper brake pads

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

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

Danger: If it is checked that the brake system is too worn, you should replace the corresponding parts immediately to avoid causing further damage, accident, or injury. The specific replacement should be performed after consulting the KAYO dealer.

Brake disc

15.Brake fluid

The brake fluid must be inspected and replaced regularly. If water, mud or other particulate matter is mixed in the brake fluid, the brake fluid should also be replaced.

DOT4 brake fluid is recommended.

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

brake fluid level observation hole

16, brake fluid volume check

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

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

Danger: Please check whether the brake fluid leaks or the brake fluid pipe is damaged. If leakage occurs, please contact KAYO dealer.

17.Spokes and wheels

The spokes should be tightened evenly to prevent the rim from shifting. If the center of the rim is offset, some spokes can be stretched, which will easily deform or cause the rim to break.

If the inspection shows that the tire center is slightly off-center, you can use a tension wrench to loosen or tighten some spokes to correct it. If the rim is bent or severely deformed, replace the rim immediately.

Warning: The inspection and adjustment of spokes and wheels requires related expertise. We recommend that you consult your KAYO dealer or directly at the dealer.

19.Chain guide check

chain guide

Check the chain slider and chain guide for wear on the swingarm. Under normal circumstances, these two play an important role in guiding the chain movement. However, if worn too much, these can damage the chain and or sprockets. Excessively worn chain sliders and chain guides should be replaced.

20.Front shock absorber inspection

Check the front shock absorber, and if necessary, deflate the front shock absorber with the exhaust screw.

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

After placing the motorcycle on the ground, press the handlebars by hand to test whether the spring back is sensitive after pressing down.Our T4 models use FASTACE dual adjustable front shock absorbers, whose damping hardness can be adjusted by adjusting screws.

If you wish to replace the front shock absorber, please contact your KAYO dealer. This requires relevant professional knowledge and skills.

21. Gasoline inspection

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

DANGER: Riding a motorcycle with a broken pipe may even cause a fire by starting the engine, so if you find a problem with the fuel pipe, do not start your motorcycle. When replacing the oil pipe, please use the matching equipment produced or authorized by KAYO original factory.

22.Fuel system inspection

Make sure oil tank, oil tank cap, switch etc. has no leaks before driving.

23.Steering column adjustment

Steering column should be adjusted frequently to keep the handlebar rotate freely.

Place the motorcycle on mounting bracket and make the front fork completely suspended. Turn the handlebars to the middle position, if the handlebars continue to move after letting go, the steering column is not tight. Hold the lower fork, gently push and pull the fork, if there is a free moving clearance, the column is not installed tightly.

steering column tightness adjustment：

- Fix bike and keep front fork suspended.
- Loosen upper plate retaining bolt；
- Rotate adjusting nut to right position；
- Tighten steering shaft nut；
- Recheck the steering, repeat above process if necessary；
- Recovery of handlebar.

24.routine lubrication

All bike parts need to be lubricated regularly. After cleaning the bike with low pressure water flow, the bike also needs to be lubricated. Use antioxidants to clean rusty parts and remove residual oil, grease and dirt from the surface before lubricated.

parts need to be lubricated：

- Rear brake pedal bearing
- Rear brake pedal
- Gear shift lever
- Chain

Spray with tubing for pressure lubrication. Lubricate the throttle cable with grease.

note：After driving on wet roads, even if the chain looks dry, it must be lubricated. Please use the recommended product for lubrication.

25.rear shock inspection

T4 model equipped with FASTACE double adjustable nitrogen charged rear shock.. Check the rear shock, see the reservoir condition and the spring for damage. Replace the shock if necessary.

Please follow the following steps to disassemble the rear shock

- Lift bike to let it hang in the air；
- Remove seat；
- Remove guard fenders from left and right.
- Remove the muffler；
- Remove sub frame；
- Remove rear shock and frame mounting bolts.
- Loosen the connection bolt between linkage and swing arm (do not remove).
- Remove bolt of rear shock at swing arm.
- Make sure here is no interference, remove the rear shock .
- Installation: In reverse order of disassembly.

25.Chain inspection

One of the most important parts of the motorcycle, the chain transfers engine output power to wheel. The chain needs inspection and maintenance frequently to ensure its normal use.

Adjust chain tension：

- On a stand with rear wheel suspended.
- Measure distance between swingarm and chain, normal range:30～36mm.

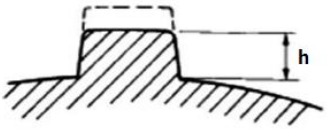
Tensioner nut

- Loosen rear axle nut.
- Find out the max chain tension position.
- Adjust front and rear position of tensioner, align wheel.
- Tighten tensioner nut.
- Tight rear axle nut.
- Check max tension point, adjust tension if necessary.。

Rear shaft nut

When inspecting chain tensioner, the chain guide rail and sprocket should be inspected. If the chain is overused or stretch excess 2%, replace it. If replace different specification chain, guide rail and sprocket should be replaced together. To keep performance, it's better to change whole transmission system when replace chain. Replace parts should be KAYO brand or KAYO recommend.

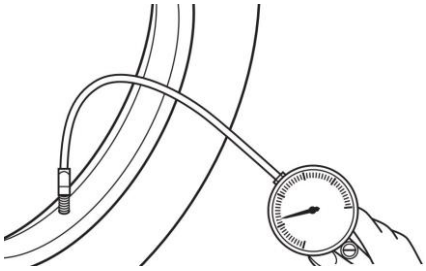
27.wheel inspection



Two aspects：

tread：check the height, if shorter than min height, replace .

Min thread height 3 mm。



Tire pressure：use barometer test tire pressure.

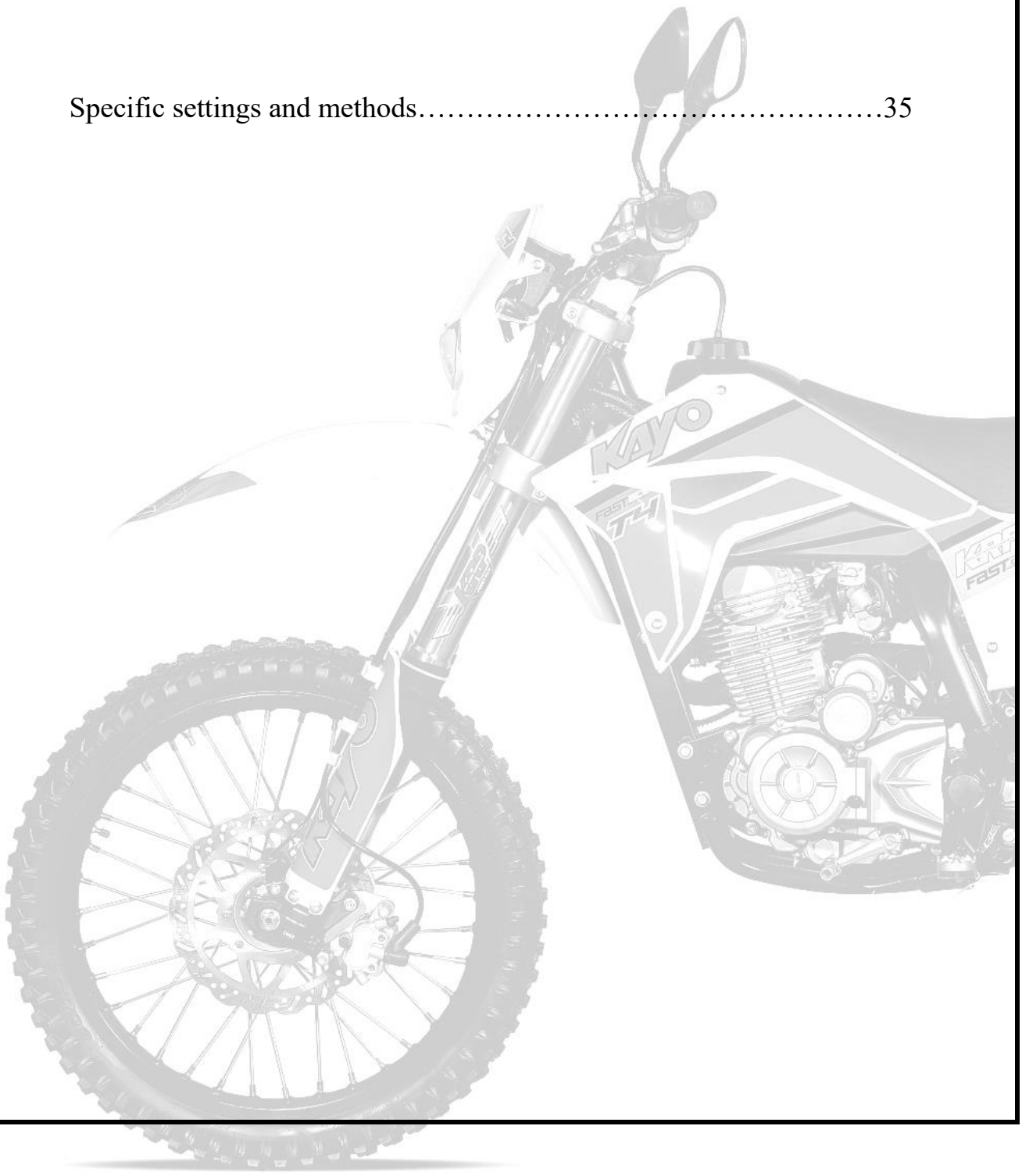
Recommend tire pressure: front 2.23bar；rear 2.77 bar。

28.battery inspection

Remove seat, use multimeter to test the positive and negative voltage and current output. If battery runs low, charge it. If battery damaged, replace it.

note：replace KAYO recommend brand.

Vehicle settings



Specific configuration and methods

Carburetor

Carburetor is very important for bike performance, we use NIBBI PE28. change valve opening will affect gas mixture, then engine performance.

You can update carburetor to make bikes more suitable.

Two way transmission ratio setup

Two way transmission ratio can adjusted by changing sprocket teeth.

KAYO T4 rear and front sprocket teeth：

Rear sprocket：45T

Front sprocket：13T

note：Consult dealer before replacing sprocket.

note：adjust or replace chain based on actual condition. If choose unfit chain will wear out sprockets and may lead to further damage, accidents, or injury

.

If reduce transmission ratio, the max speed reduced too, but this better for acceleration. Low speed is easy to bike control and suitable in rough road.

If increase transmission ratio, the max speed increased too. high speed is not good for low speed bike control and acceleration.

Front suspension

Frame, engine and suspensions are the most important parts for bikes. Frame and engine can't adjust, but suspension can adjust based on using.

T4 equipped with FASTACE inverted double adjustable suspension. Stiffness and damping can be adjusted as below:

- Compression adjusting screw on the top.
- Exhaust screw on the top.
- Rebound adjusting screw on the bottom.

Compression adjusting screw

Rebound adjusting screw

note：when adjust front fork, both sides adjusted together, or it may cause accident.

Rear suspension

T4 equipped with FASTACE double adjustable nitrogen balloon rear suspension, adjusted as bellow:

- Compression adjusting screw.
- Spring preload adjustment
- Rebound adjusting screw

Pressure adjusting screw

Spring preload adjustment

Rebound adjusting screw

Electric parts inspection

Electric parts inspection and replacement

Electric lock inspection and replacement

Disassembly

As bellow：

Remove headlight/ front panel

Dispatch connector between electric lock and main cable.

Take electric lock off.

Inspection

Check whether the terminals connectors can be conducted as the table shows:

	black	red	Black/white	green
On	●	●		
Off			●	●

● — ●Conduction is normal

If doesn't connected, replace it.

Installation

In reverse order of disassembly.

Meter inspection and replacement

Disassembly

As bellow：

Remove headlight/ front panel

Dispatch connector between electric lock and main cable.

Remove meter fixed screw

Remove meter

Inspection

Open electric lock

Check the meter data

If meter doesn’t work, replace it.

Installation

In reverse order of disassembly.

Multi-function switch inspection and replacement

Disassembly

Remove the switch mounting screw

Disconnect the connector between switch and main cable.

Remove switch

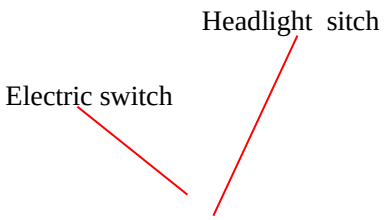
Inspection

Check whether the terminals connectors can be conducted as the table shows:

● — ●Conduction is normal

①headlight switch wiring table

	blue	black	brown	white
Distance light	●	●	●	
Lower beam		●	●	●
OFF				



②stop switch wiring table

	Black/white	green

stop	●	●
On		

Horn switch turn lights switch

Stop switch

③eletric switch wiring table

	yellow/red	green/white
eletric	●	●

④turning lights switch wiring table

	orange	grey	Light blue
⇦	●	●	
⇨		●	●

⑤horn switch wiring table

	purple	yellow
horn	●	●

If doesn't connected, replace switch.

Installation

In reverse order of disassembly.

Headlight inspection and replacement

Disassembly

As follows：

Remove mounting bolt from the headlight bracket

Remove the mounting screw from the lower headlight bracket

Disconnect the connector between headlight and main cable connector.

Take off the headlight.

Inspection

Check whether the terminals of the headlight connector can be conducted as the table shows:

	blue	green	white	brown
distance light	●	●		
Lower beam		●	●	

● — ● Conduction is normal

If not replace bulb or whole headlight.

note： when working headlight bulb power is large and with high temperature, keep the bulb cooled before touching and operating.

Installation

In reverse order of disassembly.

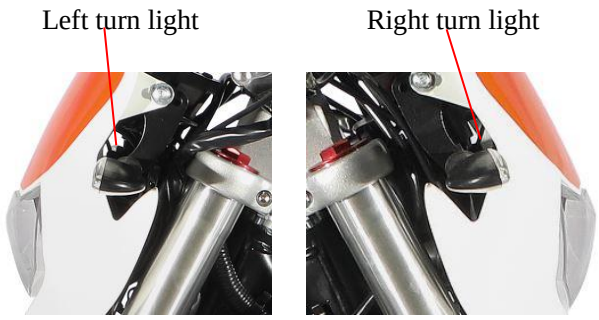
Front turn light inspection and replacement

Disassembly

As below：

Remove headlight

Disconnect the left and right turn lights from the main cable.



Inspection

Check whether the terminals of the turn lights connector can be conducted as the table shows

	orange	green	blue
Left turn light	●	●	
Right turn light		●	●

● — ●Conduction is normal

If not replace turn light

Installation

In reverse order of disassembly.

Inspection and replacement of horn

Disassembly

Disassemble the horn as below:

Remove headlight/head panel

Disconnect the horn from the main cable

Remove horn mounting bolt

Remove electric horn

Inspection

Connect the horn to the battery by wire

If the horn can make a continuous loud sound, the horn is normal. Otherwise, you need to replace the horn

Installation

Installation in reverse order of disassembly

Inspection and replacement of rear turn signal

Disassembly

The steps for removing the rear left and right turn lights are as below:

Disconnect the left and right turn lights from the main cable Remove the shelf

Remove left and right lights

Rear left turning light

Rear right turning light

Inspection

Check whether the turn signal terminals are on

	orange	green	blue
Left turning light	●	●	
Right turning light		●	●

● — ●The conduction is normal

Replace the corresponding turn signal if it can not be switched on

Installation

Installation in reverse order of disassembly

Inspection and replacement of taillights

Disassembly

The taillights are removed as below:

Disconnect the taillight from the main cable

Remove taillight mounting nut

Remove tail lights

tail light

Inspection

	brown	green	yellow/green
stoplight		●	●
anti-fog light	●	●	

Check whether the tail lights terminals are on

● — ●The conduction is normal

If the taillight is not on, replace the tail light

Installation

Installation in reverse order of disassembly

Inspection and replacement of licence lamps

Disassembly

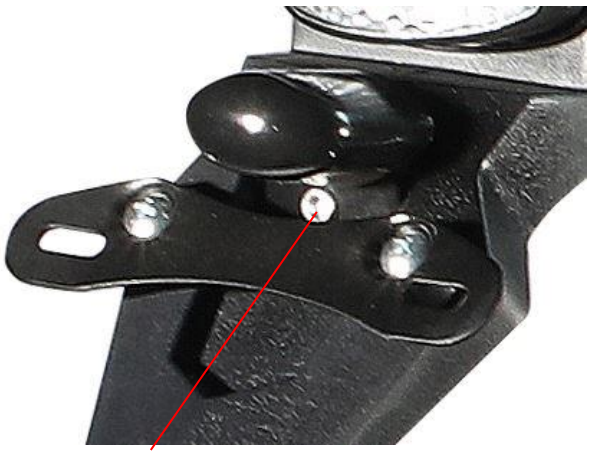
The license plate light is removed as below:

license plate light

Disconnect the light from the main cable

Remove plate lamp fixing bolts

Remove licence lamp



Licence lamp fixing bolts

Inspection

Check whether the license plate light terminals are on

	brown	green
license plate light	●	●

● — ●The conduction is normal

If the license plate light is not on, replace the license plate light

Installation

Installation in reverse order of disassembly

Check and replace relays

Disassembly

The relay is removed as below:

Remove

Removal of seat cushion

Removal of the rear right upper and lower panels

Disconnect relay from main cable

Remove relay

relay

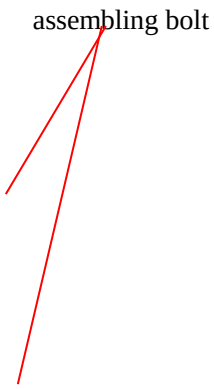
Inspection

Start the car, if the car can be started normally, the relay is normal; conversely, if other parts are normal, the relay needs to be replaced.

Installation

Installation in reverse order of disassembly

Inspection and replacement of steady voltage rectifier



Disassembly

The steady voltage rectifier is removed as below:

Remove seat cushion

Remove tank

Disconnect the voltage regulator from the main cable

Remove mounting bolts

Remove rectifier

Inspection

Start the vehicle, if can be started normally, the steady voltage rectifier is normal; conversely, if other parts are normal, the rectifier needs to be replaced.

Installation

Installation in reverse order of disassembly

steady voltage rectifier

Inspection and replacement of igniter

Disassembly

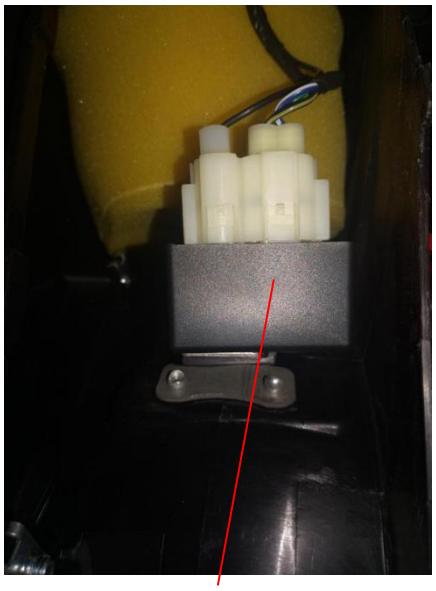
he igniter is removed as below:

Remove seat cushion

Remove air filter cover

Disconnect igniter from main cable

Remove igniter



igniter

Inspection

Start the vehicle, if can be started normally, the igniter is normal; conversely, if other parts are normal, the igniter needs to be replaced.

Installation

Installation in reverse order of disassembly

Inspection and replacement of ignition coil

Disassembly

Remove seat cushion

Remove oil tank

Disconnect the ignition coil from the main cable

Remove the ignition coil mounting bolts

Take down the ignition coil

mounting bolts ignition coil

Inspection

Start the vehicle, if can be started normally, the ignition coil is normal; conversely, if other parts are normal, the ignition coil needs to be replaced.

Installation

Installation in reverse order of disassembly

Speed sensor inspection and replacement

Speed sensor fixing nut

Disassembly

The speed sensor is removed as below:

Remove the headlight

Disconnect sensor from main cable

Remove the fixing nut

Take out the sensor

Inspection

Check whether the sensor is normal through the instrument, if the sensor is damaged, replace the sensor.

Installation

Installation in reverse order of disassembly

Vehicle Troubleshooting

Possible failures and troubleshooting methods

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

Problem	Reason	Solution
The engine crank can not rotate	Crank stuck	Contact KAYO Service Centre
	Cylinder, piston, connecting rod stuck	Contact KAYO Service Centre
	Gearbox stuck	Contact KAYO Service Centre
Press the starter, the engine doesn't work	Starting relay fuse was burnt	Remove seat cushion and check fuse, replace fuse if it was burnt.
	Insufficient battery power	Remove the cushion and check the battery
Engine can not be started	The motorcycle was parked for a long time and the fuel had deteriorated.	Drain old fuel and inject new fuel
	The spark plug is wet or dirt	Clean or dry spark plugs and replace spark plugs if necessary
	Engine was taken in water	First, exhaust the oil in the crankcase and remove it. Clean it with a strong cleaning agent and remove the spark plug.Blow it dry with a fan (a machine that inflates the tire)，then dry the air filter and remove the exhaust pipe.Blow dry with fan. When everything is done, the owner should add new oil to the engine before driving.Because the moisture in the crankcase is difficult to evaporate completely, the new oil will contain a little water. Therefore, after the engine was taken in the water and the vehicle runs 100 kilometers, the oil

		should be changed and changed again within 500 kilometers. After three times, the carburetor's moisture is almost gone. If you want to test the carburetor for moisture, you can remove the oil from the crankcase, observe its color, if white, that means there is moisture. If the cylinder has water, in the case of flameout, step for a several times to start the rod.If you step it for a several times, the water in the cylinder will drain away from the exhaust pipe, and then blow the fan into the oil mouth for a few minutes. **Warning:**For the sake of safety, the spark plug should be wrapped with dry cloth to avoid spark jumping.
	Incorrect mixing of air and fuel	Clean the tank vent and adjust the air filter duct
	Open the exhaust valve	Check exhaust valve and correct
The engine can start, but it will stall immediately	Incorrect air supply	Close the stop valve, clean the tank vent and adjust the air filter duct
	Lack of fuel	supplementary fuel
Uneven engine operation	Dirt on spark plugs, damage or adjustment error	Remove spark plug for cleaning, adjustment and replacement if necessary
	Problem with spark plug	Check the condition of the spark plug cap, check whether the contact between the spark plug cap and the cable itself is good, check the cable and replace the damaged parts.
	Ignition rotor damage	Change the rotor
	The fuel was mixed with water	Empty the fuel and inject new fuel
Inadequate engine power or poor acceleration	Problems with fuel supply	Clean fuel system and check
	Dirt in air filter	Clean air filter, replace if necessary
	Exhaust system damaged or	Check the exhaust system for damage and replace relevant

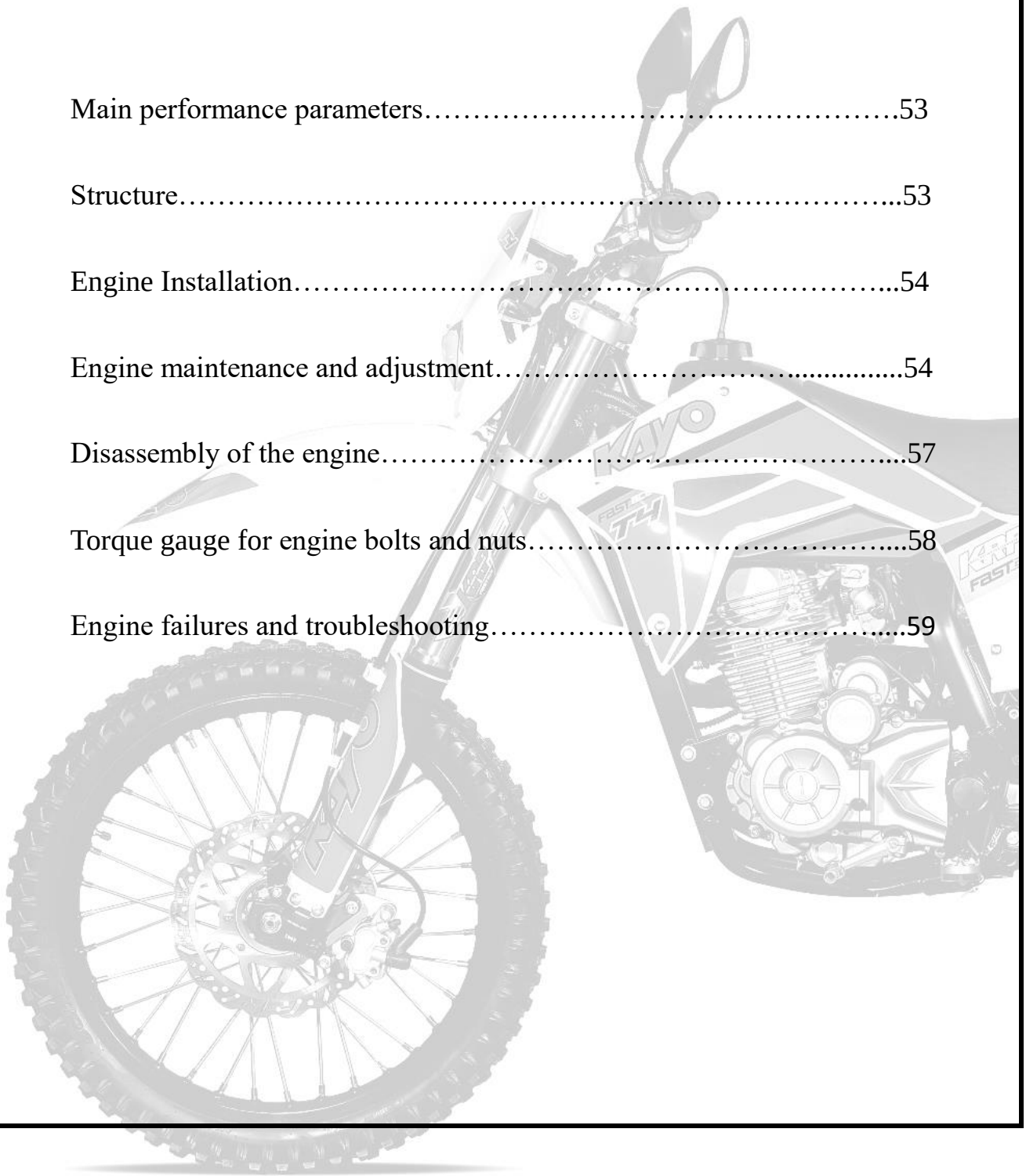
	leaking	fittings if necessary
	Dirt in carburetor nozzle	Remove the carburetor and clean the nozzle
	Crankshaft bearings damaged or worn	Contact KAYO Service Centre
Engine sound abnormally	Ignition problem	Contact KAYO Service Centre
	overheating	See the "engine overheating section"
Tempering of exhaust pipe	Carbon deposits in the combustion chamber	Contact KAYO Service Centre
	Gasoline inferior	Replacement of fuel
	The spark plug is in poor condition or in poor specification	Replace new spark plugs with correct specifications
	Exhaust gasket aging	Check that the exhaust system is damaged, that the gasket is in good condition, and that if the gasket is aged, replace the gasket
Smoke from exhaust pipe	Oil contains moisture	Replace the fuel
Black smoke from exhaust pipe	Air filter blocked	Remove and clean air filter
	Excessive concentration of combustible mixture	Adjusting the valve
Gearbox gear don’t mesh	Clutch anomaly	Contact KAYO Service Centre
	To bend or jam a fork.	Check and adjust the dial
	Gearbar damaged	Replace the gearshift lever
	Shift drum damaged	Replace the shift drum

	Ratchet unit damaged	Replace the ratchet unit
	Stiter position spring loose or broken	Replace the stiter position spring
Gear jump	Fork worn	Replace the fork
	Tooth worn	Check gears and replace if necessary
	Gear worn	Replace the gear
	Shift drum damaged	Replace the shift drum
	Fork shaft worn	Check the fork shaft and replace if necessary
	Speed selector position spring damaged	Replace it
clutch slip	clutch disc worn	Replace it
	Too soft or damaged clutch disc spring	Replace it
	The clutch is too small	Adjust the free travel of clutch
Motorcycle hard to turn	Cables make turning difficult	Moving cables to reduce interference
	Steering shaft nut too tight	Adjust steering shaft nut
	steering bearings worn or damaged	Check steering bearings and replace if necessary
	Steering shaft bending	Contact KAYO Service Centre
Damping too hard	The front fork level is too high	Lower forward fork level to appropriate position
	High viscosity of fork oil	Replace the front fork oil with suitable viscosity
	Front fork bent	Contact KAYO Service Centre
	Too much tire pressure	Check tire pressure and adjust to appropriate pressure

	Error in damping adjustment	Regulating shock absorption
Damping too soft	Insufficient front fork oil level	Add proper amount of prong oil **Warning**：Request for the same oil
	The viscosity of the fork oil is too low	Replace with front fork oil with suitable viscosity
	Too low tire pressure	Check if the tyre is leaking, and if the tyre is complete, pump up to the proper air pressure
	Error in damping adjustment	Regulating shock absorption
Motorcycles with abnormal noise	Improper chain adjustment	Re-adjust chain tension
	Chain worn	Replace the chain and front and rear sprocket
	rear sprocket gear worn	Replace the rear sprocket
	Insufficient lubrication of chain	Follow the manual to lubricate the chain
	Rear wheel off center	Check the spokes and adjust the center of the spokes tension if necessary
	Front fork spring soft or broken	Replace the front fork spring
	Brake disc worn	Check the brake disc and replace it if its thickness is less than the limit thickness
	Cylinder head damaged	Contact KAYO Service Centre
	Poor fastening of supports, nuts and bolts	Check and adjust the torque of the corresponding fasteners
	Wrong mounting of liner, abrasion or excessive smoothness	Re-adjust liner and replace if necessary

Motorcycle front wheel shimmy	Tyre worn	Replace the tyre
	Wheel offset	Contact KAYO Service Centre
	front wheel bearings worn	Check bearings and replace if necessary
	Vehicle misalignment	Check spokes and adjust spokes tension if necessary
	Excessive steering shaft tolerance	Check steering shaft pressure bearing clearance
	Steering shaft nut loose, handlebar not fixed	Check and re-fasten
The motorcycle inclines to one side	Chassis bent	Contact KAYO Service Centre
	Improper steering adjustment	Check and readjust
	Steering shaft bent	Contact KAYO Service Centre
	Problems with fork	Contact KAYO Service Centre
	Vehicle not aligned	Re-adjusting spoke tension. Contact KAYO Service Centre if necessary.
Brake failure	Brake disc worn	Replace the brake discs
	Insufficient brake fluid	Replenish brake fluid
	Brake fluid deterioration	Replace the brake oil
	Piston damaged	Contact KAYO Service Centre
	Brake pad worn	Check brake pad and replace it if its thickness is less than minimum friction thickness

Engine maintenance manual



Main performance parameters

Type: 1-cylinder, vertical, 4-stroke, Air cooling, Manual, overhead-cam

parameters：

a.max net power/speed：12.0（1±5%）kW /7500（1±5%）rpm

b.max torque/speed：17（1±5%）N·m /6000（1±5%）rpm

c. Idling speed： 1500（1±10%） r /min

d. min fuel-consume ratio： 354 g / kw.h

Structure parameters：

a. Cylinder bore*stroke:66.5×66.2mm

b. Displacement:223mL

c. Compression ratio: 9.2:1

d. Lubricating system:pressure lubrication, splash lubrication.

e.Valve clearance(cold): 0.03mm～0.05mm

f. Ignite type:CDI

Clutch type：

Manual Wet Multi-Plate

Gearshift method：

Constant mesh, two stage transmission , 6-speed Gearshift

Primary ratio：3.333

Gear ratio：

1 gear：3.083

2 gear：2.063

3 gear：1. 450

4 gear：1.130

5 gear：0.957

6 gear：0.815

Starting method：

Electric

Spark type： D8EA

Fuel and oil：

Gasoline brand：≥RQ90

Lubrication brand：SJ 10W/40 four stroke gasoline engine oil

Lubrication volume： 1L

Dimension：350×350×450mm

N.W.：32kg

Structure

1.Gas distribution mechanism

The timing driven sprocket on the crankshaft drives the timing driven sprocket on the camshaft to rotate the camshaft. The cam wheel drives the rocker arm with the rotation of the camshaft. The rocker arm overcomes the resistance of the valve spring and controls the valve opening.

2.Lubrication system

The engine lubrication system uses pressure and splash type compound lubrication. The oil is sucked into the oil pump from the tank through the oil filter. The pressure oil output from the oil pump is filtered by the fine filter on the right crankcase cover and then divided into three points to each lubrication point. All the way: enter the left and right crankcases to lubricate the main and countershaft bearings and main and countershaft assemblies. Second way: Enter the cylinder block, cylinder head, cylinder head cover, and lubricate the rocker arm, valve, valve spring, cam surface, etc. Three-way: from the right cover to the crank pin through the oil hole on the right end of the crank to lubricate the connecting rod big bearing and the surface of the crank pin.

Engine installation

The engine installation steps are as follows:

(1)The engine is suspended from the frame (take care to protect the appearance of the engine).

(2)Install the carburetor on the intake pipe and tighten it with nut M6 (2 pieces).

(3) Install the throttle cable and air filter, the interface should be sealed, and the clutch control cable should be installed.

⑷Install the drive chain.

⑸Attach the left rear cover, and fasten M6 × 35 (2 pieces). Pay attention to the output of the magneto motor and the display wiring harness.

⑹Install an exhaust muffler. The M8 nut and the exhaust pipe sealing ring should be installed firmly with a tightening torque of 10 to 15N.m. During installation, ensure that the exhaust port is not leaking.

Engine maintenance and adjustment

Inspection of cylinder head and cylinder block mounting bolts and nuts

Check at the first 1000km and every 5000km. When the engine is cold, use a torque wrench to tighten the bolts and nuts according to the specified torque.

torque	M8	28～32N.m
	M6	10～15N.m

Inspection of valve clearance

Check at the first 1000km and every 5000km. Excessive valve clearance will cause valve noise. Too small valve clearance will cause engine power reduction and valve damage. Check the valve clearance according to the above mileage and adjust the valve clearance according to the following procedures:

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

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

Inspection of compression pressure

Check at the first 1000km and every 5000km. The inspection steps are as follows:

Allow the engine to idle and warm up.

Remove the spark plug.

Install the pressure gauge and connector into the spark plug installation hole, and ensure that the connection is secure.

Turn the throttle handle to the fully open position.

Start the engine several times with the starter motor, and read out the pressure gauge to show the maximum

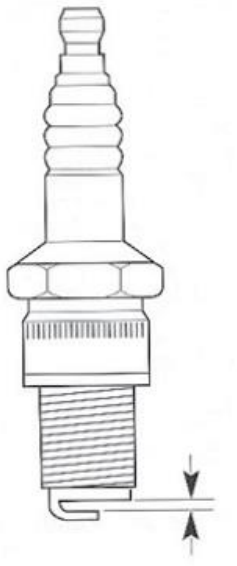
pressure value of the engine cylinder.

standard value	1200~1250Pa
Limit value	1100Pa

Low pressure indicates the following faults:

- Excessive wear on the cylinder wall.
- The piston or piston ring is worn.
- The piston ring snaps into the ring groove. The valve does not engage well with the valve seat.
- Cylinder head gasket is damaged. When the engine compression pressure is lower than the above-mentioned limit value, the engine should be reinstalled, inspected, and repaired according to the specific conditions.

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



Inspection of spark plug

The inspection is performed at the first 1000km and every 5000km, and it needs to be replaced every 10,000km. Use a wire or a needle to remove carbon deposits from the spark plug, adjust the spark plug gap to 0.6 to 0.7 mm, and measure with a feeler gauge. When removing carbon deposits, pay attention to the appearance of the spark plug and the color of the carbides.

Inspection of engine oil

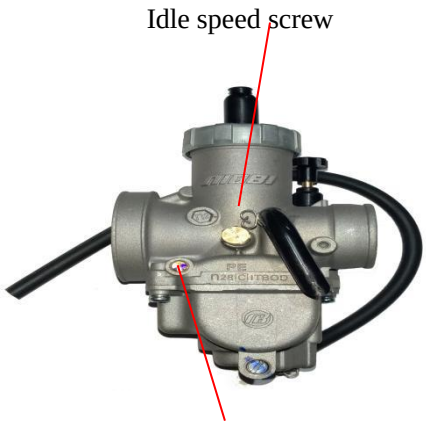
Replace every 500km and every 1000km during the running-in period. The oil should be changed in the following order when the engine is hot.

- The parking rack supports the motorcycle, warm up the engine for (5 ~ 10) minutes, and stop waiting for (5 ~ 10) minutes。
- Unscrew the oil filter cover, remove the oil filter and spring, unscrew the oil dipstick, release the oil, and clean and dry the oil filter and spring at the same time. When cleaning the oil filter, remove any debris and check whether the filter is damaged.
- Install the oil filter and spring, tighten the oil drain plug, and add new oil from the filler port. The refueling volume is 1000ml. 10W / 40 oil with SF or SJ grades classified by API.
- Start the engine and let it run at idle speed for 3-5 minutes.

Turn off the engine, wait for about 3 minutes, check the oil height through the oil dipstick, and check the oil level of the motorcycle horizontally and vertically. If the oil level is on the middle line of the oil dipstick.

Adjustment of the clutch operating system

In order to ensure the correct use of the clutch and the ease of operation, the user should make sure that the clutch is in the engaged state under normal conditions and must not be in the semi-clutch state when adjusting.



Carburetor inspection and engine idle speed adjustment

Inspections were performed at the first 1000km and 5000km. Start the engine and adjust the throttle stop screw to make the engine speed between 1400 and 1600r / min.

Run-in of the engine

It is necessary for the new car to run in all moving parts before the engine runs at full load. The future performance and reliability of the engine depend on strict and careful running in and maintenance during the initial period of use. When starting and running during the running-in period, the engine speed is not allowed Too high, don't start too fast, accelerate, to prevent the power unit from bearing impact load and affect the running-in quality. Generally after starting the engine, start at low speed and fully warm up. Drive at low speed for 1-2 km before turning to normal driving. The general running-in rules are as follows:

- The first 800km: below 3000r / min；
- 800 ～ 1600km: below 4000r / min；
- Above 1600km: below 7500r / min。

After traveling 1600km, you can drive with full throttle, but under no circumstances should the engine speed exceed 8500r / min.

During the running-in period, the throttle opening should be changed frequently, and the engine should not be allowed to run at the same speed for a long time.

Disassembly of the engine

Disassembly and assembly of cylinder head, cylinder head and camshaft

- Remove carburetor, intake pipe and muffler
- Unscrew the bolt on the left side of the cylinder head, and remove the left side cylinder head cover and the left side cylinder head seal. Remove the starter motor.
- Remove the tensioner from the cylinder block.
- Unscrew the timing driven sprocket bolt, and remove the camshaft after removing the timing driven sprocket.
- Remove the cylinder head nut, the bolt connecting the cylinder head and the case, the bolt on the cylinder head cover, and remove the cylinder head cover and cylinder head.
- Remove the cylinder head (with valve, valve spring, washer, spring seat).

Assembly should be performed in the reverse order of disassembly.

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

Disassembly and assembly of cylinder block and piston

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

Assembly should be performed in the reverse order of disassembly, and the piston ring end gap should be separated by 120 degrees and staggered.

Disassemble the left front cover

- remove the shift treadle
- remove electric start double gear shaft, double gear washer and double gear.
- remove the left front cover and box body connection bolts, remove the left front cover (with magnetic motor stator and trigger part).
- remove the left front cover paper pad, positioning pin, bridge teeth, bridge tooth shaft and gasket.
- remove the magneto fastening bolt, remove the magneto rotor (with the overrun clutch part) with special tools.
- remove the starting disc teeth.
- remove the timing chain baffle and timing chain.
- remove the gear display screws and gear display.

Assembly shall be in the opposite order of disassembly.

Disassembly and assembly of the right crankcase cover

- remove the clutch cable.
- remove the starting arm.
- remove the right crankshaft box cover and the box body connection bolt, remove the right crankshaft box cover, paper pad, positioning pin.
- remove the nut (left-handed), disc washer on the crankshaft.
- remove the clutch push rod, bearing.
- remove clutch lock nut (left-handed), butterfly washer.
- remove the center sleeve, spline washer, clutch cover and active teeth.
- remove shift arm, stop board and five star dial board.

Assembly shall be in the opposite order of disassembly.

Disassembly and assembly of the box body.

- remove the box body connecting bolts and remove the right crankshaft box body.
- remove the crank connecting rod parts, crankshaft adjustment gasket and balance shaft parts from crankcase.
- remove the fork shaft, fork, variable speed drum and main and secondary shaft sleeve.

Assembly shall be in the opposite order of disassembly.

Torque gauge for engine bolts and nuts

No.	Applicable parts	Torque value
1	Cylinder head nut M8	28-32N.m
2	Cylinder head bolts M6	10-15N.m
3	Timing sprocket bolts M6	10-15N.m
4	Clutch fastening nut	40-50N.m
5	Magnetic motor rotor bolts	65-71N.m
6	Valve bonnet	12-18N.m
7	Box bolts	10-15N.m

Engine failures and troubleshooting

For the engine to function properly, it must under the following four conditions：

1、Good fuel: There is a certain proportion of combustible mixture in the cylinder.

2、Good spark: The spark plug can emit strong spark at the specified time.

3、Full compression: enough compression pressure in the cylinder.

4、Timing of distribution: correct valve opening time.

If the engine failures, we can focus on the above four aspects, check and analyze the causes of the failure, and eliminate it.

Failure performance	Inspection methods	Inspection result	Possible causes
Engine can not start or start difficultly	Check if the fuel has flowed into the carburetor	Fuel didn't flow into the carburetor	No fuel in the tank
			Blocking from fuel tank to carburetor tubing
		Fuel flowed into the carburetor	Float assembly stuck in carburetor
			Stuck in upper vent of the fuel tank cap
	Remove the spark plug and test spark	The spark is weak or completely sparkless	Spark plug failure
			Spark plug is not clean
			Electrical ignition malfunction
			Magnetor failure
		Spark is good	Bad wiring or broken
			High voltage cable broken or short circuit
			Break or short circuit of ignition coil
			Ignition switch failure
	Test cylinder pressure	Pressure is too low	The starting mechanism slips and the engine can not be turned
		Pressure is normal	Valve clearance is too small
			Valve opening block
			Cylinder or piston ring worn
			Cylinder head gasket broken
			Improper valve timing
	Start the engine again	The engine ignited but	The chock is opened too big

		can't start	Improper adjustment of carburetor fine-tuning screw
		Engine not ignition	Air leakage in intake pipe
			wrong ignition
	Remove spark plug	Spark plug is damp	High oil level of carburetor
			The carburetor chock is shut too tightly
		Spark plug is dry	The throttle is opened too big
Engine performance is poor at low speed or idle speed	Check timing and valve clearance	incorrect	Improper adjustment of valve clearance or poor quality of rocker adjusting screw
		correct	Improper adjustment of timing
	Check the adjustment of the screw on the plunger of the carburetor	incorrect	improper adjustment
		correct	/
	Check if the grease trap is leaking	air leak	Carburetor seal ring deterioration
		air tight	Carburetor loosening
			grease sealer damaged
	Remove spark plug and make spark test	A faint spark or spark break	Spark plug failure or carbon deposit
			Electrical igniter failure
			Magnetor failure
		Spark plug is good	Spark plug cap failure
			Power supply circuit failure
Engine	Check ignition timing	incorrect	Ignition controller failure

performance is poor at high speed	and valve clearance		Improper adjustment of valve clearance
			Magnetor failure
		Valve clearance and ignition timing are all correct	/
	Disassemble the fuel tubing of the carburetor to check if the tubing is blocked	Insufficient fuel flow	Fuel in tank is running out
			Fuel pipe blockage
		Adequate flow of fuel pipes	The air hole of tank cap blocked
	Check if filters and carburetor nozzles are blocked	blocked	Block in measuring hole of chemical oil
		Not blocked	Float blocked
			Filter blocked
	Check timing of distribution	incorrect	Adjust timing of air distribution
		correct	/
	Check valve spring pressure	Not enough pressure	Valve spring worn or broken
abnormal noise of engine	Check if there is abnormal noise for valve	The valve has a noise	Too much valve clearance
			Valve worn
	Check if there is abnormal noise in the cylinder	Cylinder has a noise	Piston and cylinder block worn
			Small end holes in piston pins and links are worn
			Crank pin and connecting rod head worn
	Check if there is abnormal noise in the	there is abnormal noise in the timing chain	Camshaft worn
			Timing driven sprocket worn

	timing chain		The chain is stretched
			Timing chain automatic tensioner failure or guide wheel worn
	Check if there is abnormal noise from the main and driven gears	The main and driven gears have abnormal noise	The accuracy of gear machining is not enough
			Gear teeth are worn
			Small or large fit gap between main and driven gears