KAYO MOTO

AU200

Maintenance Manual

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Kayo Moto
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Description

This manual specificially descripted the maintenance adjustment procedures for the AU200 four-wheels vehicle (ATV), disassembly and assembly methods, inspection and maintenance points, troubleshooting methods and maintenance technical data, and detail graphic data.

Please read this manual carefully and follow the standard operating methods to effectively extend the service life of each component, improve engine performance and vehicle reliability.

The first chapter mainly introduces general work items, tools used, basic technology and maintenance parameters.

The second chapter introduces the assembly and disassembly operation of the whole vehicle plastic parts.

The third chapter introduces the regular inspection and adjustment of the whole vehicle.

The fourth chapter introduces the disassembly of the engine peripheral assembly parts.

The fifth chapter introduces the methods and notice for disassembly, inspection, maintenance and assembly of various parts of the engine.

Chapter 6 introduces vehicle chassis related information

Chapter 7 introduces the inspection and maintenance information of the vehicle signal and lighting system.

Appendix: Electrical Schematic

The contents of this manual are subject to change without further notice due to improvements in the vehicle. Maintenance should be based on the actual state of the vehicle.

Kayo Moto
Research and Development Department
2018 - 08

Contents

Unit conversion table

Item	Unit conversion
Pressure	1kgf/cm^2=98.0665kPa；1kPa=1000Pa
	1mmHg=133.322Pa=0.133322kPa
Torque	1kgf·m=9.80665N·m
Volume	1mL=1cm^3=1cc
	1L=1000cm^3
Force	1kgf=9.80665N
Length	1in=25.4mm

Warning

Please read the following explanation carefully, which emphasizes the specific meaning of the words “danger”, “warning” and “attention”, and pay special attention to the outstanding meaning of the engine when repairing it.

Danger: Be alert to high risk
Warning: Indicates caution against moderate risks
Note: Indicates concern for mild danger

However, please note that the “Danger” and “Warning” contained in this Manual are unlikely to cover all potential risk during engine use and maintenance. Therefore, in addition to the relevant provisions of “danger” and “warning”, maintenance operator must also have basic mechanical safety knowledge. If you are not sure of completing the entire maintenance operation, please consult a more experienced senior technician.

1 Maintenance information

1.1 Work precautions

Safety Precautions

1. Work clothes (such as overalls), hats, and safety boots that are suitable for the work must be worn. If necessary, wear protective glasses such as dust-proof glasses, dust masks, gloves, etc. to protect your body.
2. Since the exhaust gas contains harmful components, it is forbidden to operate the engine for a long time in a closed place and a place with poor ventilation.
3. When the engine is stopped, the temperature of the engine and muffler is still very high. Do not touch before cooling to avoid burns.
4, Battery solution (dilute sulfuric acid) is a strong corrosive agent, there will be burns, blindness when exposed to the skin, eyes. If the clothes and skin are inadvertently stained with the battery solution, rinse immediately with plenty of water and go to the hospital for treatment. The battery and battery solution should be kept strictly and must be kept in a safe place that children can't get. When the battery is charged, it will produce flammable and explosive hydrogen. If there is a fire source or an electric spark is approaching, there is a danger of explosion. Please charge in a well ventilated area.
5. Since gasoline is a flammable item, fireworks are strictly prohibited at the work site. Not only pay attention to open flames, but also pay attention to electric sparks. In addition, there is a danger of explosion of vaporized gasoline. Please choose a well-ventilated site for work.
6. Be careful not to let the rear wheel, clutch and other rotating parts and movable parts clamp the hands and clothes at any time during maintenance.
7. When two or more people work together, they must constantly greet each other to confirm safety.

Disassembly and assembly precautions

1. Parts, lubricants and greases must be recommended by Huayang brand.
2. Separate and store the parts of each system separately so that the parts can be returned to their original positions.
3. Please clean the dirt and dust on the car before maintenance.

4. The gasket, O-ring, piston pin retaining ring, split pin, etc. must be replaced with new ones after disassembly.
5. If the opening of the circlip is too large when disassembling, it will be deformed and will fall off easily after reassembly. Please do not use elastic circlips that are already loose and lose their elasticity.
6. After the parts are disassembled and inspected, clean them before the measurement and blow off the cleaning agent with compressed air. Apply lubricant to the moving surface before assembly.
7. When disassembling, check the necessary places and measure the relevant data so that it can be restored to the state before disassembly during assembly.
8. Fasteners such as bolts, nuts and screws should be pre-tensioned and then tightened according to the specified tightening torque on the diagonal according to the principle of being large to small and from the inside to the outside.
9. Rubber parts should be inspected for aging when disassembled, and replaced if necessary. In addition, since the rubber parts are not resistant to corrosion by gasoline or kerosene, try not to allow volatile oils and greases to adhere to them.
10. Apply or inject the recommended grease at the designated location in accordance with the requirements of the service manual.
11. The correct special tools should be used for disassembly and assembly.
12. The ball bearing can be rotated by the inner ring or the outer ring with the finger to confirm whether the rotation is flexible and smooth. If the disassembly method of applying force on the ball is taken during disassembly, the removed bearing should not be used any more:

Replace the bearing axial and radial clearance too large.

Rotating bearings with stuck sensation should be cleaned. After cleaning, the stuck ones should be replaced and cannot be cleaned directly.

It is originally pressed tightly with the body or shaft diameter, and the bearing should be replaced when the fit is not tight.

13. The bearings should be coated with oil or grease before assembly. Single-sided dust-proof bearings should pay attention to the installation direction when assembling. Open or double-sided dust-proof bearings should be assembled with the manufacturer's logo and dimensions facing out when assembling.
14. When installing the rectangular retaining ring, the chamfered side should face the direction of the force. Do not use the retaining ring that has lost its elasticity. After assembly, turn the rectangular retaining ring to confirm that it is firmly seated in the slot.
15. After assembly, it is necessary to check whether the fastening parts are tightened and the work is normal.
16, brake fluid and coolant will damage the painted surface, plastic parts, rubber parts, etc., do not let it adhere to such parts, in case of adhesion, immediately rinse with water.
17. The oil seal should be installed with the side marked by the manufacturer facing outward (without oil):

When assembling, be careful not to curl the oil seal lip and prevent the burr from scratching the oil seal lip.

Apply grease to the oil seal lip before assembling.

18. When installing the hose parts, insert the hose into the joint root. There is a pipe clamp to install the pipe clamp in the recessed mark of the pipe. Replace the hose without tightness during installation.

19. Do not put dust, dirt, etc. inside the engine and the hydraulic system of the brakes.

20. The gasket material attached to the joint surface of each box of the engine should be cleaned before assembly. The bumps on the contact surface must be uniformly removed by grinding with oil stone.

21, The cable type should not be excessively twisted and bent. Deformed and damaged cables can cause malfunction or breakage.

22. When assembling the cap parts, the groove must be inserted into the groove.

Engine running-in

The engine has many components for relative movement, such as pistons, piston rings, cylinder blocks, intermeshing transmission gears, etc. Therefore, in the initial stage of its use, it is necessary to carry out standard running-in, and the running-in can make the moving parts adapt to each other and correct. The working gap forms a good smooth friction surface that can withstand large loads, and the engine that has been run-in is standardized to have excellent performance and reliability.

The recommended run-in time is 10 hours and the specifications are as follows:

0 to 10 hours: Avoid continuous operation in the state of more than 1/2 throttle. Always change the speed. It is not recommended to operate for a long time under a fixed throttle position. After 1 hour of operation, cool the engine for 5 to 10 minutes; Accelerated acceleration, the throttle change should be slow, not sudden and small, do not drag the cargo during the running-in.

Note:

Maintenance during the running-in period according to the daily maintenance regulations, and find out the faults in time;

After the running-in is completed, the whole machine can be maintained after the running-in period before entering the normal driving stage.

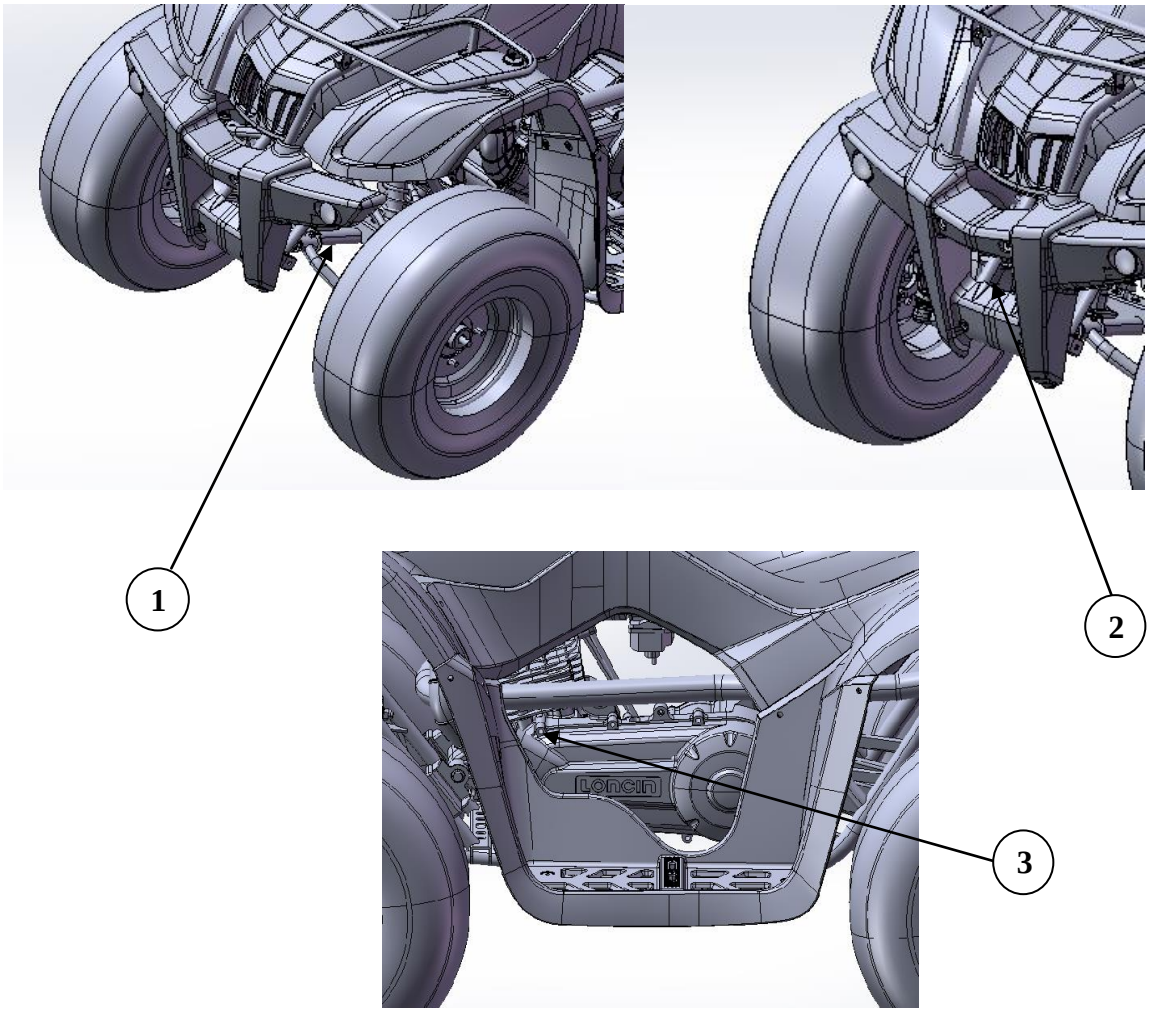
1.2 Vehicle identification number

1 VIN on chasis

2 Vehicle name plate

3 Engine number

Model	AU200
VIN	L6JACMLA5G ~
Engine number	F1702K ~



1.3 Main parameter list

Item		Parameter
Model		AU200
Length（mm）		1786
Width（mm）		955
Height（mm）		1050
Wheelbase（mm）		1120
Engine model		LC162FMC-2
Total displacement（ml）		200
Fuel type		No.92 and above gasoline
Vehicle Dry weight (kg)		180
Number of Passenger		1 person（driver）
Maximum loading weight		1 person ＋ 60kg = 120kg
Tire specifications	Front	AT23×7-10
	Rear	AT22×10-10
Minimum ground clearance		175mm
Turning circle diameter (nearest point minimum turning diameter)		3000mm
Engine	Starting method	Electric start
	Engine type	Single cylinder, four stroke, air cooling
	Air distribution	SOHC/Chain drive
	Cylinder diameter × stroke（mm）	62 ×58.4
	Compression ratio	9.7 : 1
	Lubrication method	Wet
	Oil pump type	Rotor type
	Lubricating oil filter type	Full flow filter rotary
	No. of machine oil	SAE15W-40/SF and above
	Cooling	air

Item		Parameter	
Air filter type		Sponge filter	
Throttle body	Model	Plunger throttle	
	Mixing valve diameter	30mm	
Fuel tank volume		9L	
Transmission system	Clutch type	Dry automatic clutch	
	Variable speed mode	（CVT）	
	Gear shift position	One forward gear, one neutral gear, one reverse gear	
	Shift mode / sequence	Hand operation/F—N—R	
	（CVT）Stepless speed ratio	0.95~2.8	
	Output type	Rear axle output	
	Direction of rotation of Engine output	In the forward gear, it is clockwise from the rear of the vehicle.	
Steering device	Steering angle	inside	32°
		outside	24°
Brake type		front	Hydraulic disc
		rear	Hydraulic disc
Buffer mode	Suspension method	Front wheel double rocker independent suspension, rear wheel non-independent suspension	
Frame		Steel pipe welded	

1.4 Maintenance parameter list

Lubricating device

Item		Standard	limited
Engine oil capacity	Change oil	800ml（No oil filter replaced）	—
	Change oil	900ml（ oil filter replaced）	
	Full capacity	1000ml	—
Recommended engine oil		Only use SAE 15W/40-SE，Do not substitute or mix different grades of engine oil, which will cause damage to the engine and cause an accident	
Oil pump rotor	Inner and outer rotor radial clearance	—	0.12mm
	clearance between outer rotor and pump body	—	0.12mm
	clearance between rotor surface and pump body axial	0.05~0.1	0.2mm

Intake system (05-Engine section for details)

Wheel（front and rear are the same）

Item		Standard	limited
Wheel pulsation	vertical	0.8mm	2.0mm
	horizontal	0.8mm	2.0mm
wheel	Residual trench	—	3mm
	Air pressure	35kPa（0.35kgf/cm^2）	—

Brake system

Item		Standard	limited
Front brake	Brake disc thickness	3.5mm	3.0mm
Rear brake	Brake handle stroke	2 ~ 6mm	—
	Brake disc thickness	4.0mm	3.0mm

Battery / charging device / trigger coil

Item			Standard
Magneto	model		Permanent magnet alternator
	output		Three-phase full wave
	Magneto-trigger coil resistance		150
	Magneto no-load voltage (engine is in cold state)		no
	Magneto maximum output power		180w
	Stable voltage		14.5 ±0.5V
	Trigger coil Max voltage		≥1V，200r/min；≥8.5V，2000r/min
Rectifier type			Full wave rectification
Battery	capacity		12V 7Ah
	Voltage between terminals	Fully charged	14.4V
		No Fully charged	Less than 11.8V

Ignition device

Item		Standard
Ignition method		CDI Electronic ignition
Spark plug	model	Resistive spark plug
	standard	D8RTC
	Spark plug gap	0.6~0.7mm
	Spark characteristics	Blue and white light
Ignition coil resistance	primary	0.3 Ω
	Secondary	3.8 kΩ
Max voltage	Primary Ignition coil	300~450V
	Pulse generator	20kV~30kV
Starting relay coil resistance		3.5 Ω

Light / instrument / switch

Item		Standard
fuse		10A
Light, bulb	Headlight	12V—35W
	Front turnlight	12V—10W
	Rear light / brake light	12V—2.8W
	Rear turn light	12V—2.5W
	Position light	12V—3W

Valve + cylinder head (section 05 - Engine)

Cylinder + Piston + Piston Ring + Crank Link (section 05 - Engine)

Clutch + transmission（section 05 - Engine）

1.5 Fastener tightening torque

Note:

Put some rust-proof grease to the threaded part and the joint before installing the thread

Tightening torque at the specified part - the entire vehicle part

No.	Item	Fastener code	quantity	Tightening torque（N m）
1	Suspension lower rocker bolt	GB5789 M10×1.25×80	4	45~59
2	Front and rear shock absorbing bolts	GB5787 M10×1.25×40	6	45~59
3	Front hub mounting slotted nut	GB9457 M14×1.5×H18	2	126~218
4	Steering rod ball pin slotted nut	GB9457 M10×1.25	4	33~45
5	Directional cap screw	GB70-85 M8×35	4	22~30
6	Front brake caliper body bolt	GB5789 M8×25	4	22~30
7	Front brake disc bolt	M8×1.25×20	8	22~30
8	Rear brake caliper body bolt	GB5789 M8×25	2	22-30
9	Rear brake disc mounting screw	GB70-85 M8×16	4	22~30
9	Directional mounting bolt	GB5783 M10×1.5×30	2	45~59
12	Oil cooler mounting bolt	GB5789 M6×25	4	9~12
13	Tow ball fixing plate mounting screw	GB70-85 M10×1.5×30	4	45~59
14	Rear hub mounting slotted nut	GB9457 M16×1.5	2	199~311
15	Steering column mounting slotted nut	GB9457 M12×1.25	1	110~130
16	Steering column clamp mounting bolt	GB5787 M8×60	2	22~30
17	Fuel tank front mounting bolt	GB5789 M6×25	2	9~12
18	Fuel tank rear mounting bolt	GB5789 M6×30	2	9~12
19	Horn mounting bolt	GB5787 M6×16	1	9~12
20	Negative pressure switch bolt	GB5787 M6×16	1	9~12
21	Engine mounting bolt	GB5787 M10×1.25×160	1	45~59
22	Sprocket seat mounting screws	GB70-85 M8×20	4	38~51
23	Plastic base mounting screw	GB70-85 M6×45	4	13~16
24	Crosshead self-tapping screws	GB845-85 ST4.2	—	—
25	Crosshead screw	GB828-88 M5×16	2	—
26	Crosshead flat screw	TM6	—	—
27	Rim mounting nut	GB6187-86 M10×1.25	16	45~59

Tightening torque at the specified location - engine section (section 05-Engine)

tightening torque at the unspecified location

kind	Torque N m	kind	Torque N m
5mm Bolts and nuts	4.5~6	5mm Screw	3.5~5
6mm Bolts and nuts	8~12	6mm Screw	7~11
8mm Bolts and nuts	18~25	6mm Convex bolt	10~14
10mm Bolts and nuts	30~40	8mm Convex bolt、Screw	20~30
12mm Bolts and nuts	35~50	10mm Convex bolt、Screw	30~40

Engine repair tool (section 05-Engine)

Engine-specific tools (section 05-Engine)

1.6 Lubricating grease, sealant

location	note	Kind of grease
Steering bearing		Light lithium soap grease
Throttle cable connection		
Rocker arm		
Directional column inner circumference		
Cushion lock active part		
Shifting mechanism active part		

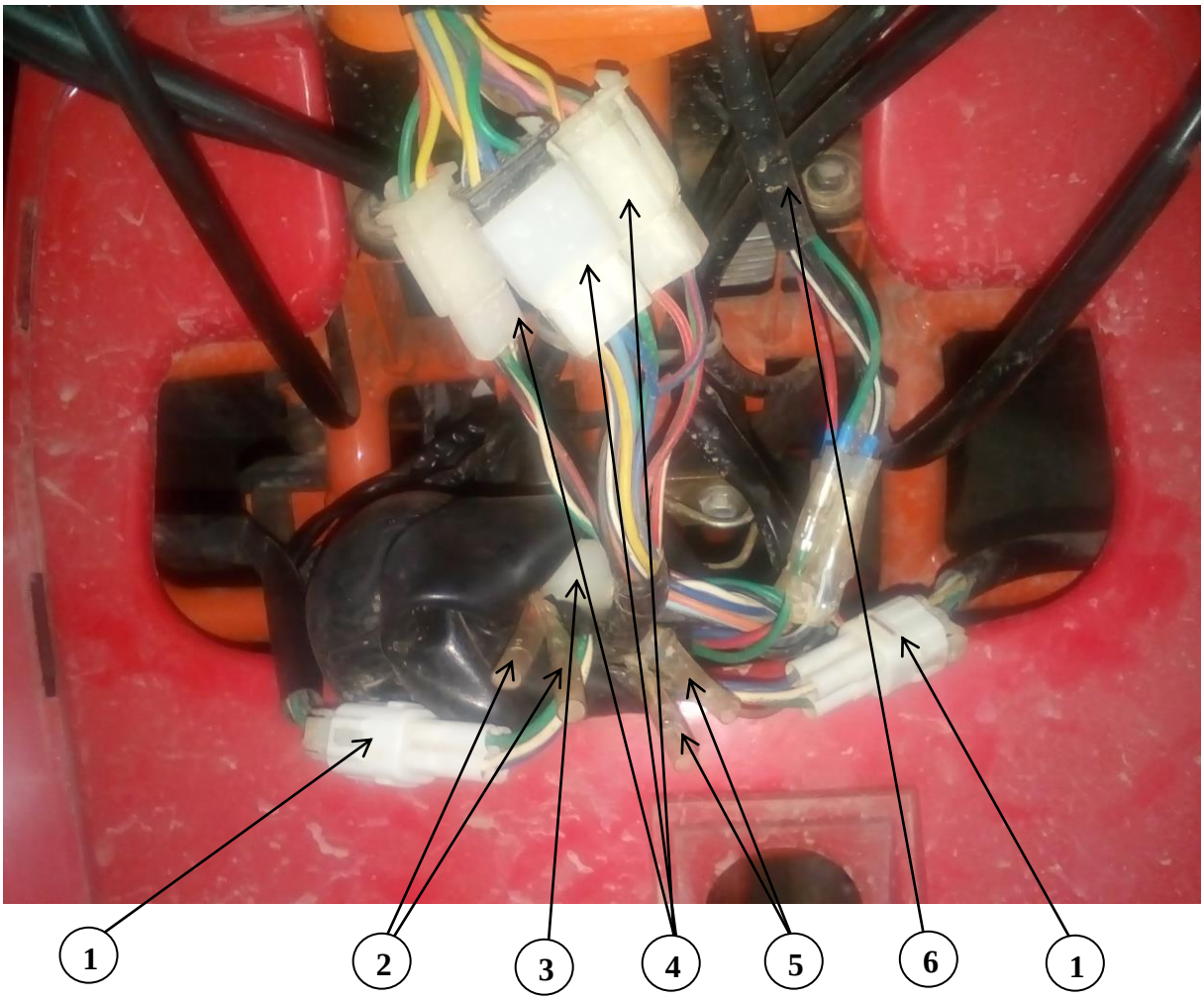
Cables, bearings, and manipulating lubrication parts

location	note	Kind of grease
Steering shaft spherical bushing	lubrication	Automotive universal lithium grease GB/T5671
Rear wheel axle supporter		
Front and rear shock absorber joints		
Throttle handle shaft and cable connector		
Left and right brake handle shaft		
Parking cable connection		

Engine running materials and installation accessories（section 05-Engine）

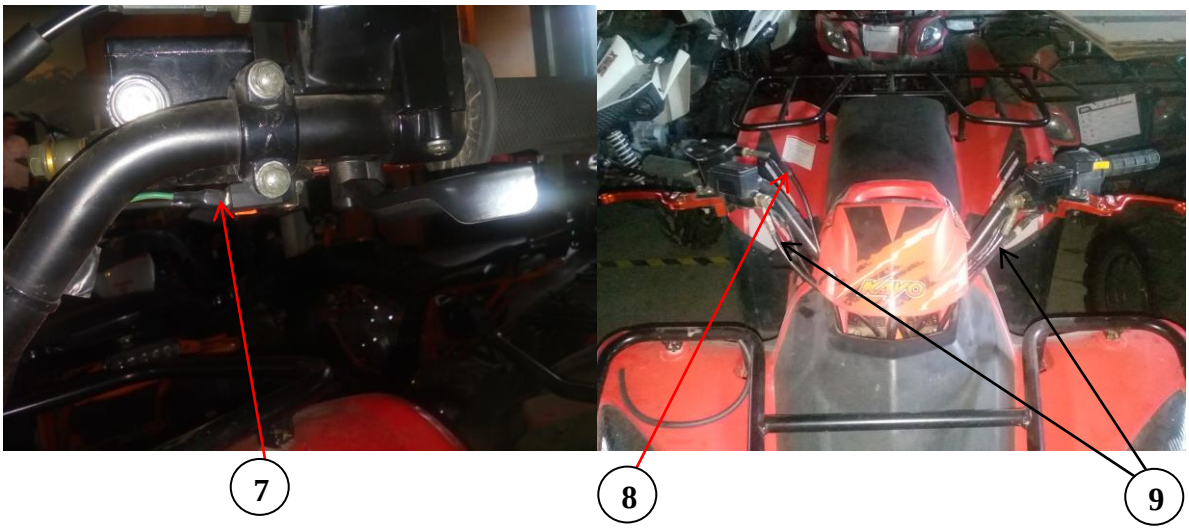
Engine operating materials include lubricating oil (oil), grease (butter) and coolant; installation accessories include flat sealant, thread locker, etc.

1.7 Cable, hose, cable wiring diagram

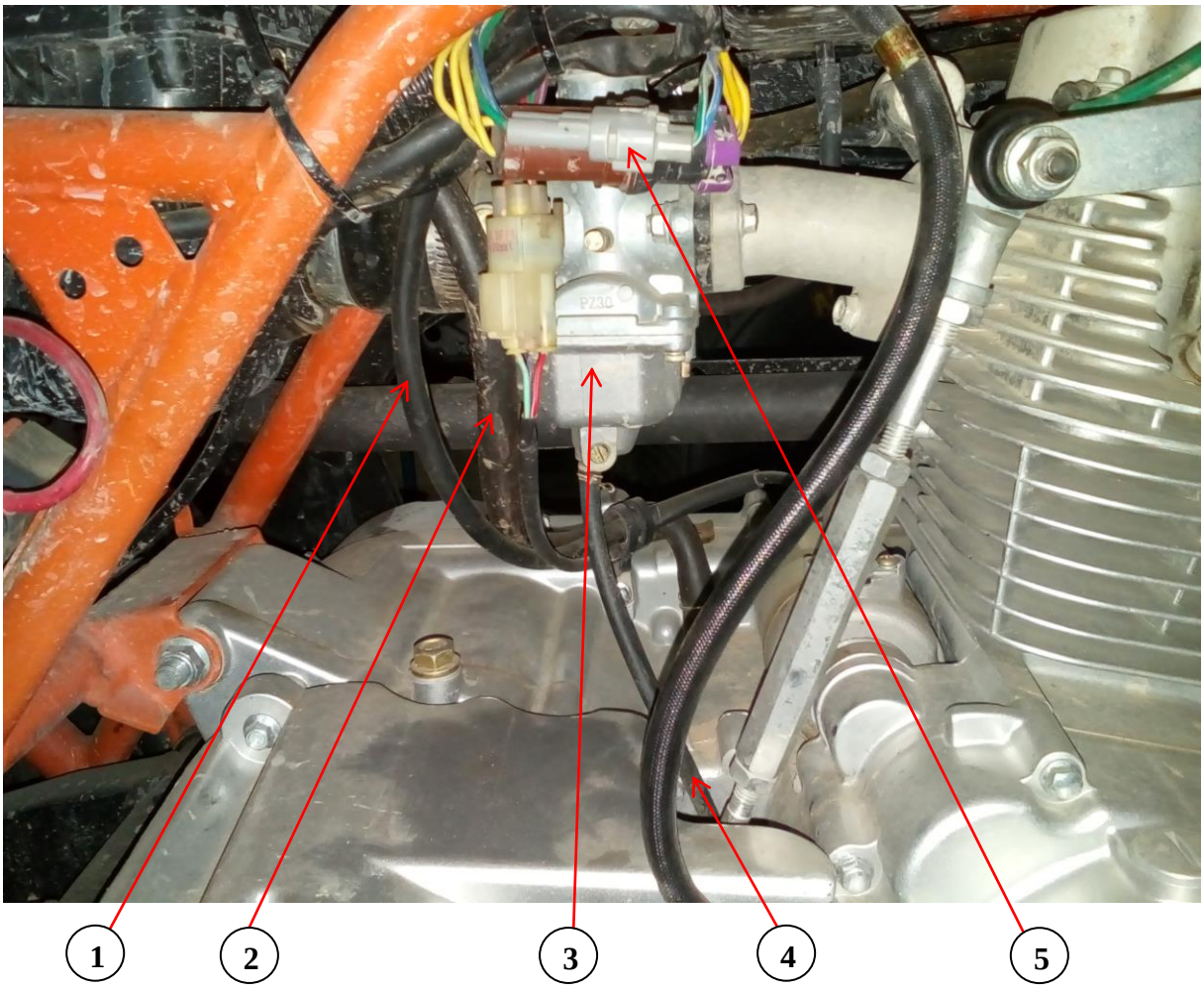


1. Headlight connector 2. Left turn signal connector 3. Left hand multi-function switch connector 4. Instrument connector 5, right turn signal connector 6, electric door lock switch connector

Note: The front panel must be removed before inspection of the above components. For specific disassembly,check Chapter 2 Body Covers.



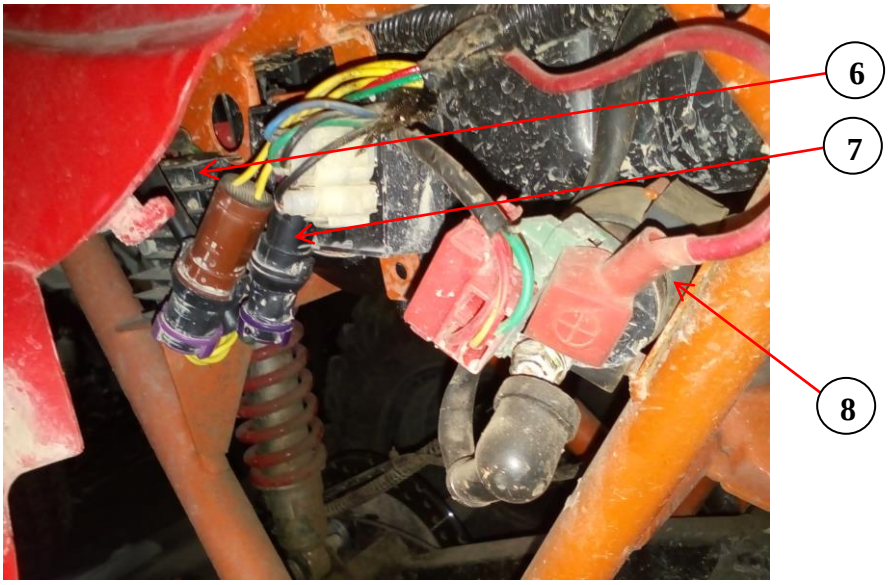
7, brake sensor (left one and right one) 8, throttle line 9, brake hose



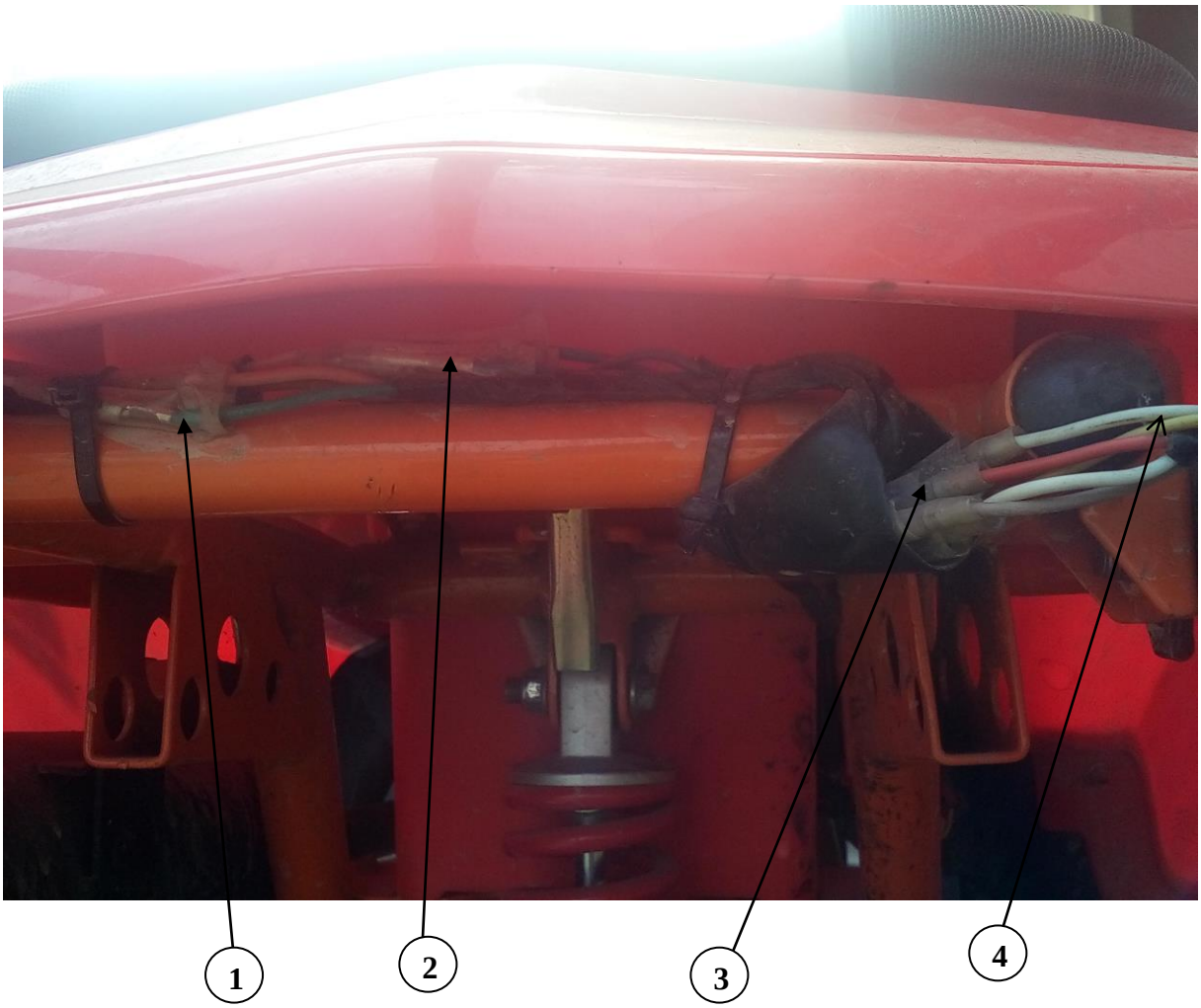
1. Motor line 2. Crankcase exhaust pipe 3. Carburetor 4. Carburetor drain pipe 5. Magnetic motor trigger connector

Note: The right foot pedal and the right middle guard must be removed before inspection and maintenance of the above components.

For specific disassembly,check Chapter 2 Body Covers.



6、Voltage regulator rectifier 7, charging connector 8, relay



1、Brake light patch cord 2. Left turn signal patch cord 3. Brake light contact wire 4. Right turn signal patch cord

2 Vehicle Body Covers

2.1 Maintenance information

Precautions

When the cover on the vehicle is pasted or riveted, the warning cover shall be correctly and completely filled with the corresponding mark when it is replaced.

This chapter describes the disassembly and assembly sequence of the body cover. When the internal parts of the vehicle are to be removed, the relevant cover parts can be removed. Refer to this chapter.

This chapter describes the disassembly and assembly operations of shelves, seat cushions, and exterior parts.

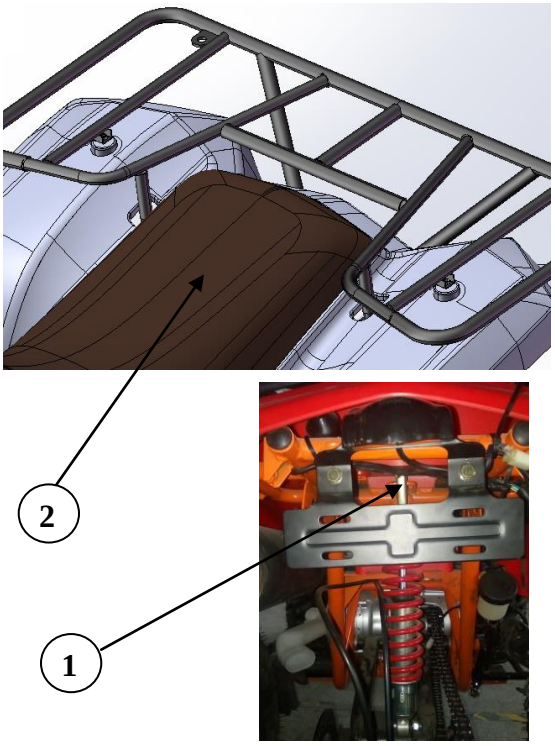
Pipes and cables should be passed from the correct position according to the wiring diagrams of cables, pipes and cables.

2.2 Mounting torque

M8 bolt	21（2.1）	torque N m(kgf m)
M6 bolt	10（1.0）	troque N m(kgf m)
M5 bolt	5（0.5）	troque N m(kgf m)
Self-tapping screw	4（0.4）	torque N m(kgf m)

2.3 Disassembly of seat cushion and front/ rear shelves

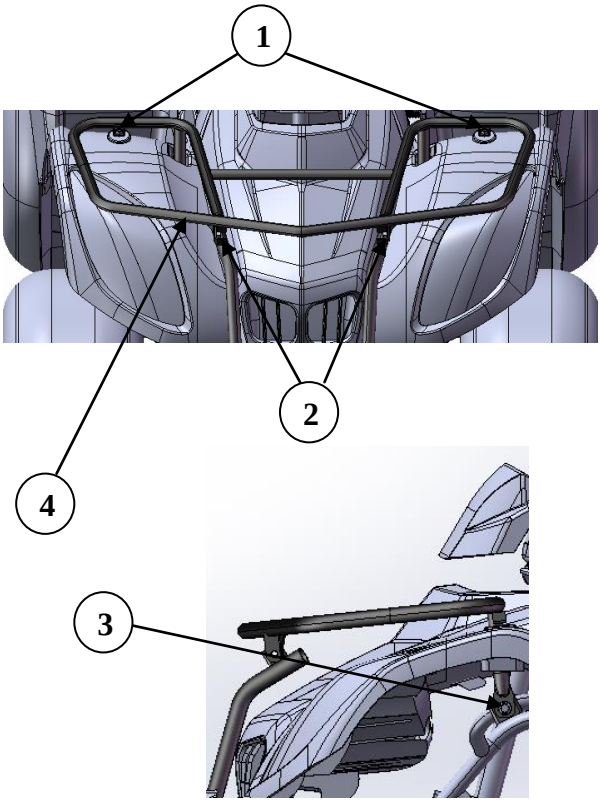
2.3.1 Cushion



Disassembly
Open the seat cushion hook upwards
Lift the back of the seat cushion and pull the seat cushion back
Remove the seat cushion

Assembly
In reverse order of reverse disassembly, reverse direction
Check if the seat cushion is in place, secure, etc. after installation

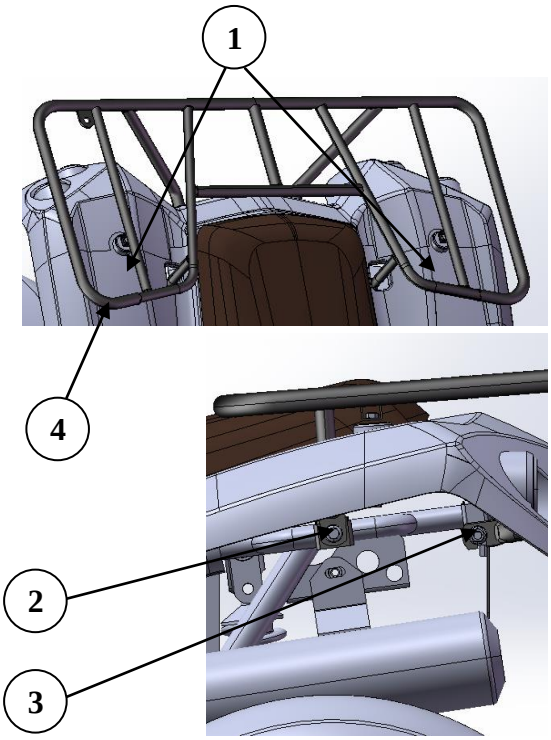
2.3.2 Front shelf



Disassembly
Remove the front shelf mounting screws 1 (one left and one right)
Remove the mounting bolt 2
Remove the mounting bolt 3
Remove the front shelf 4

Assembly
Installation in reverse order of disassembly

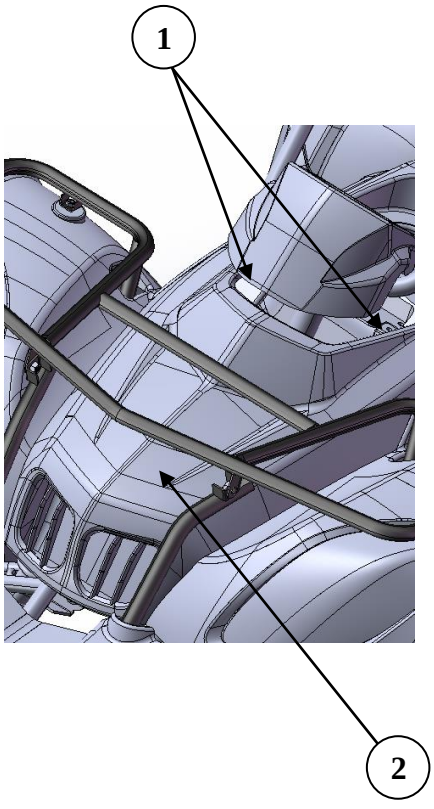
2.3.3 Rear shelf



Disassembly
Remove the rear shelf mounting screws 1
Remove the mounting bolt 2
Remove the mounting bolt 3
Remove the rear shelf 4

Assembly
Installation in reverse order of disassembly

2.4 Disassembly of front panel, instrument front cover, instrument panel, gear shift head assembly and shifting decorative cover

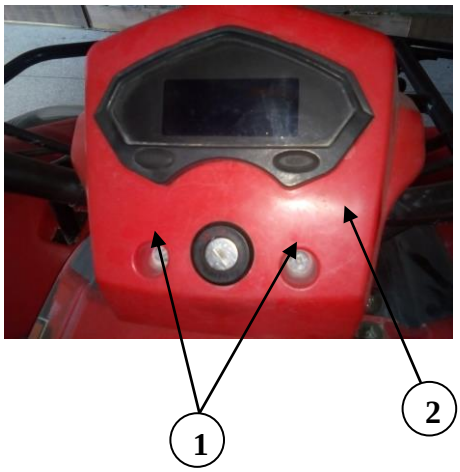


2.4.1front cover

Disassembly
Remove the front shelf (→ 2.3.2)
Remove the 2 mounting screws1
Remove the front panel2

Assembly
In reverse order of reverse disassembly, reverse direction

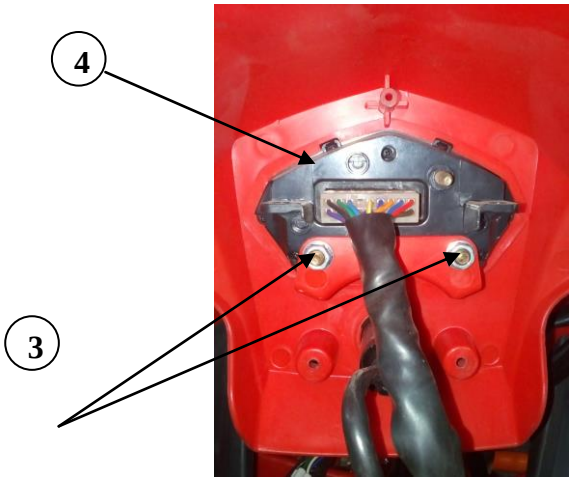
2.4.2 Instrument front cover



Disassembly
remove the 2 screws 1
Remove the front cover of the instrument 2

Assembly
In reverse order of reverse disassembly, reverse direction

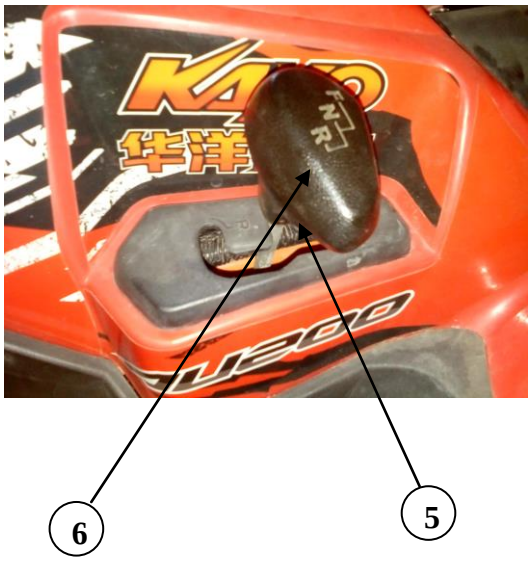
2.4.3 Instrument panel



Disassembly
Remove the front cover of the instrument (→ 2.4.2)
remove the 2 screws 3
Remove the instrument panel 4

Assembly
In reverse order of reverse disassembly, reverse direction

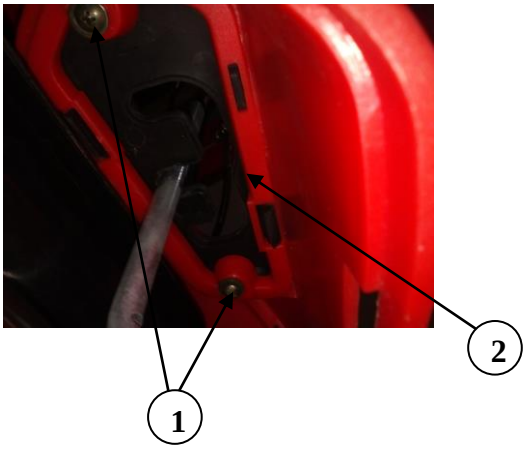
2.4.4 Gear shift head assembly



Disassembly
Loosen the lock screw 5
Counterclockwise rotation gear shifter combination 6
Unscrew the shift head combination 6
Remove the gear head assembly

Assembly
In reverse order of reverse disassembly, reverse direction

2.4.5 Shift decorative cover

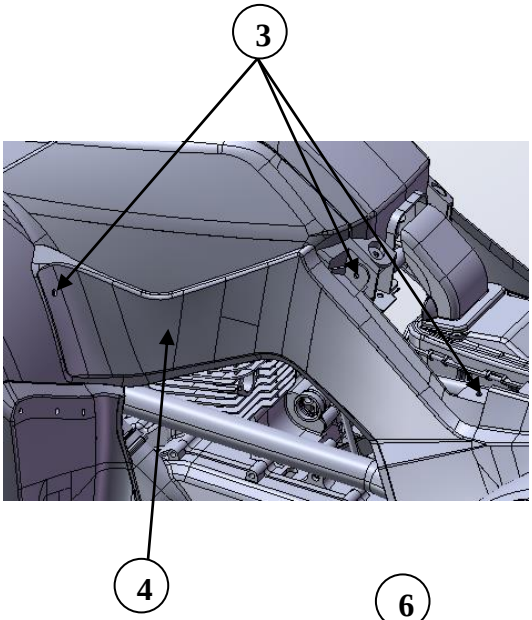


Disassembly
Remove the gear shifter combination (→ 2.4.4)
Remove 2 mounting screws 1
Remove the shift cover 2

Assembly
In reverse order of reverse disassembly, reverse direction

2.5 Disassembly of left middle guard, right middle guard, left pedal and right pedal

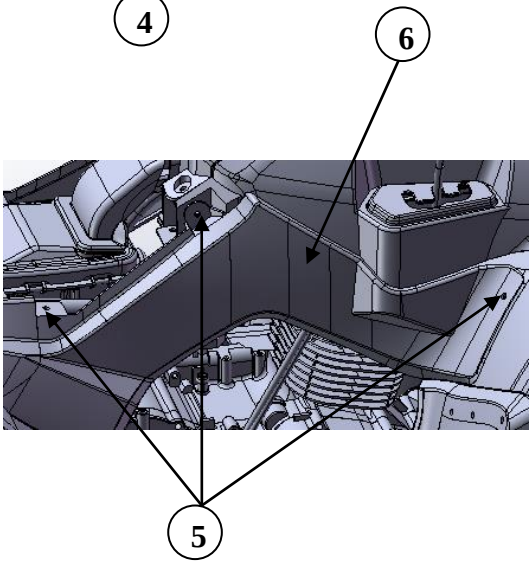
2.5.1 left middle guard



Disassembly
Remove the seat cushion (→ 2.3.1)
Remove the screw 3
Remove the left decorative panel 4 up

Assembly
In reverse order of reverse disassembly, reverse direction

2.5.2 Right middle guard



Disassembly
Remove the seat cushion (→ 2.3.1)
Remove the screw 5
Remove the left decorative panel 6 up

Assembly
In reverse order of reverse disassembly, reverse direction

2.5.3 Left foot pedal

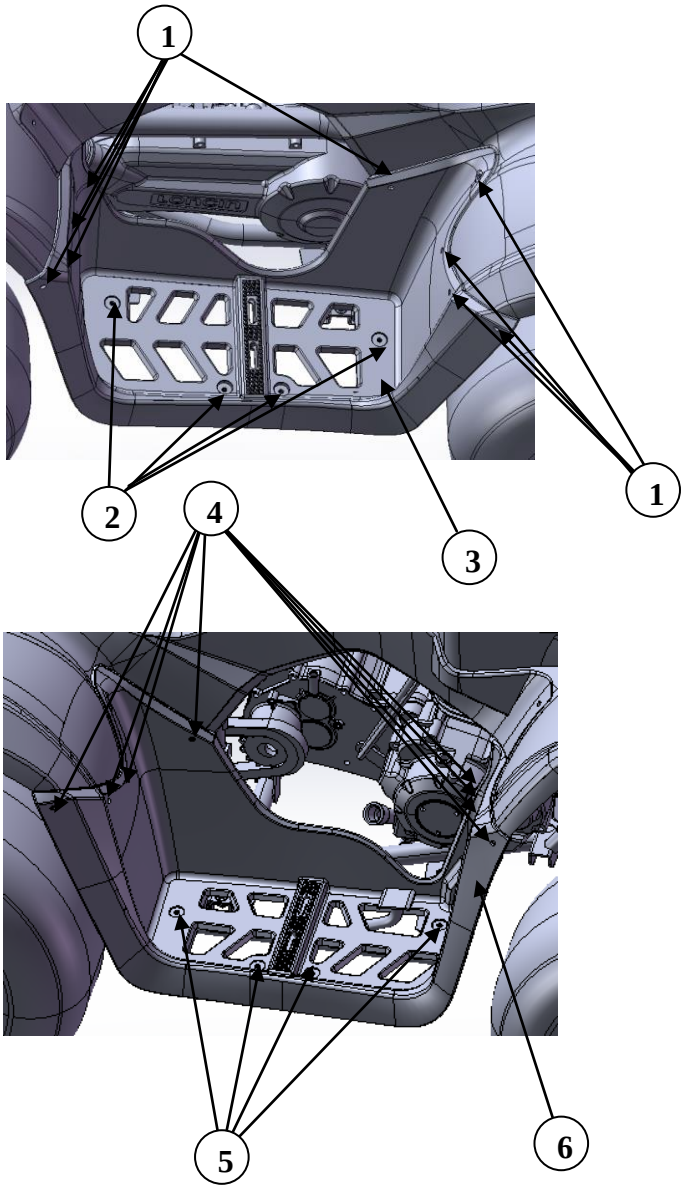
Disassembly
Remove the left middle guard (→ 2.5.1)
Remove the fastening screw 1
Remove the fixing screws 2
Remove the left foot pedal 3 from the bottom to the top

Assembly
In reverse order of reverse disassembly, reverse direction

2.5.4 Right foot pedal

Disassembly
Remove the right middle guard (→ 2.5.2)
Remove the fastening screw 4
Remove the fixing screws 5
Remove the right foot pedal 6 from the bottom to the top

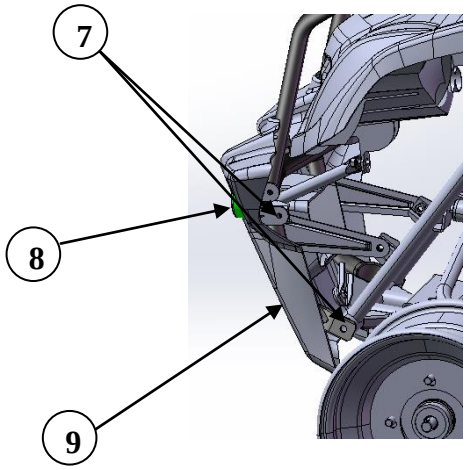
Assembly
In reverse order of reverse disassembly, reverse direction



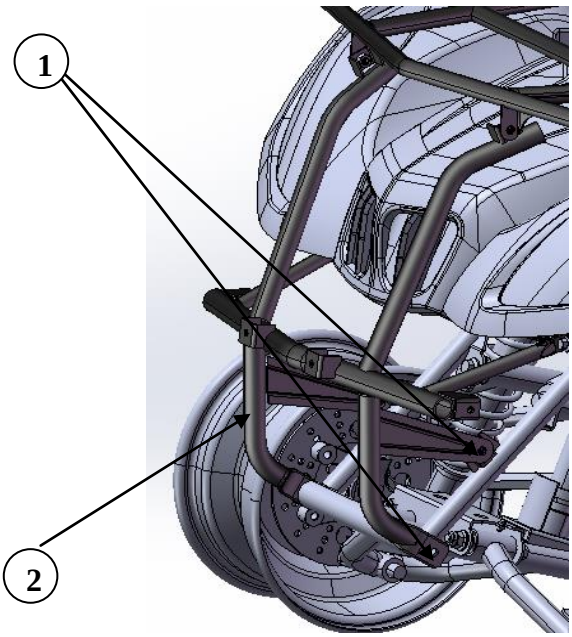
2.6 Disassembly and assembly of front ventilating panels and bumpers

2.6.1 Front ventilation panel

Disassembly
Remove the mounting bolts 7 (2 on each side)
Remove the front turn signal 8 (one on each side)
Remove the front ventilation panel 9

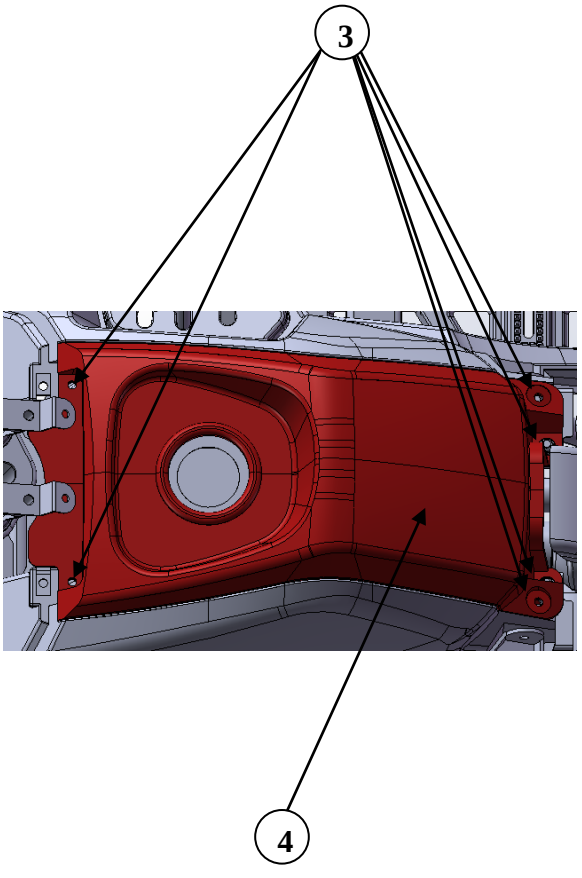


2.6.1 bumper



Disassembly
Remove the front shelf (→ 2.3.2)
Remove the mounting bolts 1 (two on each side)
Remove the bumper 2
Assembly
In reverse order of reverse disassembly, reverse direction

2.7 Disassembly of fuel tank cover, front assembly plate and rear assembly plate



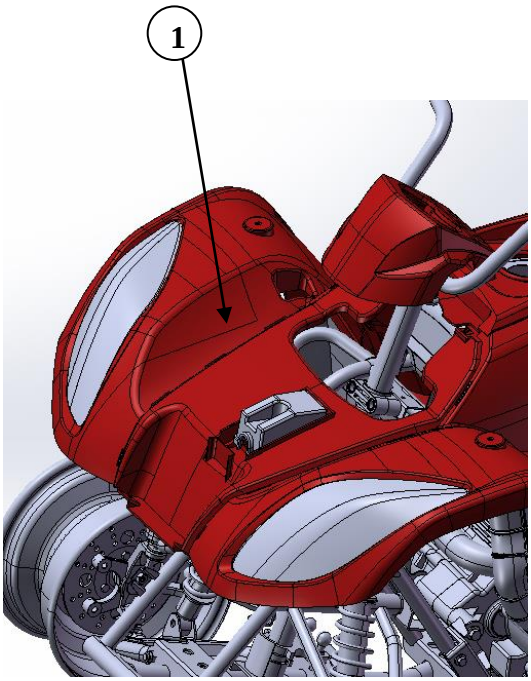
2.7.1 Fuel tank cover

Disassembly
Remove the mounting screws 3
Remove the fuel tank cap
Remove the fuel tank cover 4

Assembly
In reverse order of disassembly

2.7.2 Front assembly board

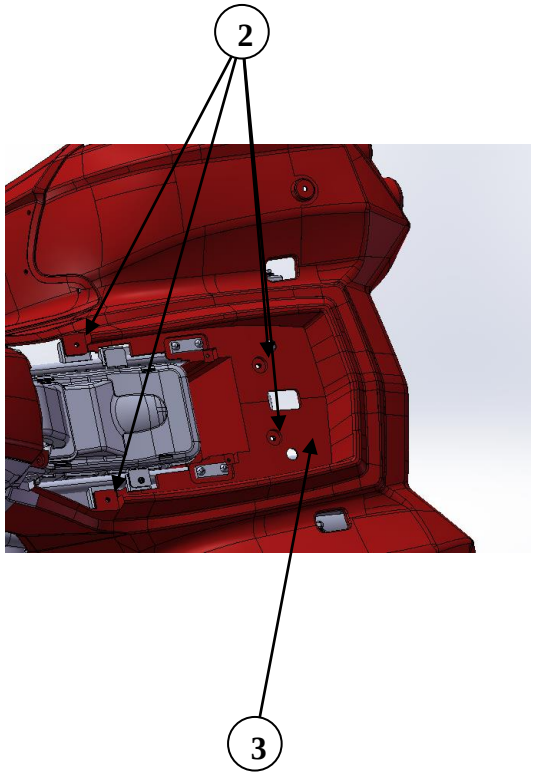
Disassembly
Remove the front cover of the instrument (→ 2.4.2)
Remove the front panel (→ 2.4.1)
Remove the left middle guard (→ 2.5.1)
Remove the right middle guard (→ 2.5.2)
Remove the left foot pedal (→ 2.5.3)
Remove the right foot pedal (→ 2.5.4)
Remove the fuel tank cover (→ 2.7.1)
Remove the front assembly board 1



Assembly
In reverse order of disassembly
note
Remove the cables on the front assembly board before disassembly, and check the cables and connectors after installation to prevent misconnection.

2.7.3 Rear assembly board

Disassembly
Remove the left middle guard (→ 2.5.1)
Remove the right middle guard (→ 2.5.2)
Remove the left foot pedal (→ 2.5.3)
Remove the right foot pedal (→ 2.5.4)
Remove the fuel tank cover (→ 2.7.1)
Remove the mounting screws 2
Remove the rear assembly board 3
Assembly
In reverse order of disassembly
note
Before disassembling, disconnect the cable of the taillight and the rear turn signal, and when removing the battery, turn off the ignition switch, first remove the positive battery, and install the battery negative first. Check the installed electrical appliances, cables, etc. after installation.



3 Regular inspection and adjustment

Maintenance information

Precautions

Note

- Because the exhaust gas contains toxic components such as carbon monoxide (CO), do not operate the engine for a long time in a closed place or in a poorly ventilated place.
- When the engine is just stopped, the temperature of the muffler and the engine is still very high. If it comes into contact with the skin, it will burn. If you must perform maintenance when the engine is just stopped, you must wear long-sleeved overalls and gloves to work.
- Gasoline is very easy to catch fire, and fireworks are strictly prohibited in the workplace. Not only pay attention to open flames, but also pay special attention to electrical sparks. In addition, due to the danger of explosion of vaporized gasoline, the operation should be carried out in a well ventilated area.

Note

Don't let the rotating parts such as the drive system grip the hands and clothes.

Note

The vehicle must be placed in a flat, stable place on the ground.

3.1 Determination of maintenance period

Engine maintenance is a regular periodic work. It is very important to maintain the engine at regular intervals. Standard maintenance can ensure excellent engine performance, reliable operation, and economical and durable. The following is the LXCVT200 engine. Maintenance schedule:

Note: The following table is designed according to normal use conditions. Under severe conditions, the engine maintenance cycle should be shortened accordingly.

Maintenance item	Item	odometer km				
	period	1000km	4000km	8000km	12000km	note
Fuel system access			I	I	I	
Fuel filter		C	C	C	C	
Carburetor choke						
Air filter element	note ①					
Spark plug		I	I	I	I	
Valve clearance		I	I	I	I	
Engine oil	Every year	R	R	R	R	
Lubricating oil filter	Every year			C		
clutch		I	I	I	I	
Carburetor idle speed		I	I	I	I	

Vehicles should be repaired according to the specified repair time. The meanings of the various codes in the table are as follows:

C: cleaning

R: Replace

A: Adjustment

L: Lubrication

I: check

Note ①: When driving in dusty places, it should be cleaned frequently.

3.2 Inspection

Inspection and repair project			period			Benchmark
Check parts		Check item	daily	Half a year	One year	
steering device	steering wheel	Operational flexibility	○			
	steering system	damage	○			
		Steering system installation status	○			
		Sloshing of the pin	○			
Braking device	Brake pedal	Pedal stroke	○	○		
		Braking effect	○	○		
	Connecting rod and tubing	looseness and damage	○		○	
	Hydraulic brake and brake disc	Front/rear Brake fluid volume	○	○		Brake fluid should be at the lower limit (LOWER) or more
		wear and damage of Brake disc	○	○		If the working disc thickness of the current brake disc is less than 3mm and the thickness of the working disc of the rear brake disc is less than 3mm, it should be replaced in time.
	Brake pad	wear and damage of Brake pad	○	○		Minimum brake pad (friction plate) thickness ≥ 1mm; replace when less than 1mm
Travel device	wheel	Tire pressure	○	○		Front wheel：35kPa（0.35kgf/ cm^2）(5PSI) Rear wheel： 35kPa（0.35kgf/ cm^2）(5PSI)
		Tire cracking and damage	○		○	
		Tire groove depth and abnormal wear	○		○	If there is no wear indication on the tire surface, the residual groove depth should be no less than 3mm.
		Loose of wheel nuts and wheel axles	○	○		
		Shaking of the front wheel bearing	○		○	
		Shaking of the rear	○		○	

		wheel bearing				
Buffer device	Suspension arm	Shaking of the connecting part and damage of the rocker arm	○		○	
	Shock absorber	Oil spill and damage	○		○	
		function			○	
transmission	Front bridge	Transmission, lubrication	○		○	
	Rear bridge	Transmission, lubrication	○		○	
	Gearbox	Oil leakage and oil quantity	○		○	Loosen the oil filler bolt port, the oil volume should be to the top

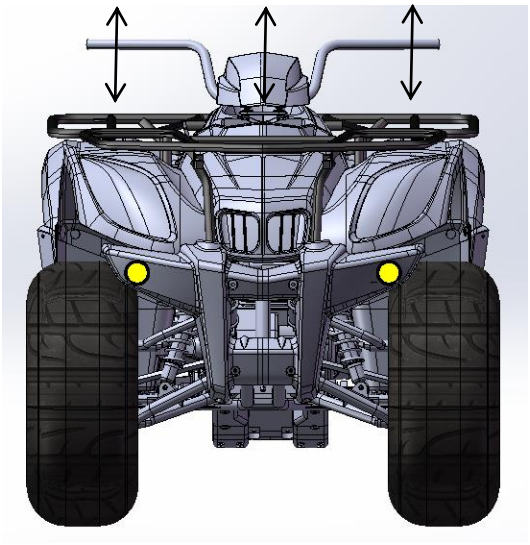
Inspection and repair project			period			Benchmark
Check parts		Check item	daily	Half a year	One year	
transmission	Output shaft (transmission shaft)	Loose connection	○	○		
		Splashing of the spline			○	
Electrical installation	Ignition device	Status of the spark plug		○		Spark plug clearance：0.6mm~0.7mm
		Ignition period		○		
	Battery	Terminal connection status			○	
	Electrical circuit	Looseness and damage at the joint			○	
Fuel device		Fuel leak		○		
		Throttle status			○	Throttle handle clearance：2 ~ 6mm
Lighting device and turn indicator		Function	○	○		
Alarm and locking device		Function			○	
meter		Function			○	
Exhaust pipe and muffler		Whether the installation is loose or damaged			○	
		Muffler function			○	
frame		Looseness and damage			○	
other		Lubricating grease state of each part of the frame			○	
The part that can confirm the abnormality during operation		Confirm whether there is any abnormality in the relevant part	○			

3.3 Direction column, brake system

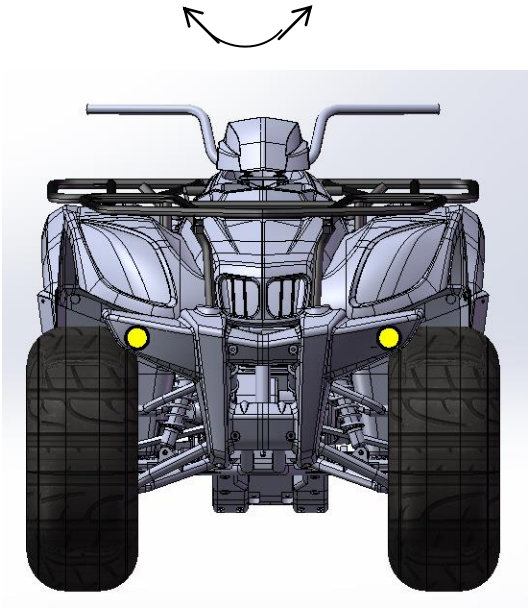
Place the car in a horizontal position, and grasp the direction to check the presence or absence of shaking in the direction shown.

If you feel shaking, check if the steering column is shaking or other shaking and perform the corresponding maintenance.

If the direction column is shaking, increase the locking force of the direction column lock nut or disassemble the direction column for repair.



Place the car in a horizontal position and slowly turn it to the left and right to confirm whether it can be rotated smoothly and flexibly. If there is any obstruction in some places, check the main cable assembly and the cable type for interference. If the position of the end of the steering rod is not observed, check for interference and whether the steering bearing is damaged.
Note: : It must be confirmed that the steering is flexible, otherwise the steering handle will be accidentally unable to control the direction.



The clearance of the front brake handle:
Operate the front brake lever to check the brake effect and the action of the handle.
Check the clearance at the front brake handle.

Front brake pump combination
<liquid quantity>

Check the amount of brake fluid

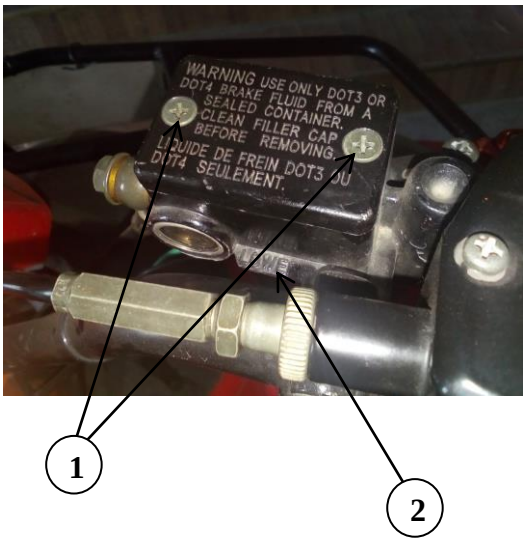
Check the brake fluid volume through the observation hole 4. When the brake fluid volume decreases to the vicinity of the lower limit line 2 (LOWER), the vehicle will not be able to continue to use at this time, and it is necessary to check the brake pump, the brake pipe and the leakage at each joint. If the inspection is normal, you need to check the wear of the brake disc and the brake pads. Replace if it is damaged or worn below the limit of use.

Inspection of these items is also required before each use of the vehicle.

Remove the 2 vent screws 1

Remove the oil cup cover 3

Add the brake fluid recommended by Huayang until the upper limit line



Note

Do not mix dust and water when replenishing brake fluid

To prevent chemical changes, use a specified grade of brake fluid.

Because the brake fluid will damage the plastic surface and rubber surface, please do not splash it on these parts.

Turn the direction handle slightly to the left and right, and remove the oil cup cover after the brake pump combination is in the horizontal state.

1, exhaust screw
2, the lower limit line
3, oil cup cover
4, observation hole

Front brake disc, brake pad <wearing of brake pads>
Check the wear of the brake pads
If the wear has reached the wear limit, replace the brake pads

Note
Brake pads need to be replaced completely

Brake disc inspection and replacement
Check the sliding surface of the brake disc 1 for wear and damage. If the current brake disc thickness is ≤3.0mm, replace the brake.

Front brake disc limit thickness for use：3.0mm

Check the minimum thickness of the brake lining 2
Minimum friction plate thickness ≥ 1 mm
If it is less than the minimum friction plate thickness, please replace it with a new brake friction plate.
Check the brake lining for damage or cracks. If there is any damage or crack, please replace it with a new brake lining.

Note: Please check the position of the brake fluid level frequently, keep the liquid level in a safe position, check the oil circuit and connection points for damage, if any, please replace it in time, check the main pump / caliper for damage, if any, please replace it in time.
Note: Do not open the brake fluid cup for a long tim

Oil change <replacement of brake fluid>
Brake fluid is replaced once a year

Rear brake pump combination <liquid volume>

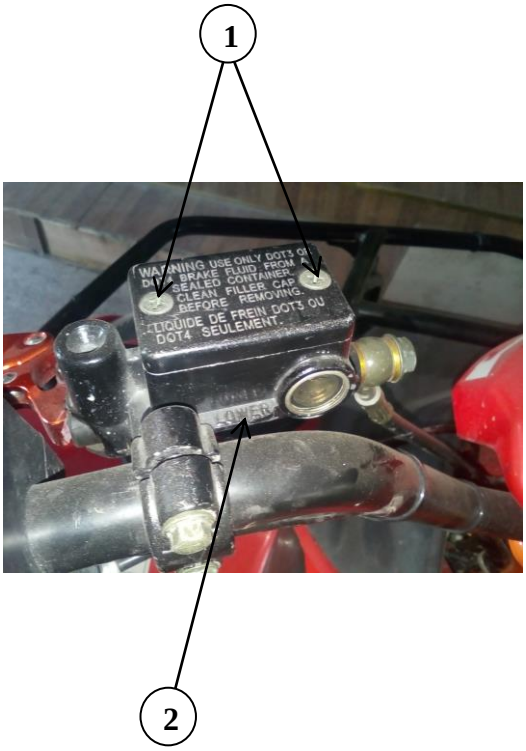
Check the amount of brake fluid

Check the brake fluid volume through the observation hole 4. When the brake fluid volume decreases to the vicinity of the lower limit line 2 (LOWER), the vehicle will not be able to continue to use at this time, and it is necessary to check the brake pump, the brake pipe and the leakage at each joint. If the inspection is normal, you need to check the wear of the brake disc and the brake pads. Replace if it is damaged or worn below the limit of use. Inspection of these items is also required before each use of the vehicle.

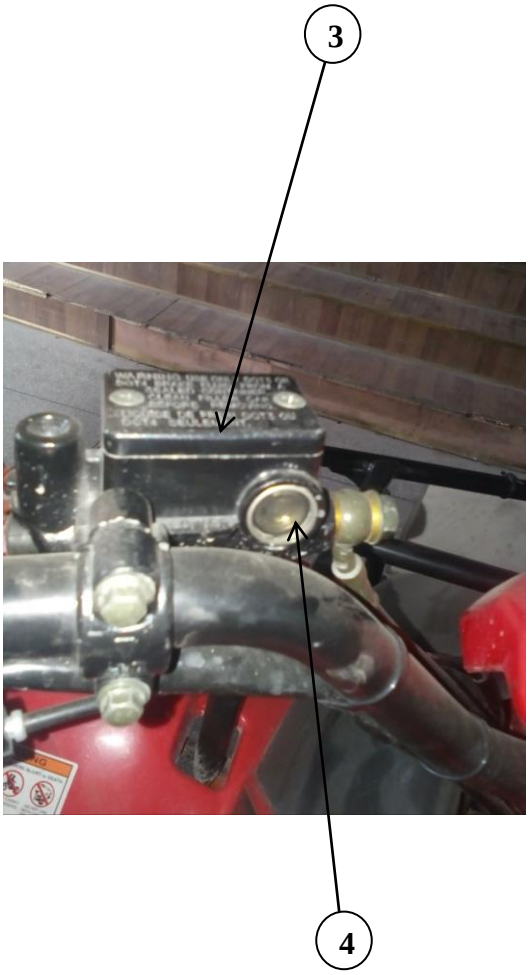
Remove the 2 vent screws of the oil cup cover 1

Remove the oil cup cover 3

Add the brake fluid recommended by Huayang until the upper limit line



- Do not mix dust and water when replenishing brake fluid.
- To prevent chemical changes, use a specified grade of brake fluid
- Because the brake fluid will damage the plastic and rubber surfaces, do not spill them on these parts.



Note: Please check the brake fluid level frequently, keep the liquid level in a safe position, check the oil circuit and
Check the connection point for damage. If it is available, please replace it in time. Check the main pump/caliper for damage. If it is, please replace it in time.
Note: Do not open the brake fluid cup for a long time.

Rear brake disc, brake pad <wearing of brake pads>
Check the wear of the brake pads
If the wear has reached the wear limit, replace the brake pads

note
Brake pads need to be replaced completely

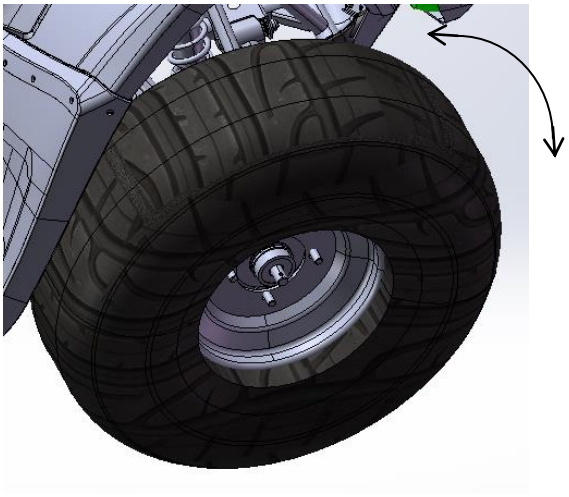
Brake disc inspection and replacement
Check the sliding surface of the brake disc 1 for wear and damage. If the current brake disc thickness is ≤3.0mm, replace the brake disc.

Rear brake disc limit thickness for use: 3.0mm

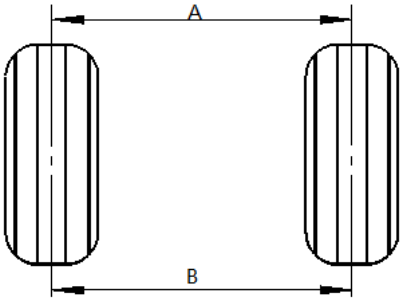
Check the minimum thickness of the brake lining 2
Minimum friction plate thickness ≥ 1 mm
If it is less than the minimum friction plate thickness, please replace it with a new brake friction plate.
Check the brake lining for damage or cracks. If there is any damage or crack, please replace it with a new brake lining.

Oil change <replacement of brake fluid>
Brake fluid is replaced once a year

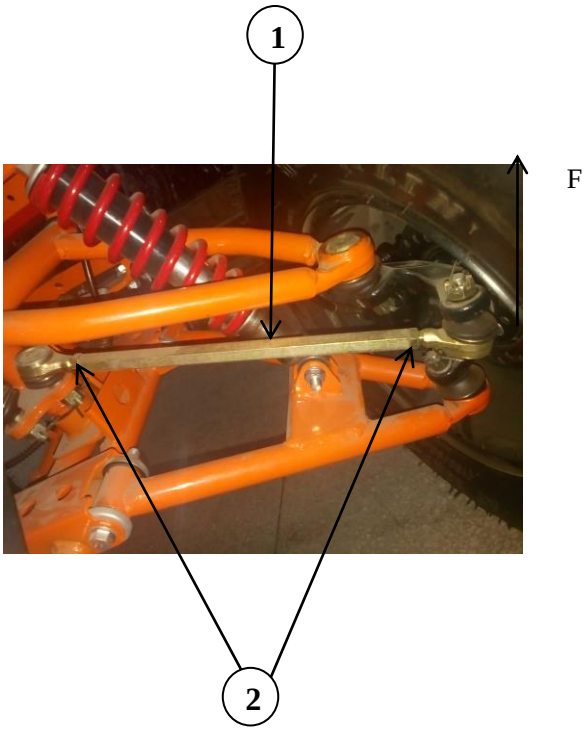
3.4 wheel



Lift the front wheel with the tool in the horizontal position, make sure that the car body has no force on the wheel, shake the front wheel from side to side, check whether the front wheel connection is firm, check for shaking.
If there is any shaking, check and tighten the rocker arm, axle, rim bolt, nut.
If there is still shaking, check and replace: bearing, rocker buffer sleeve, ball pin.



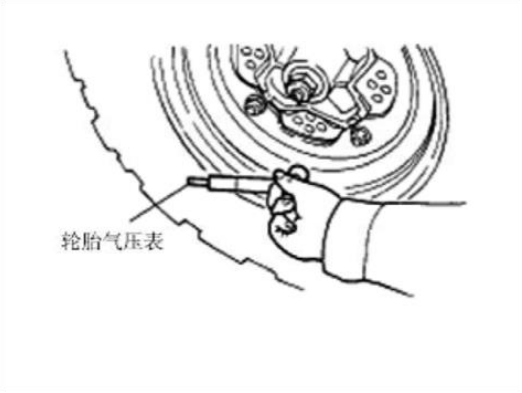
Front wheel size
The vehicle body is placed in a horizontal position, and the toe size of the wheel is measured; the front of the wheel with respect to the forward direction of the vehicle is: A, and the rear of the wheel is: B
Toe size: A-B=1.5 ~ 2.5mm
F is the way forward



If not in this range, adjust the lock nut2 of the steering rod 1
Note: After the front beam size is adjusted, drive the vehicle slowly and make sure that the handlebar can correctly control the direction of the motor body.

Tire pressure

Check the tire pressure using a barometer



Note

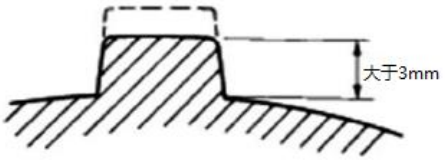
The tire pressure is checked while the tire is cool. If it is used in a state where the tire air pressure is not suitable, it will deteriorate the operation and ride comfort, and cause adverse effects such as eccentric wear of the tire.

Specified air pressure / tire

	Front tire	Rear tire
Air pressure	35kPa（0 .35kgf/cm²）	35kPa（0.35kgf/cm²）
size	See Chapter 1	See Chapter 1

Tire pattern

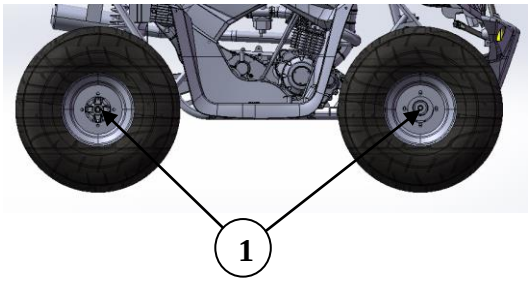
Check the tread pattern and replace the new tire once the pattern height is less than 3mm



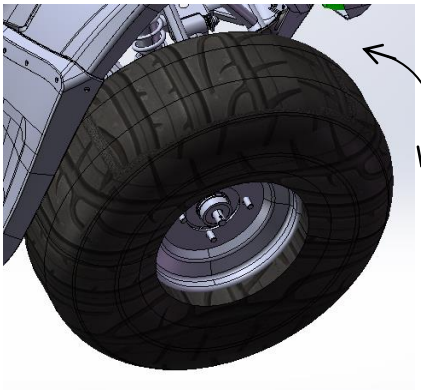
note

When the tire pattern is less than 3mm, it must be replaced immediately

Wheel nut and wheel axle
Check the front axle, rear axle nut 1 and the looseness of the latch
Fasten at specified torque when loose
Torque:
Front axle nut: 126N • mm～218N • mm (12.6kgf • mm to 22kgf • mm)
Rear axle nut: 199N • mm~311N • mm (20kgf • mm to 31kgf • mm)



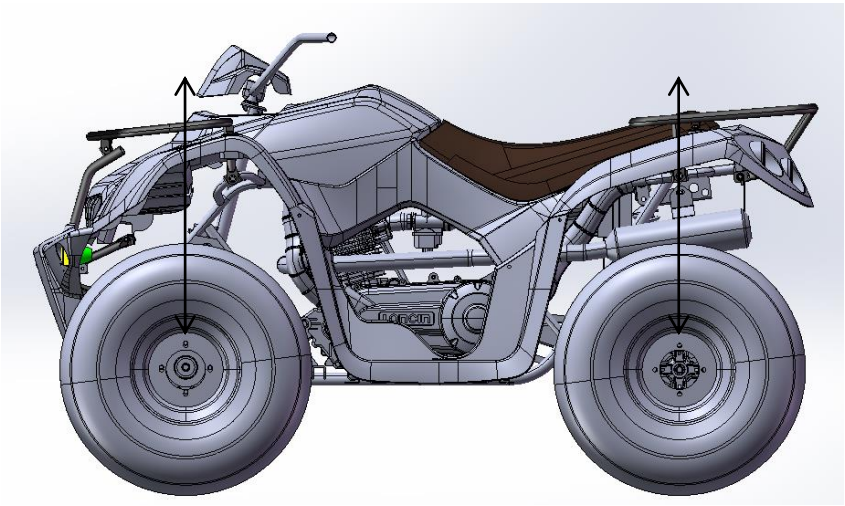
Shaking of wheel hub
Use the tool to frame the front wheel. When the car body does not exert force on the front wheel, shake the wheel axially to check for shaking.



Remove the front wheel when shaking, check the wheel hub

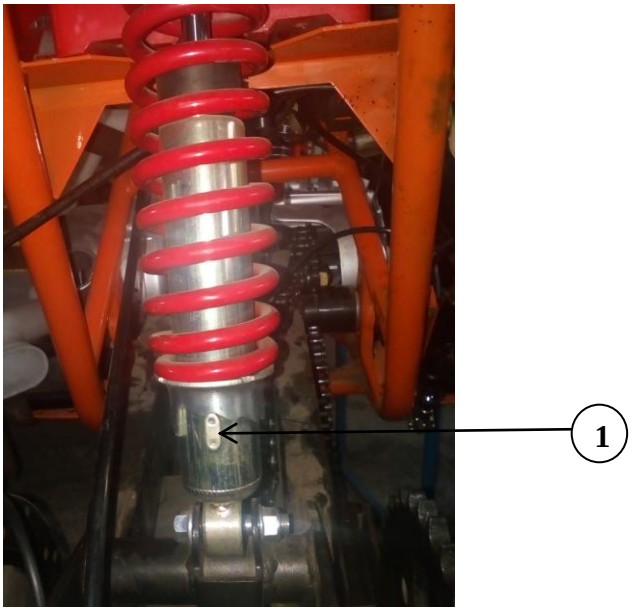
3.5 Suspension system

Place the motor body in a horizontal position and press the motor body up and down several times according to the position shown. If there is any sway or abnormal noise, check the shock absorber for oil leakage, damage to each fastening part, looseness, etc.



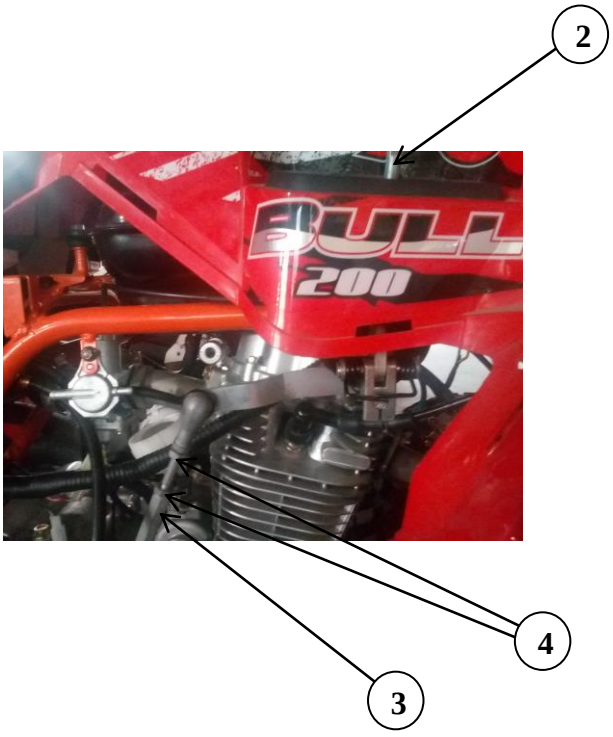
Shock absorber adjustment

Adjusting the adjustment cam 1 of the shock absorber according to the load with a special tool
Clockwise rotation is from high to low, counterclockwise rotation is adjustable from low to high bidirectional



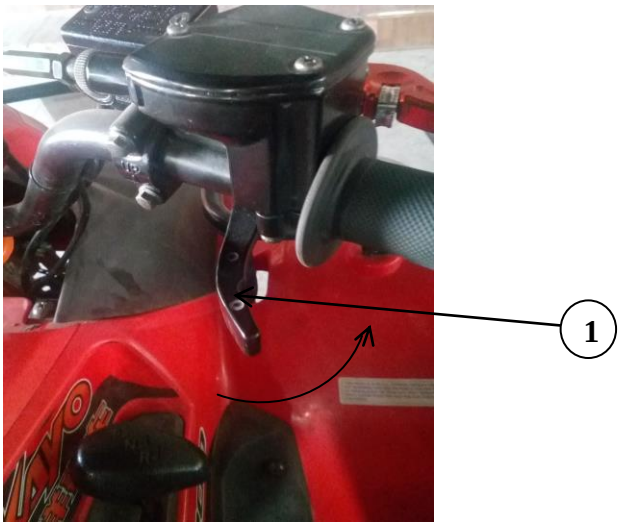
3.6 Shifting mechanism, fuel device

Shifting mechanism
Replace the gear position, check whether the shifting mechanism2 is flexible, and whether the gear position is in the gear. If the gear shift is not flexible, adjust the length of the shifting mechanism tie rod 3.
Loosen the lock nut 4 and adjust the length of the shifting mechanism lever



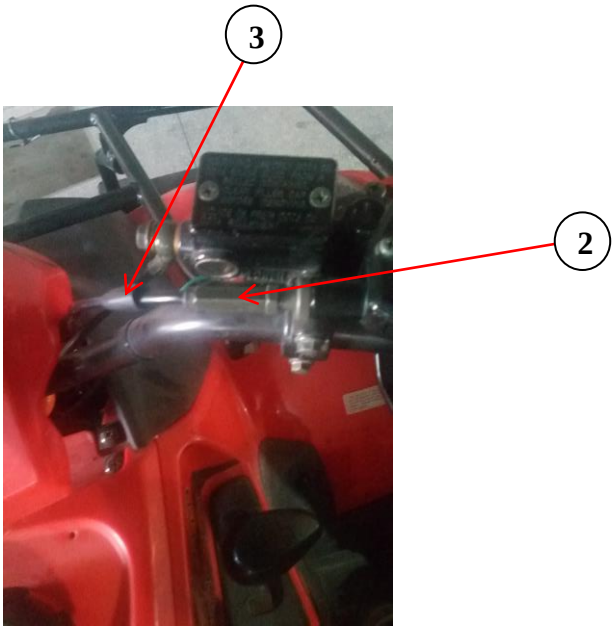
Fuel device
Fuel system status
Remove the seat cushion (→ 2.3.1)
Check the fuel pipe for aging and damage.
When the fuel pipe is aging or damaged, replace it with a new one.
Check the fuel tank vent pipe or the fuel evaporating system for rupture and bending. If there is any damage, replace it with new ones.

3.7 Throttle check

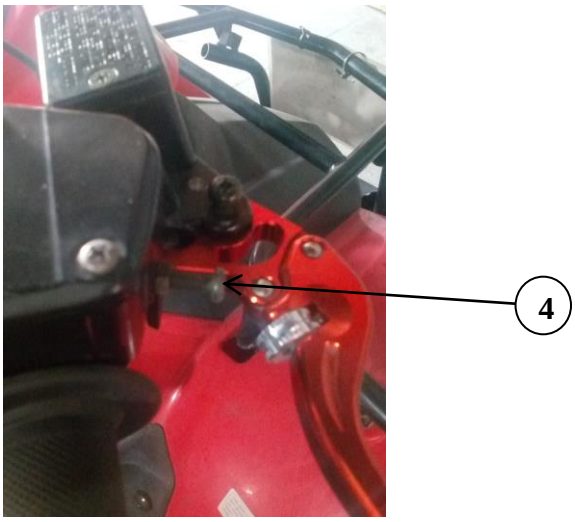


Check the free stroke of the throttle button 1
Clearance: 2 ~ 6 mm

Adjust the clearance when the clearance is not within the specified range
Remove the sheath 3
Release the throttle cable lock nut 2
Turn the adjuster to adjust the free travel of the throttle button
After adjustment, tighten the lock nut 2 to install the throttle cable sheath 3
If the adjustment regulator still does not reach the specified clearance or the movement is still not flexible, replace the new throttle cable.



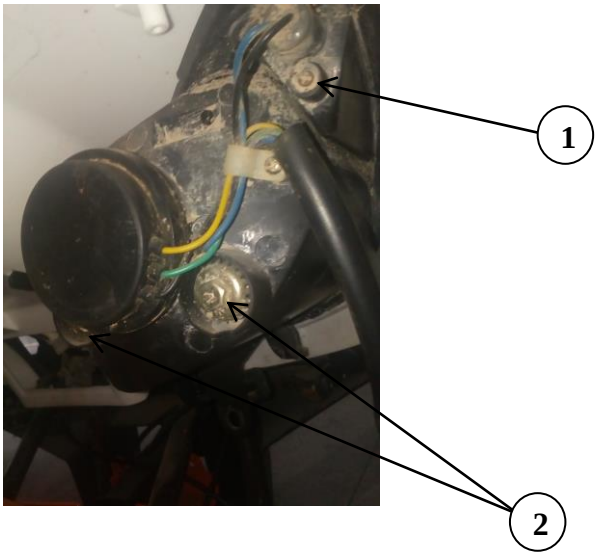
Speed limit device adjustment
The speed limit device is used to limit the opening of the throttle
Check the thread limit length of the speed limit screw 4,
Thread limit length: a = 12mm
Adjustment method
Loosen the lock nut
Adjust with a Phillips screwdriver
Note: For beginners, the speed limit device should be in a tightened state, and the speed limit device can be used to change the throttle size after the technology reaches a certain level.
In addition, 12mm is the limit length of the speed limit device thread. Generally, this length is only adjusted to 3mm~5mm.



3.8 Meter

Check meter

When the vehicle system is powered on for the first time (or after the instrument is replaced for the first time), when the engine is not working, the speed should be in the zero position, start the engine, pay attention to whether the speed value indicates change, if it does not change, it should be repaired in time.



3.9 Lighting device

Front light axis adjustment

(Take the right front headlight as an example) Adjust the bolt with a "Ten" screwdriver or wrench 1. Adjust the low beam; adjust the bolt 2 to adjust the up and down direction of the headlight.

Note: The vehicle system requires power before checking the lighting unit.

Turn signal inspection

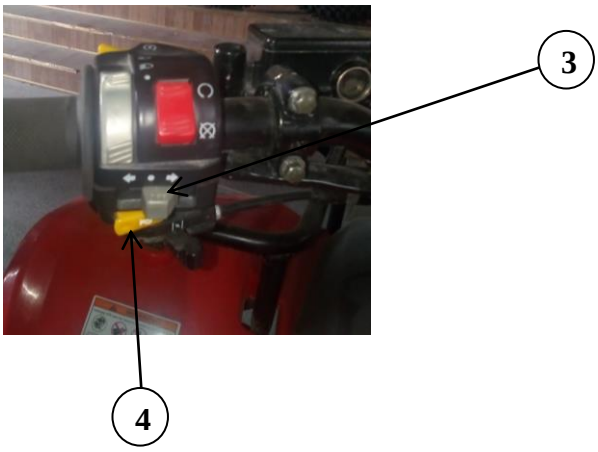
Turn the turn signal switch 3 to the left and right respectively to observe whether the front and rear turn signals of the vehicle are on. If it is not bright, please check if the line is connected incorrectly. If the wiring is correct, please replace the turn signal in time.

Taillight inspection

Hold the brake lever with your hand and observe the tail light. If the tail light is not bright, please check if the line is connected incorrectly. If the wiring is correct, please replace the tail light in time.

Horn check

Hold down the horn switch 4 and observe the horn. If the horn is not loud or the sound is too light, please check if the line is connected incorrectly. If the wiring is correct, please replace the horn in time.



4 Engine periphery

Maintenance information

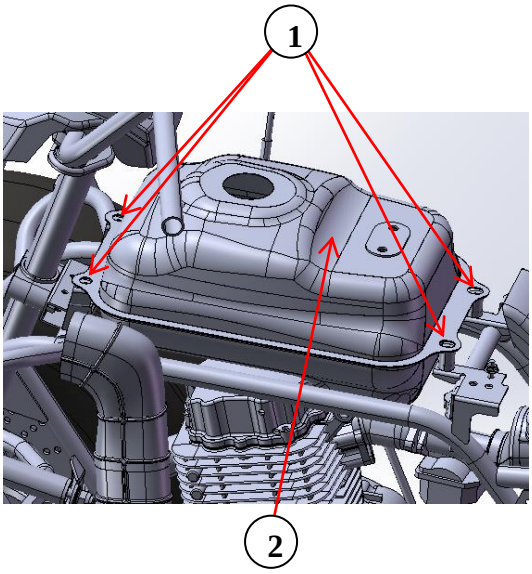
precautions

- When repairing the operation, please ensure that the vehicle is turned off and left still for less than 1 hour, and confirm that the heating parts are cooled before performing maintenance to avoid injury to maintenance personnel.
- Be careful not to damage the frame, engine body, bolts, cables during operation.
- When the engine is disassembled, the frame should be protected against the frame.
- When the engine is removed, in order to protect the environment, the corresponding container should be filled with coolant, oil and fuel. When installing, the coolant and oil should be replenished as required.

Tightening torque

Engine mount mounting bolt GB5787 M10×1.25×160 45~59N ṁ

4.1 Fuel System



Disassembly

Remove the seat cushion, fuel tank cover, instrument front cover, front assembly plate (→ Chapter 2 Body Cover)

Remove the mounting bolt 1

Release the oil level sensor connector 3

Remove the oil pipeline 4 (connected to the carburetor)

Remove the fuel tank 2

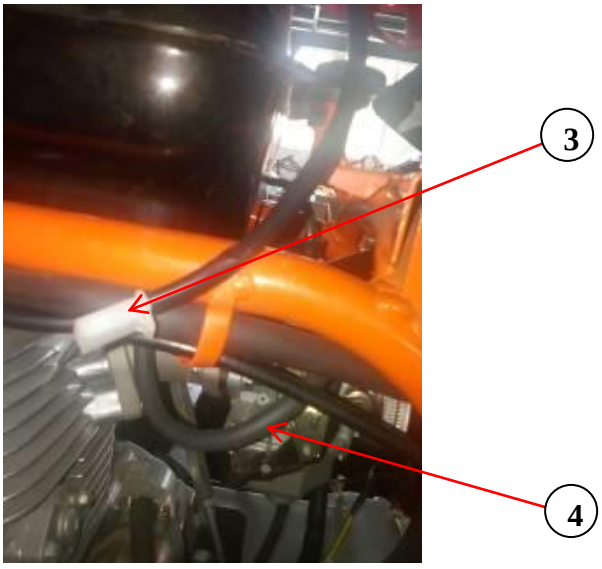
Note

Gasoline is very easy to catch fire, so fireworks are strictly prohibited in the workplace.

Not only open flames, but also high attention to electric sparks

In addition, due to the danger of explosion after evaporation (vaporization) of gasoline, work should be carried out in a well ventilated area.

When disassembling the fuel tank, if there is still fuel in the fuel tank, the oil pipeline 4 should be tightened beforehand to prevent fuel leakage and then remove the fuel tank**.**



Installation

Installation in reverse order of disassembly

The connector is required to be plugged into place and there is a noticeable "click" when installed.

The installation process checks the integrity of each tubing.

4.2 Intake system

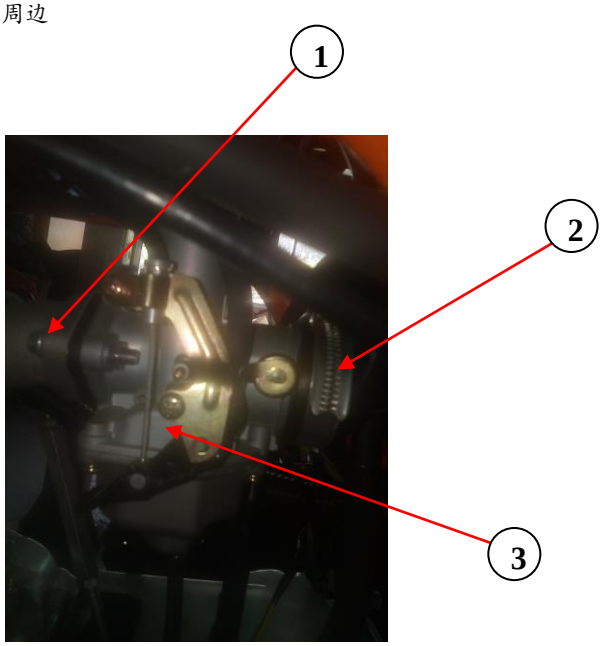
Disassembly

Remove the seat cushion and rear assembly panel (→ Chapter 2 Body Cover)

Remove the mounting bolts 1 (one for each of the left and right)

Release the clamp2

Remove the carburetor 3



Remove the fuel tank (→4.1 Fuel tank disassembly and safety)

Loading)

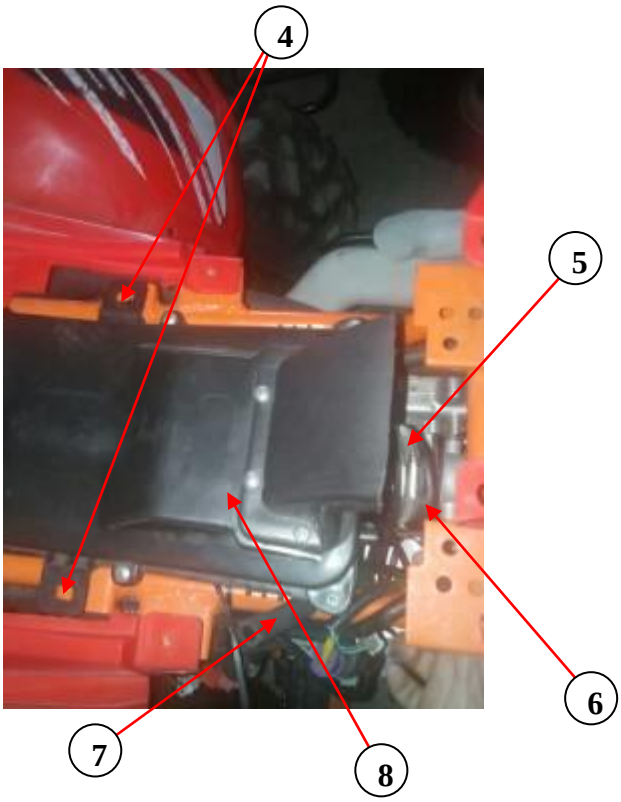
Remove the 2 mounting screws 4

Release the clamp5

Remove the intake pipe 6

Remove the crankcase exhaust pipe 7

Remove the air filter 8



Installation

Installation in reverse order of disassembly

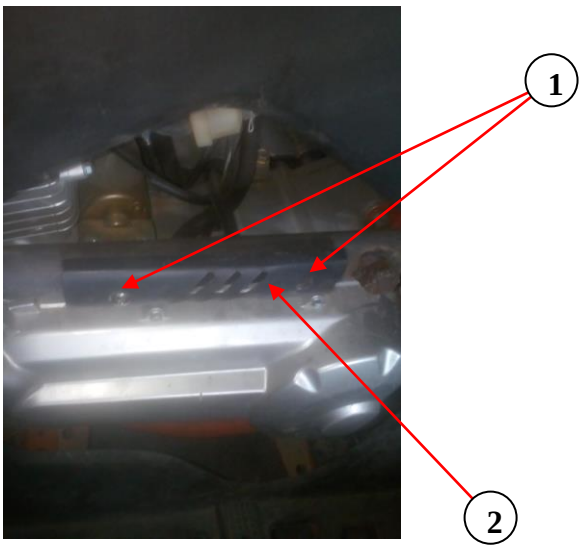
4.3 Exhaust system

Disassembly

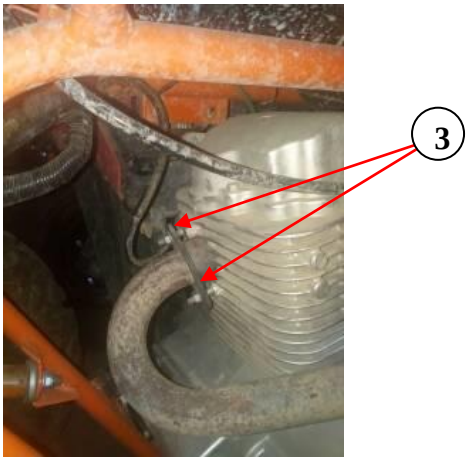
Remove the seat cushion, fuel tank cover, instrument front cover, front assembly plate, rear assembly plate (→ Chapter 2 Body Cover)

Remove 2 bolts 1

Remove the insulation2



Remove the mounting nut 3

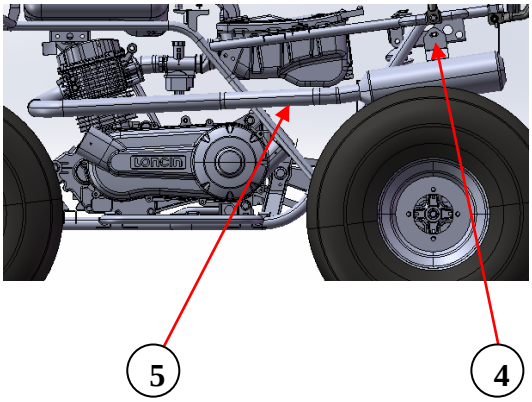


Remove the muffler barrel mounting bolt 4

Remove the exhaust pipe assembly 5

installation

Installation is in reverse order of disassembly



4.4Engine disassembly and installation

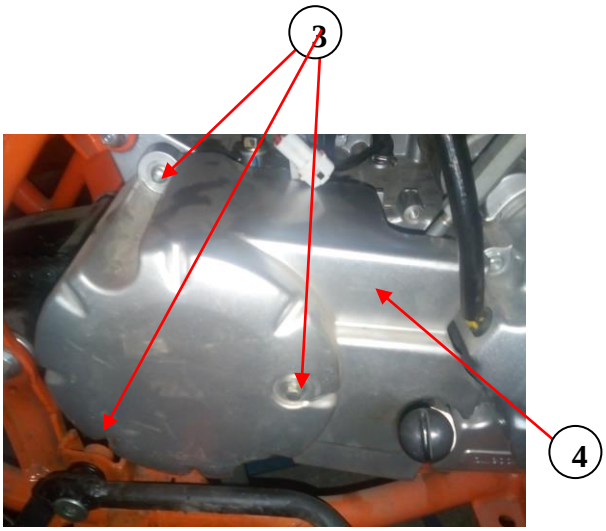
Disassembly

Remove the seat cushion, fuel tank cover, instrument front cover, left middle guard, right middle guard, left foot pedal, right foot pedal (→ Chapter 2 Body Cover)

Remove the fuel tank (→ 4.1 Fuel System)

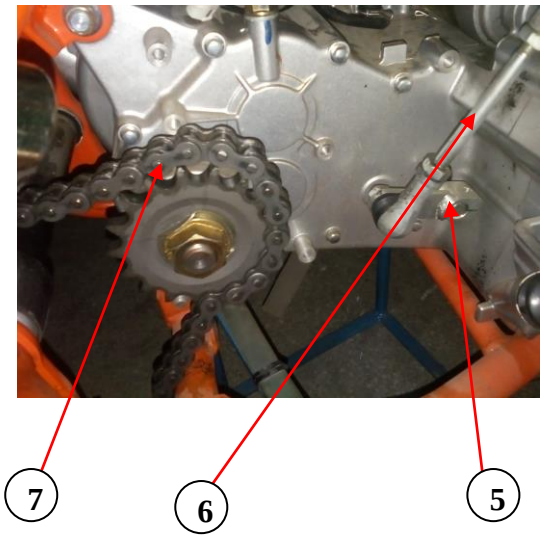
Remove the air filter and carburetor (→ 4.2 Intake System)

Remove the exhaust pipe assembly (→ 4.3 exhaust system)



Remove 3 bolts 3

Remove the engine left cover 4

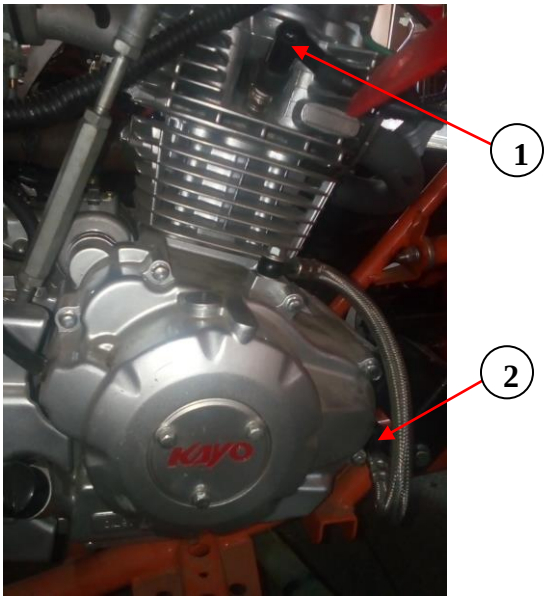


Remove the bolt 5

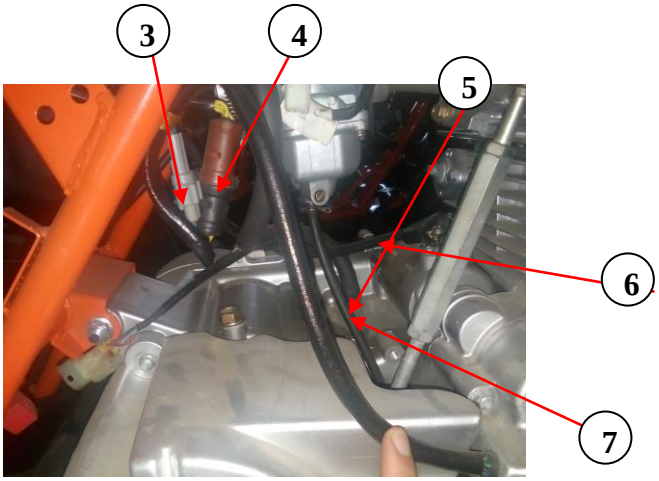
Disengage the shifting assembly 6 from the engine

Remove the chain 7

Remove the spark plug cap 1
Remove the throttle tube connector 2



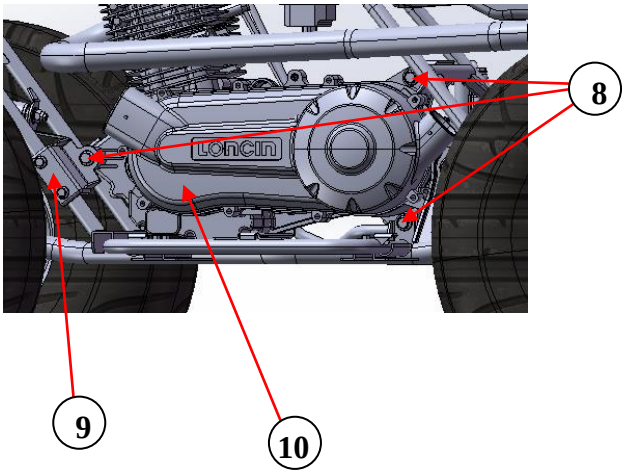
Remove the magneto motor trigger patch cord 3
Remove the charging patch cord 4
Remove the crankcase exhaust pipe 5
Remove the motor cable 6 (Remove the screw at the relay)
Remove the carburetor drain pipe 7



Remove the mounting bolts 8
Remove the fixing piece 9
Remove the engine 10

installation

Installation is in reverse order of disassembly



5 Engine

5.1 Overrview

Maintenance precautions

1、Parts, lubricants or other auxiliary materials produced or approved by Chongqing Longxin Group shall be used. If the materials used do not meet the “Loncin” specifications or requirements, the motorcycle may be damaged;

2. When reassembling after disassembly, replace gaskets, seals and cotter pins;

3. When tightening bolts or nuts, it should be carried out in the order of diagonal crossing, and gradually tighten to the specified torque in 2~3 times;

4. When cleaning parts, use cleaning liquid that cannot burn or high ignition point. Lubricate the sliding surface of the part before assembly;

5. After assembly, check whether the parts of each part are installed correctly, and perform rotation, movement and inspection operations.

5.1.1 Main performance technical parameters

item		data
Engine	model	LC162FMK–2
	type	Ignition
	Cylinder arrangement	Vertical
	Cylinder diameter × stroke	62×58.4
	Working volume	Basin type combustion chamber，17.8ml
	Compression ratio	9.7:1
	Maximum power and corresponding speed	9kw/8000r/min
	Maximum torque and corresponding speed	13N•m/6000r/min
	Minimum fuel consumption rate	354g/kw•h
	Valve clearance (when cooling)	Intake and exhaust 0.06mm
	Engine static mass	39kg
	Idle speed	1700r/min
Transmission system	clutch	Continuously variable speed
	Secondary reduction ratio	2.14
	Stepless transmission ratio	0.95~2.8
	Form of Shift change	Non-cyclic shift
	Starting device	Electric start
Electrical system	Ignition method	CDIElectronic ignition
	generator	Permanent magnet alternator
	Battery capacity	12V7Ah
	Spark plug model	D8RTC
	Spark plug gap	0.6~0.7mm

5.1.2 Mark torque data

Item	quantity	Thread diameter	Torque N•m
Cylinder head cap fastening bolt	4	6mm	10~14
Cylinder head fastening nut	4	8mm	23~30
Magneto motor rotor fixing bolt	1	8mm	45~53
Primary active tooth lock nut	1	16mm	40~50
Oil filter cover nut	1	36mm	10~20
Shift drum positioning plate bolt	1	6mm	8~12
Shift drum and dial connecting bolt	1	6mm	8~12
Cylinder head nut	4	8mm	28~30

In addition to the torque values of the important parts listed in the above table, the torque range of the other fasteners is as follows：

Name and size (thread diameter)	Torque N•m
5mm Bolts and nuts	4.5~6
6mm Bolts and nuts	8~12
8mm Bolts and nuts	18~25
10mm Bolts and nuts	30~40
12mm Bolts and nuts	35~50
5mm Screw	3.5~5
6mm Screw	7~11
6mm Bolt and nut	10~14
8mm Bolt and nut	20~30
10mm Bolt and nut	30~40

5.1.3 Maintenance schedule

	times / Maintenance item	item	Mileage（km）				
		period	1000	4000	8000	12000	note
☆	Fuel system access			I	I	I	
☆	Fuel filter		C	C	C	C	
☆	Carburetor choke						
	Air filter element	Note①					
	Spark plug		I	I	I	I	
☆	Valve clearance		I	I	I	I	
	Engine oil	Per year	R	R	R	R	
	Lubricating oil filter	Per year			C		
☆	clutch		I	I	I	I	
☆	Carburetor idle speed		I	I	I	I	

The vehicle should be repaired according to the specified repair time. The meanings of the various codes in the table are as follows:

C: cleaning

R: Replace

A: Adjustment

L: Lubrication

I: Check and, if necessary, clean, replace, adjust or lubricate

☆：The project is repaired by the personnel of the Longxin service station. If you check it yourself, you should also refer to this manual.

☆☆：For this project, this manual is recommended to be repaired by personnel at the Longxin service station to ensure safety.

note①：Driving in dusty areas should be cleaned frequently.

5.2 Lubrication system

Maintenance instructions

This section describes the engine lubrication system and the cleaning, inspection, and replacement of various parts of the system. The engine should not be removed when inspecting and cleaning the lubrication system, but the oil in the engine should be drained before inspection and cleaning.

5.2.1Troubleshooting

First, the lubricant is consumed too fast

1. The engine has oil leakage

2, piston ring wear

3, the intake and exhaust valve guides wear

4. The oil hood is worn or damaged

Second, the lubricant is not clean

1. The engine oil is not replaced according to the maintenance schedule.

2, the oil filler thread is damaged

Third, the lubrication is not normal

1, the oil level is too low

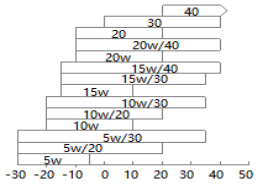
2, oil passage or filter blockage

3, the oil pump is damaged.

5.2.2Engine lubrication system

Lubricating oil is an important factor affecting engine performance and life. It must be selected according to regulations. It cannot be replaced by ordinary engine oil, gear oil, vegetable oil, etc.

When the car is shipped from the factory, it is filled with 15W/40SE gasoline engine oil. If you switch to other lubricants (the best oil for Longxin), the quality grade should reach QE or SF. The viscosity should be selected according to the different regions and temperature changes. When replacing the lubricating oil, please put out the original lubricating oil in the crankcase, clean it with washing kerosene, and then add new lubricating oil according to the regulations



5.2.3 Lubricating oil inspection

Park the motorcycle on a flat surface and check the amount of oil with a dipstick 1. If the oil level is lower than the lower score line, the recommended lubricant should be replenished to fill the upper line.

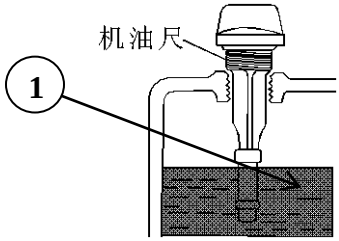
5.2.4 Lubricating oil replacement

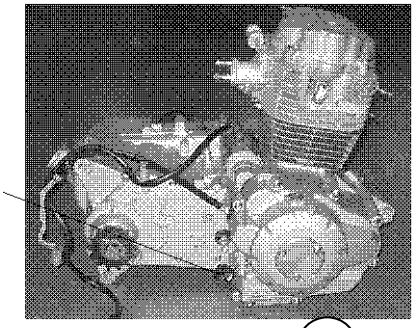
When changing the oil, it should be done before the engine is warm and not cooled. This will ensure that the oil in the tank is quickly and completely removed. When replacing, turn on the oil filter cover 2 (bottom of the crankcase), remove the spring and filter, release the oil in the crankcase, and then unscrew the gearbox drain screw 3 to get out the oil in the gearbox

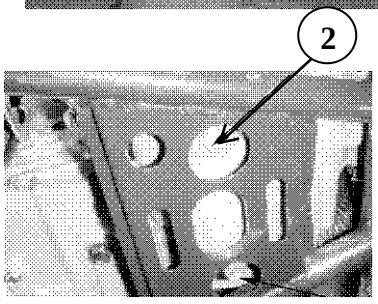
5.2.5 Lubricating oil filter cleaning

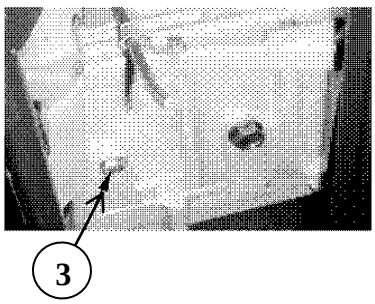
Clean the filter with a detergent. Install the filter and spring, install the filter cover, and tighten according to the specified torque value. Add new lubricant from the fill port (0.9 L crankcase, 0.4 L gearbox)
Install the screw plug with the dipstick. Then, the engine was started to operate after idling for 45 minutes and then stopped. Then, keep the body flat and check the oil level of the oil dipstick. At this time, the oil level must reach the lower line and check for oil leakage.

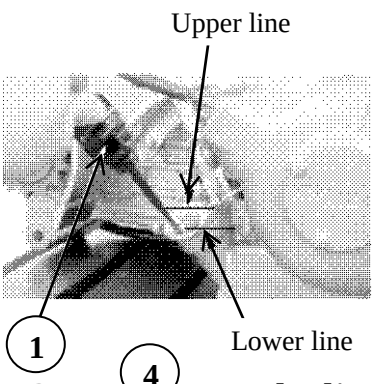
4：Transmission case oil hole sealing screw plug

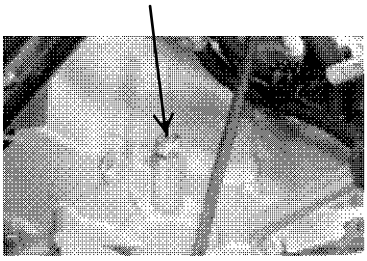












5.3 Inspection and adjustment

Maintenance instructions

This section describes the inspection and adjustment of various parts of the LXCVT200 engine. At the same time, the technical requirements for adjustment and inspection are introduced. For details on the inspection of the lubrication system, see 5.2

5.3.1 skills requirement

Recommended spark plug	D8RTC
Spark plug gap	0.6~0.7mm
Valve clearance	Intake valve 0.06mm
	Exhaust valve 0.06mm
Ignition advance angle	Before the stop point 15°±2° （2000±200r/min）
	Before the stop point 35°±2°

	（3800±200r/min）
Idle speed	1700 ±170r/min
Cylinder compression force	1450 ±145kPa

5.3.2 Spark plug

Use a socket wrench to remove the spark plug and visually inspect the spark plug insulator for damage. Whether the electrode is ablated, if any, it should be replaced

Check the electrode gap with a thick gauge, the spark plug electrode gap is 0.6~0.7mm

Carefully adjust the gap. Then use a spark plug cleaner or wire to clean carbon and dirt

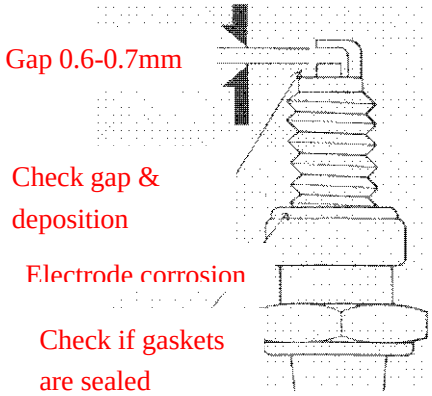
When installing the spark plug, first screw the spark plug into the hand and tighten it, then cover the spark plug cap.

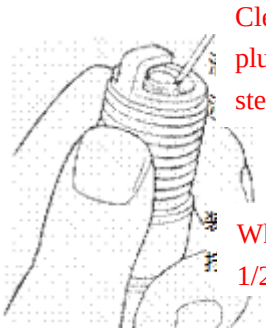
5.3.3 Valve clearance

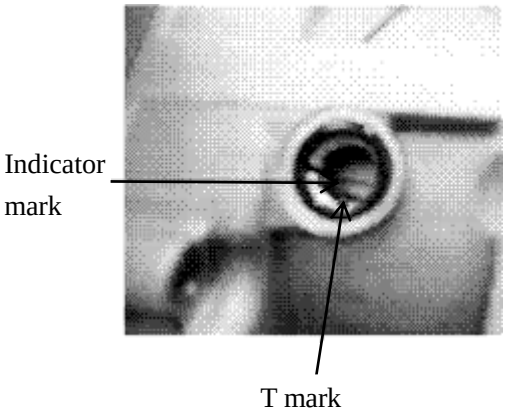
Note: When adjusting the valve clearance, the engine should be in a cold state (temperature below 35 ° C）

Remove the viewport cover and top viewport cover

Rotate the magneto flywheel counterclockwise to align the “T” mark on the flywheel with the indicator mark on the left front cover. Note that the piston must be at the top dead center of the compression stroke.







Use a gauge to insert the adjustment screw and check the clearance between the valve stem

Valve clearance: intake valve: 0.06mm
Exhaust valve: 0.06mm

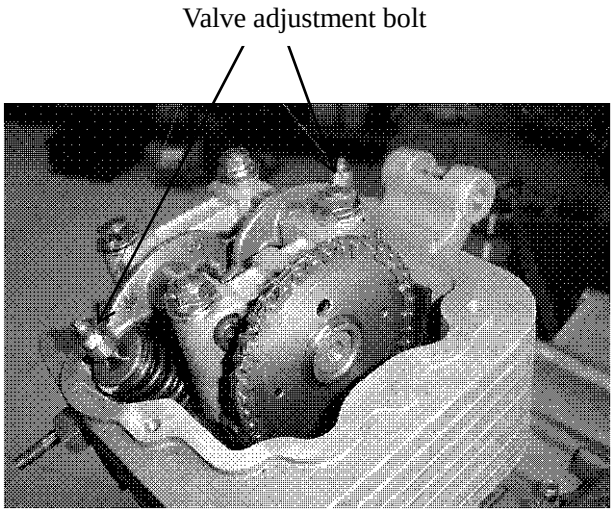
When adjusting, loosen the lock nut and turn the adjusting screw until the gauge feels slightly pulled. Then adjust the screw with the valve adjuster, then tighten the lock nut
Check the valve clearance again
Then, install the valve cover
Install the fuel tank and cushion.

5.3.4 Ignition timing

Note: The ignition timing cannot be adjusted. Because CDI (capacitor discharge ignition) cannot be adjusted. If the ignition is not correct, check the CDI igniter, pulse trigger and magneto, and replace the faulty electrical device.

Remove the top view cover
Connect the timing light
Start the engine and put it in an idle state

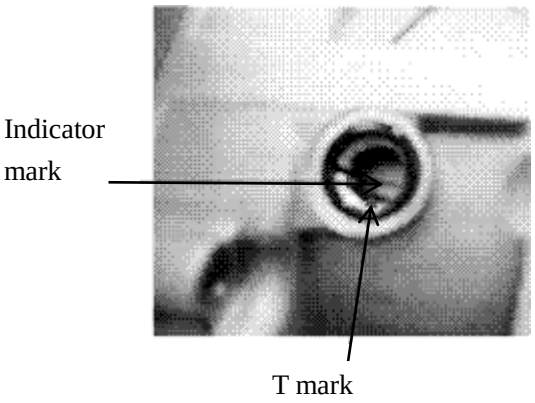
If the "F" mark on the magneto rotor is aligned with the indication mark on the left front cover, the timing is correct.
Idle speed is 1700 ± 170r/min
Then, increase the speed of the transmitter and check the following items:
2000 ± 200r/min
Advanced start
3800 ± 200r/min
Leading ahead (the indicator should be before the advance sign)

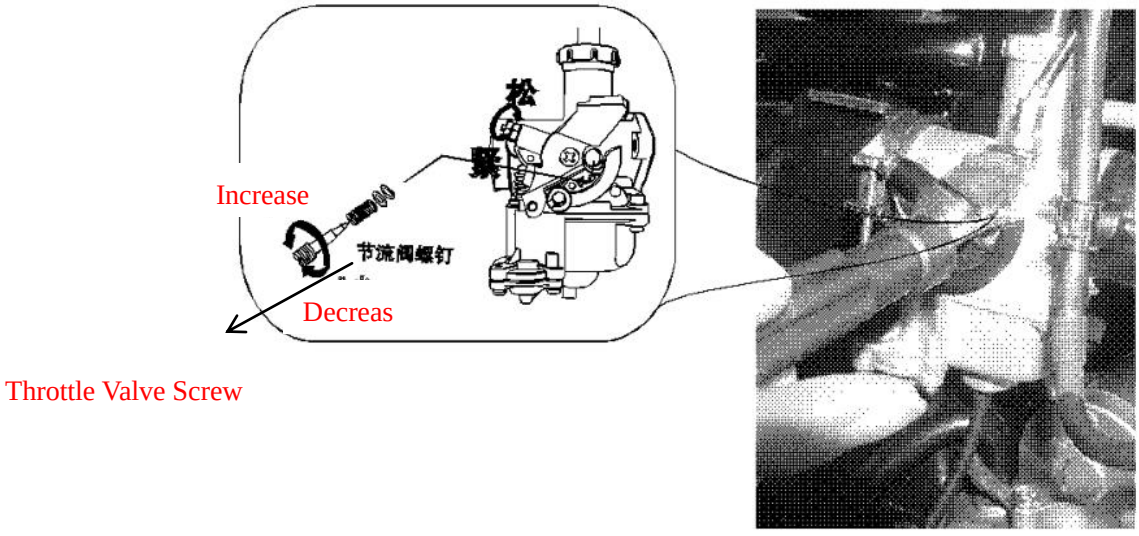


5.3.5 Carburetor idle speed

Note: After adjusting other items of the engine to the specified range, check and adjust the idle speed of the carburetor.

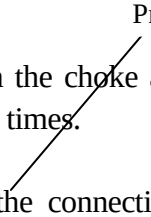
When adjusting, the engine should be in a hot state, support the main bracket, and rotate the plunger adjustment screw
Idle speed：1700 ±170 r/min





5.3.6 Cylinder compression test

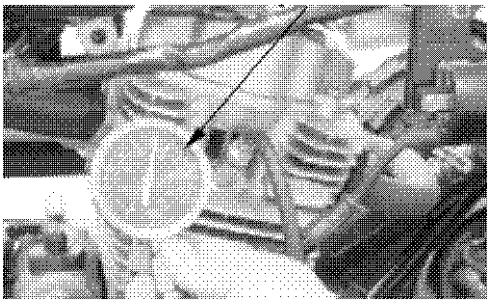
Warm up the engine, then turn off the engine, remove the spark plug, then install the pressure gauge at the spark plug installation, and fully open the choke and throttle switch, and start 4 to 6 times.



Note: Check the connection of the pressure gauge for leaks. The engine is continuously

started until the pressure gauge stops rising. The maximum reading usually arrives after 4 to 6 starts.

Cylinder compression force：1450 ±145kPa



5.4 Fuel System

Maintenance instructions

1. When using gasoline, special care should be taken. Always remember to carry out in a well-ventilated environment in the air, and keep away from sparks and flames;
2. When disassembling all parts of the fuel system, pay attention to the installation position of the “O” ring. When reassembling, it must be replaced with a new “O” ring;

The oil drain screw at the lower end of the float chamber can loosen the screw and drain the gasoline remaining in the float chamber.

5.4.1 trouble clearing

the engine can ignite, but can not start

1. There is no fuel in the fuel tank.
2. No fuel enters the carburetor
3, too much fuel into the cylinder
4, air filter blockage

the mixed gas is too dilute

1. Carburetor nozzle blockage
2. The fuel tank cover vent is blocked
3, fuel filter blockage
4, fuel pipe flow is not smooth
5, the float needle is faulty
6. The oil level in the carburetor is too low

the mixed gas is too concentrated

1. The choke is closed
2. The oil level in the carburetor is too high
3, carburetor air nozzle blockage
4, the float stuck or the float needle is faulty
5, the air filter is not clean

the idle speed of engine is unstable

1. Improper adjustment of idle speed
2, the mixture is too rich
3, the mixture is too thin
4, the cylinder compression force is too low
5, the air filter is blocked
6, fuel storage for too long

Impurities in the fuel

5.4.2 Carburetor disassembly

Turn off the fuel switch and remove the fuel line connection. Remove the side covers on both sides.

Loosen the carburetor drain screw and release the fuel from the carburetor.

Remove the connecting nut of the carburetor and the intake pipe.

Loosen the hook screw with the air filter.

Then remove the carburetor cover and pull the throttle plunger out.

Remove the carburetor.

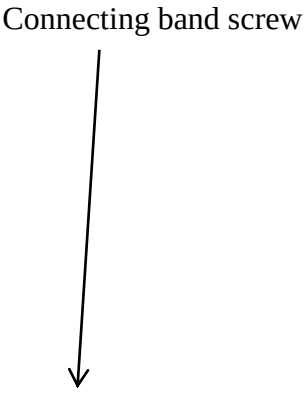
Note: Flames or sparks should not be close to gasoline; if spilled gasoline, it should be wiped clean immediately.

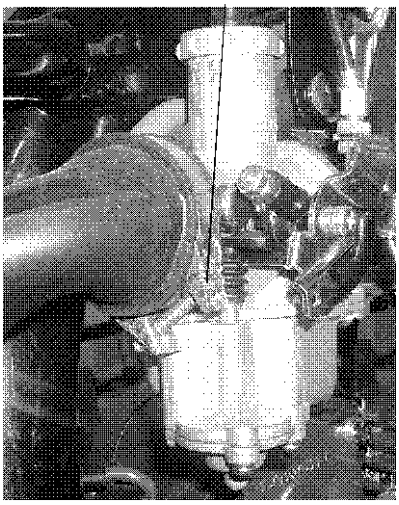
5.4.3 Throttle valve plunger

Remove the connection of the throttle handle line end in the groove on the throttle valve plunger, and press the throttle valve spring when disassembling.

Remove the oil needle retaining ring and then remove the oil needle and the oil needle retaining ring from the throttle valve plunger.

Check the surface of the throttle valve plunger and the needle for cleanness, smoothness, scratches or wear.





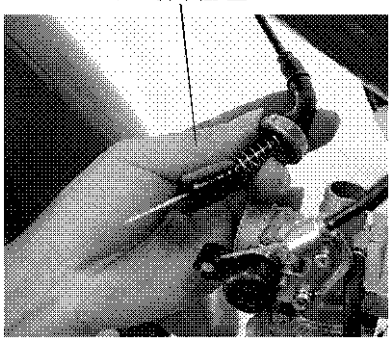
Remove the connecting screw and float cover of the float chamber cover.
Then pull the float arm pin out.
Remove the float and float needle.

Check the contact surface of the float needle for wear and damage. Replace the new float needle when necessary.

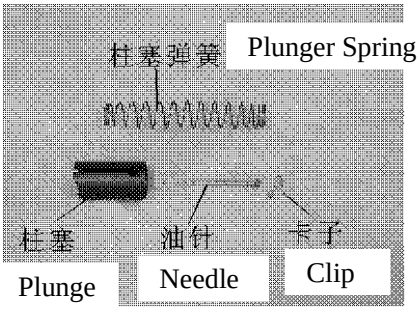
Remove the main orifice, foam tube nozzle, idler orifice and plunger locking screw.
Remove the positioning screw.

Valve plunger

节气门柱塞



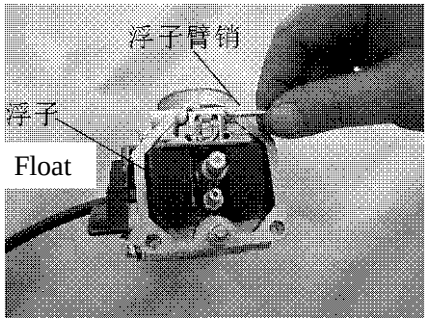
Note: Before remove the screw, first determine the mounting position of the screw. Remember the times of turning when removing; otherwise, it will cause unnecessary trouble when installing the positioning screw.



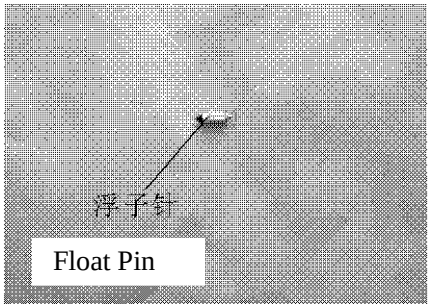
Then clean all the channels and surfaces of the carburetor with a cleaning solution. After cleaning, all the channels are blown with compressed air. Remove dirt, etc.
Then, install the idler orifice, foam tube nozzle, main orifice and plunger locking screw in the order of disassembly; reinstall the positioning screw and screw it to the mounting position before disassembly.
Set the opening position of the screw and screw it back in the 7/4 turnn

5.4.4 Float, float needle, nozzle

Float arm pin



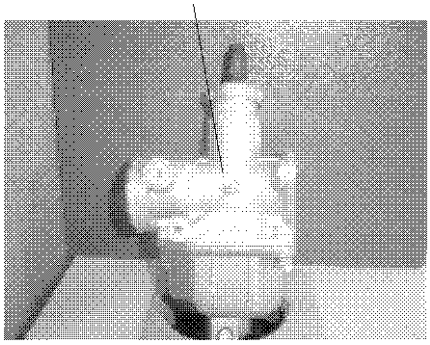
First measure the height of the float with an altimeter
Float height：15 ±1 mm



When you need to adjust the height of the float, slowly change the angle of the float arm until the tip of the float arm just touches the float needle. You can also adjust the height of the float on the float height detector.

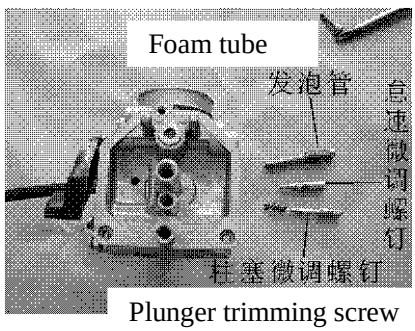
5.4.6Throttle valve plunger assembly

Idle speed adjustment screw



First install the retaining ring in the groove of the oil needle

Standard positioning position: third ring groove

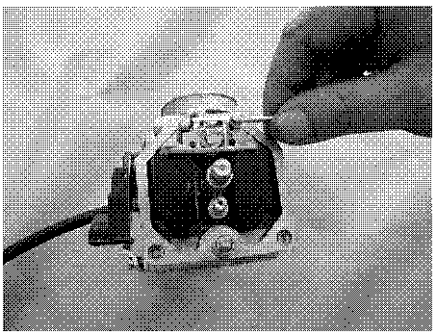


Idle fine-tuning screw

Then insert the oil needle into the plunger and attach the retaining ring. Then, insert the plunger spring into the end of the throttle plunger. Connect the steering line to the throttle

Retaining Rin

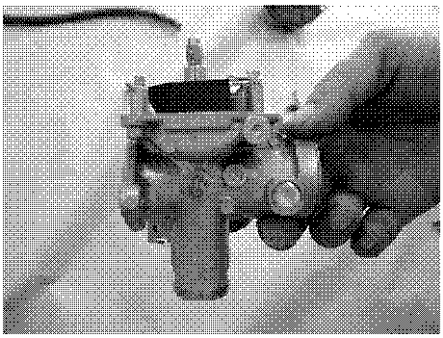
5.4.5Float height adjustment



5.4.7 Carburetor installation

Install the throttle valve plunger into the carburetor body.

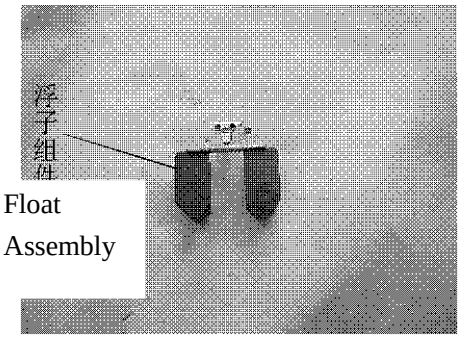
Note: The groove of the throttle valve plunger should be aligned with the locking screw on the carburetor body.



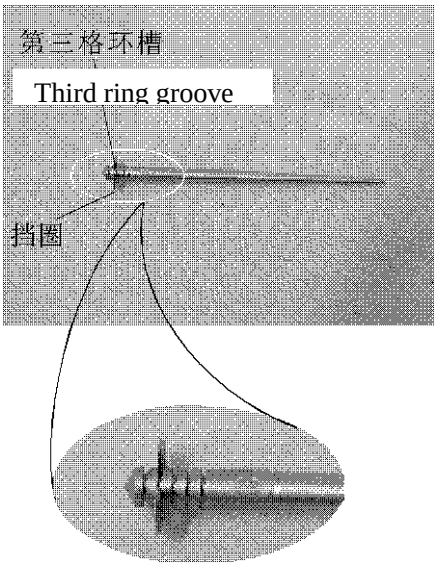
Then tighten the end cap of the top of the carburetor

After installing the carburetor, adjust the free stroke of the throttle handle with the adjustment device on the throttle control line.

Free stroke of the throttle handle: 2~6mm



5.4.8Air conditioning screw adjustment



Rotate the locking screw clockwise until it contacts the screw seat

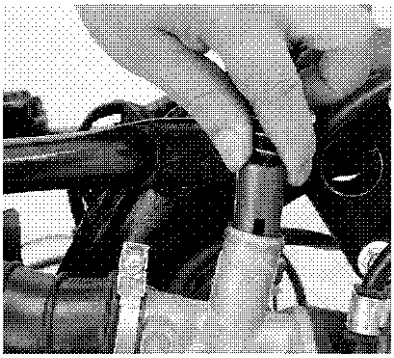
Then turn in the opposite direction until the standard position is reached.

Standard position of the locking screw: 7/4 turn

Note: If the locking screw and the screw hole seat are tightened too tight, the screw hole seat may be damaged.

Throttle Valve Screw

Throttle Valve Screw Decre



Start the engine to warm up to the operating temperature

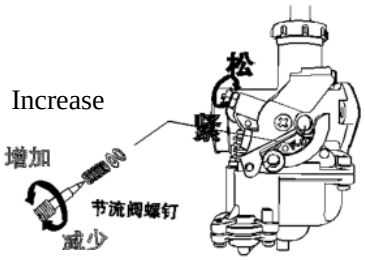
Adjust the throttle locking screw to achieve idle speed

1700 ± 170r/min

Constantly manipulate the throttle hand

Check if the engine can accelerate or decelerate steadily

Then adjust the positioning screw until the maximum speed is reached; then, adjust the plunger locking screw to reach the idle speed to 1700 ± 170r/min



Throttle Valve Screw

Decreas

Increase

5.5 Cylinder head and valve

Maintenance instructions

The camshaft lubricant is injected into the cylinder head via a control orifice on the engine casing. This control orifice must not be blocked.
When assembling, apply molybdenum disulfide lubricant on the cam bearing as the basic lubrication.
Fill the cylinder head cylinder with clean engine oil for lubrication of the camshaft.

Specifications

Item			standard（mm）	Maximum（mm）
Camshaft	Cam lift	Intake	31.78 ±0.06	31.4
		exhaust	31.53 ±0.06	31.13
Rocker shaft	inner diameter		12.000~12.018	12.05
	Outer diameter		11.972~11.987	11.93
Valve spring	length	Outer layer	45.5	45.5
		Inner layer	39.4	39.4
Item			standard（mm）	Maximum（mm）
valve	Valve clearance		0.06	—
	Valve stem outer diameter	Intake	5.45~5.465	5.42
		exhaust	5.430~5.445	5.40
	Valve guide inner diameter	Intake	5.475~5.485	5.53
		exhaust	5.475~5.485	5.53
	Clearance between Valve stem and guide	Intake	0.01~0.035	0.06
		exhaust	0.03~0.055	0.07
Cylinder head	Distortion		—	0.1
	Valve seat line width		1.1~1.3	1.5

5.5.1 Troubleshooting

Low cylinder pressure

1、Valve

Valve clearance adjustment is incorrect

Valve seal is not strict

The timing of the valve is wrong.

Valve spring break

2, cylinder head

The spark plug is not tightly connected to the cylinder head

Leakage or damage to the cylinder head gasket

Cylinder head has cracks or blisters

3, cylinder, piston

Piston ring clearance too big or broken

The piston is cracked or damaged

The inner diameter of the cylinder is too large or has a blisters

Exhaust has blue smoke

1.Valve guide wear

2. The oil shield is leaking or damaged.

3, cylinder head gasket leakage

4, the piston ring clearance is too big

Too much noise

1.Valve adjustment is incorrect

2. The valve is stuck or the valve spring is broken.

3, camshaft or rocker arm wear

4, timing chain is too long

5, the timing of the gas is not correct

6. Timing chain tensioner is worn or damaged

7, timing sprocket tooth wear

5.5.2 Disassembly of cylinder head cover

Remove the connecting bolts that secure the cylinder head 1

Remove the cylinder head cover 2

5.5.3 Disasembly of Rocker arm support

Remove the cylinder head cover 2

Remove the Ab bolt fastening nut 3 , copper washer 4 and steel washer 5

Remove the rocker support 9

Remove the rocker shaft limit plate

Insert the threaded end of the rocker with a 6mm screw

Pull out the rocker shaft 8

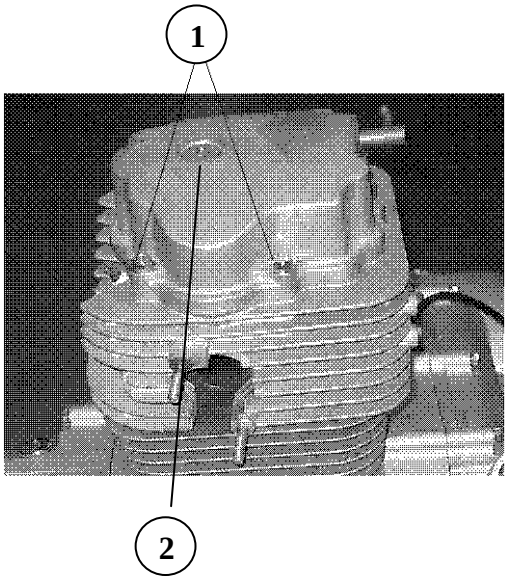
Note: nuts and washers cannot fall into the crankcase when disassembling。

6:Rocker arm

7: rocker shaft baffle bolt

10: exhaust rocker shaft

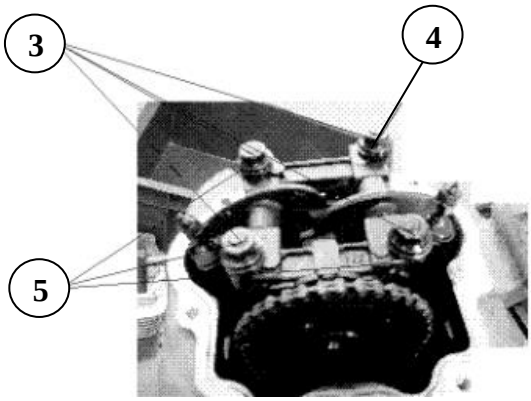
11: intake rocker shaft

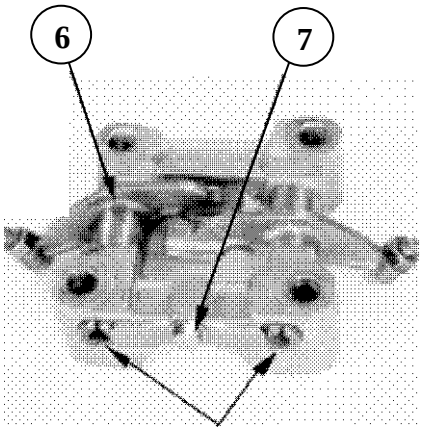


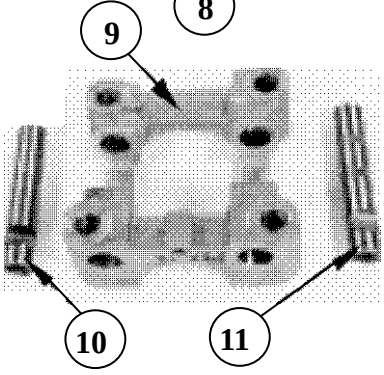
5.5.4 Camshaft removal

Remove the tensioner sealing bolt 1
Remove the tensioner fastening bolt 2
Remove the tensioner
Remove the camshaft 3

Note: Do not allow the timing chain to fall into the crankcase

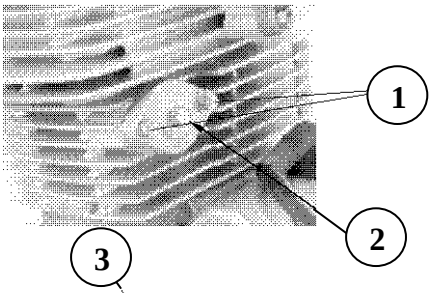


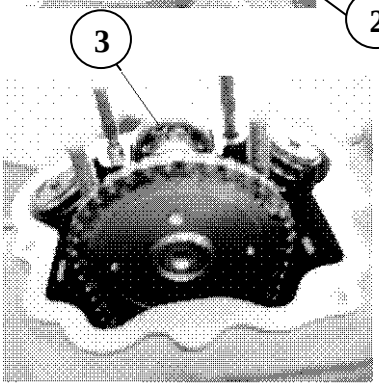




5.5.5 Cylinder head removal

Remove the cylinder connection bolt 4
Remove the cylinder head 5





5.5.6 Camshaft inspection

Check the lift distance of each cam

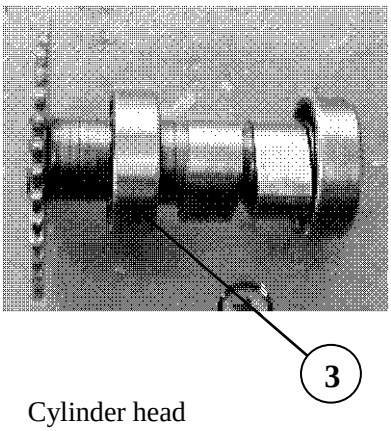
Use a micrometer to measure the length of the convex portion of the cam to check for wear.

Maintenance limit

Intake: 31.4mm

Exhaust:31.13mm

5.5.7 Rocker arm inspection



Cylinder head

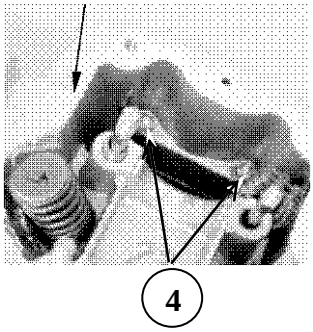
汽缸头

Check the rocker for wear, damage or oil hole blockage

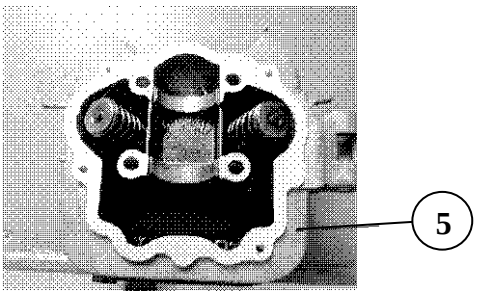
Note: If any rocker arm needs to be maintained or replaced, the unevenness of the camshaft protruding part should be checked accordingly.

Measuring the inner diameter of the rocker arm

Maintenance limit: 12.05mm



5.5.8 Rocker shaft inspection



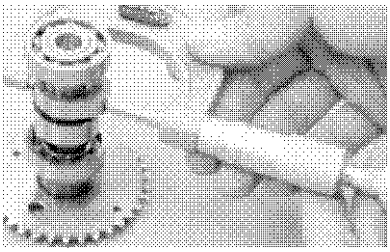
Check the rocker shaft for wear and scratches

Measuring the outer diameter of the rocker shaft with a micrometer

Maintenance limit: 11.93mm

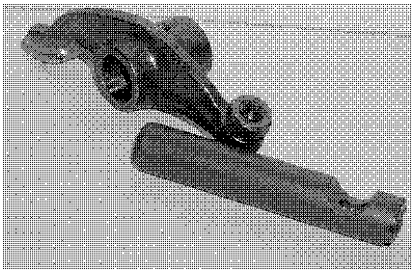
The maintenance limit clearance value of the rocker shaft and the hole is 0.08mm.

5.5.9 Decomposition of cylinder head



Press the valve spring with a valve remover
Remove the valve lock clip
Then relax the valve remover
Remove valve spring seat, 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 parts removed should be marked to ensure that the original assembly position is reached during assembly

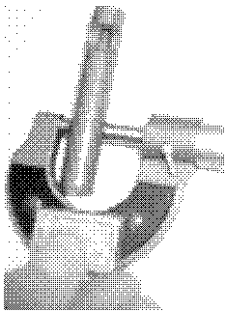
5.5.10 Inspection of valves and valve guides

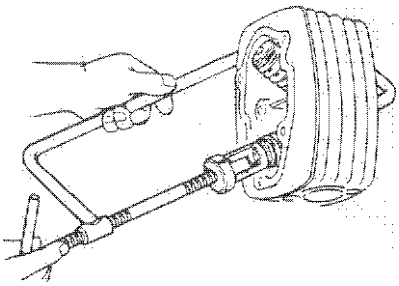


Check if the valves are bent, and the burns or valves are abnormally worn.
Check the movement of the valve in the valve guide and measure its outer diameter
Maintenance limit:
Intake: 5.42mm
exhaust：5.40mm

And insert each valve into the valve guide to observe its movement

Measure the inside diameter of each valve guide with an internal micrometer or a dedicated measuring tool. Finally calculate the gap between the valve guide and the valve guide
Maintenance limit clearance:
Intake: 0.12mm
exhaust：0.14mm





Note: Before measuring the inner diameter of the valve guide, the carbon deposit in the conduit should be completely removed.

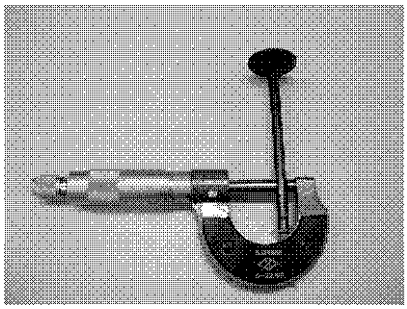
If the valve guide needs to be replaced, the valve seat should be reground.

Completely remove the carbon deposits in the combustion chamber

Remove the residue on the cylinder head plane with a spatula.

Note: The cylinder head plane cannot be damaged. If the cylinder head and gasket are immersed in the cleaning agent, the gasket will be damaged.

5.5.11 Cylinder head inspection

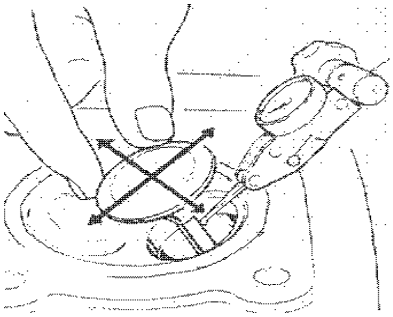


Check the spark plug hole and valve for cracks; check whether the cylinder head is deformed.

Check the flatness of the cylinder head with a knife-edge ruler and a feeler

Maintenance limit：0.1mm

5.5.12 Valve spring inspection



Measuring the free height of the inner and outer springs of the valve

Maintenance limit: (intake and exhaust)

Outer spring: 45.5mm

Inner spring：39.4mm

5.5.13 Valve guide replacement

Fix the cylinder head

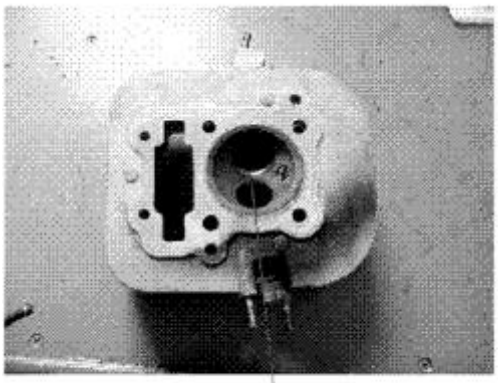
Use the valve guide removal tool to remove the valve guide from the valve hole

Note: Do not damage the cylinder head when removing the valve guide.

On the cylinder head, press the new valve guide and the “O” ring. Then reaming the newly installed valve guide

Note: When reaming, apply cutting oil to the reamer. Rotate when loading or unloading the reamer.

Finally, the cylinder head is cleaned with a cleaning agent and all the metal chips accumulated on the cylinder head are removed with compressed air.

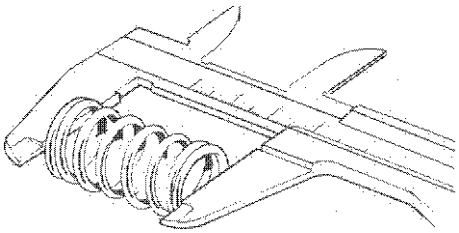


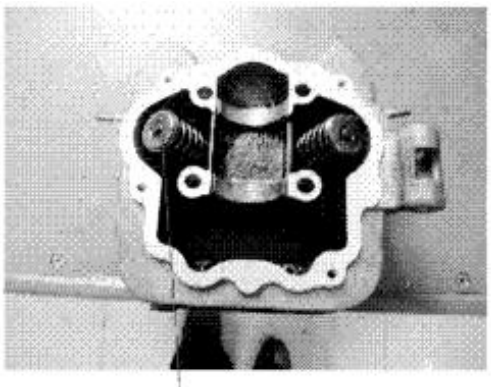
燃烧室

Combustion Chamber

5.5.14 Valve seat inspection and grinding

First, remove the dust on the intake and exhaust valves.
Apply abrasive to the valve seat
Then use the grinding tool of the rubber head to suck the valve
Grinding the valve seat.



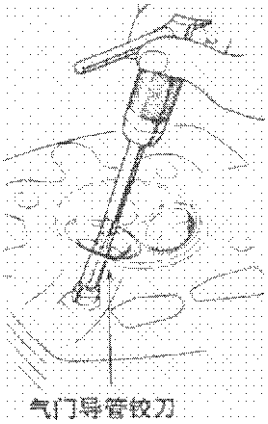


valve

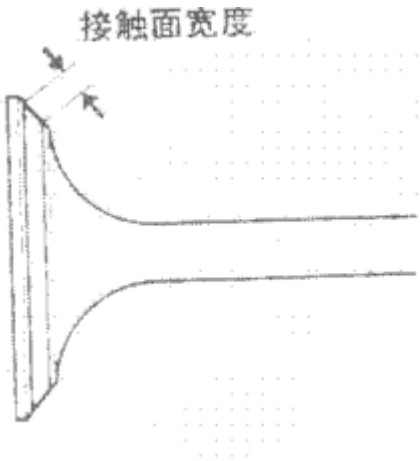
Remove the valve and check the valve, the width of the contact surface

Standard value: 1.2~1.6mm
Maintenance limit：2.0mm

Note: If the valve contact surface is rough, uneven wear or improper contact with the valve seat, the valve should be replaced.



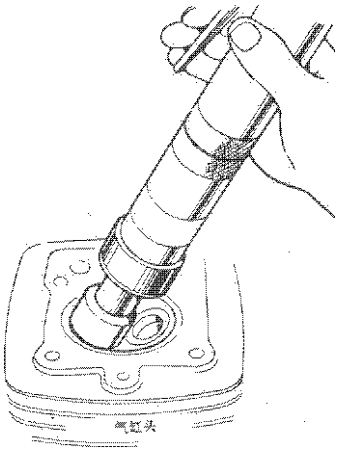
Valve duct reamer



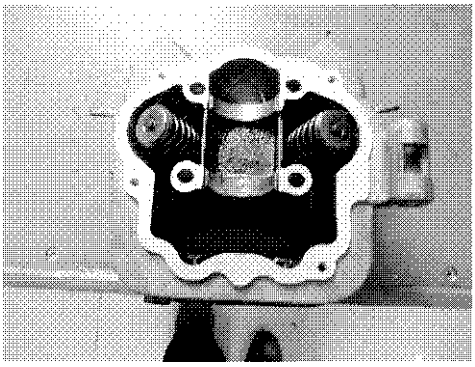
Measuring the width of the valve seat contact surface

Maintenance limit：1.5mm

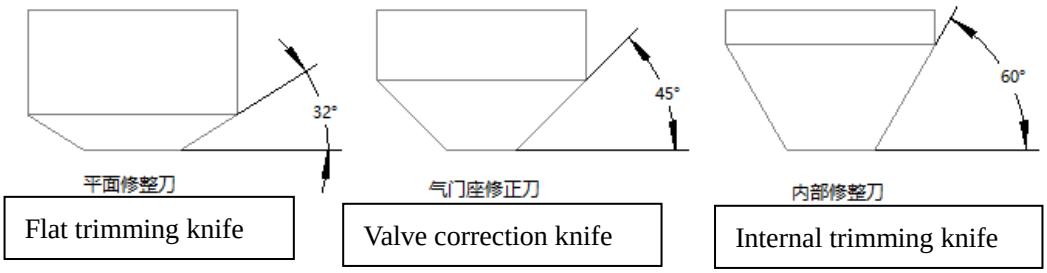
If the valve seat is too wide, too narrow or has a dent, the valve seat should be ground to the correct degree of sealing.



Contact width



Valve seat milling cutter
Three different angles of milling cutter

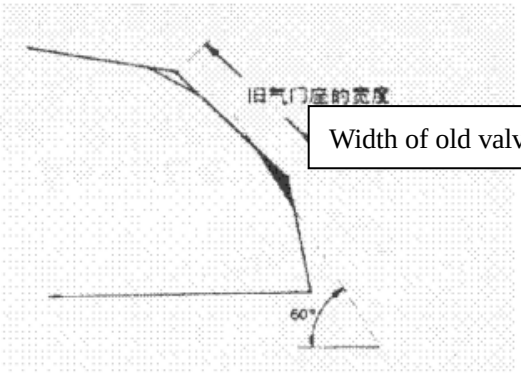


Flat trimming knife

Valve correction knife

Internal trimming knife

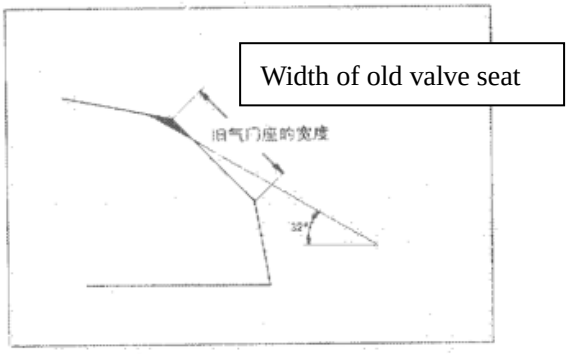
Milling the upper ring of the valve seat with a 32° milling cutter



Width of old valve seat

Finish the valve seat's work surface with a 45° milling cutter to the correct width.
Working face width standard value：1.0mm

Milling the bottom ring of the valve seat with a 60° milling cutter

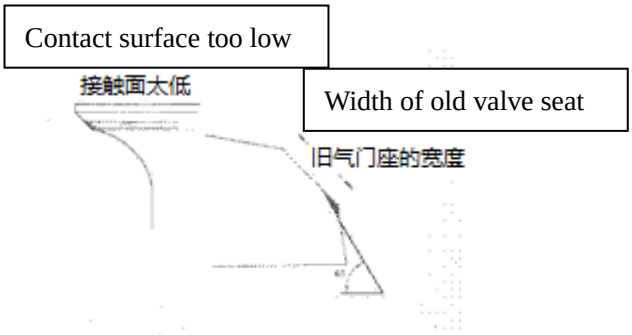


Width of old valve seat

Apply ink to the valve seat and insert it into the valve to rotate
Then take out the valve and see if the contact surface is in good condition.

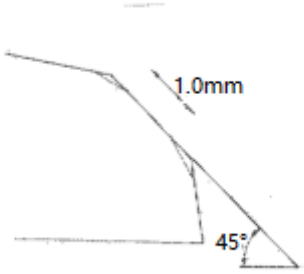
Note: The situation of contact surface between the valve and the valve seat will be a very important factor for the engine's tightness.

If the valve contact surface is too high, it can be abolished with a 32° milling cutter to reduce the contact surface



If the valve contact surface is too low, use a 60° milling cutter to raise the contact surface.
Finally, the 45° milling cutter is used for machining and abolishing, and the valve seat contact surface is machined to the pre-set width.

After the valve seat is finished, the valve seat should be coated with abrasive
Then, install the valve and grind the upper valve with a rubber head for grinding.
After grinding completed, clean all abrasives remaining on the cylinder head, valve seat and valve guide

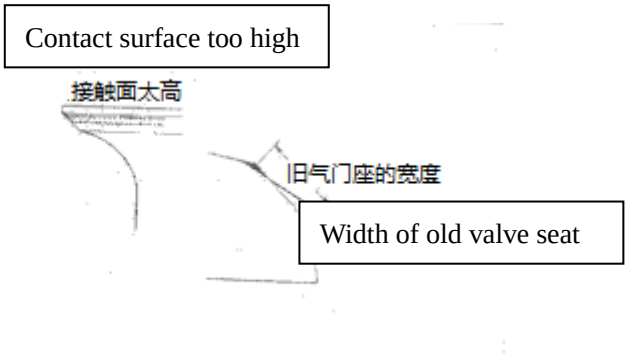


5.5.15 Cylinder head assembly

Note: Before assembling the valve, the oil shield should be placed on the valve guide.

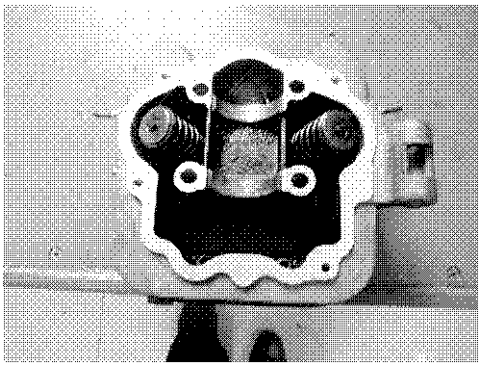
After applying oil to the intake and exhaust valve stems, install them into the valve guide. Install the valve spring and valve spring seat.

Note: When installing the valve spring, the denser end of the spring should be made toward the cylinder head.



Then use the valve remover to press down the valve spring, then insert the valve lock

clip into the valve spring seat.



Note: To prevent permanent deformation of the valve spring, do not over compress the spring , only need to fit the valve lock clip.

Then tap the end of the valve with a plastic hammer to make the lock clip firmly into the ring groove.

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Oil shield

5.5.16 Cylinder head installation

Install new gasket and locating pin

Note: Do not allow dust and impurities to enter the cylinder

Install the cylinder head and insert and support the timing chain to prevent it from falling into the box.

Install the cylinder block connecting bolt 2×M6

Torque value: 8~12N・m

Mounting the camshaft on the cylinder head

Mount the rocker support bracket

Install the Ab bolt fastening nut and gasket ring

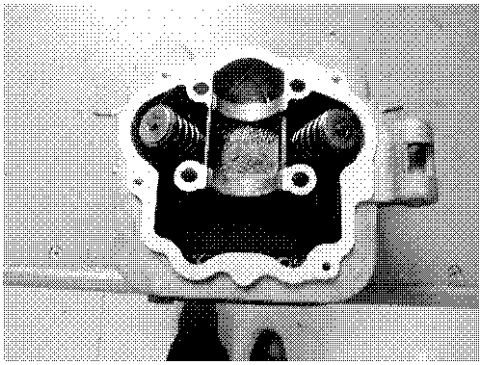
Nut torque：28~30

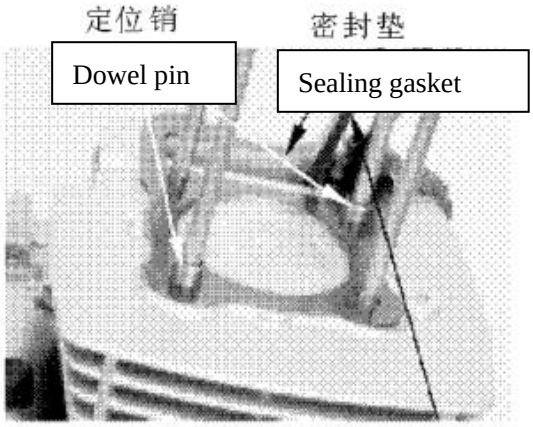
Note: When installing the camshaft, first

brake the magneto rotor in a clockwise direction so that the “T” mark is aligned with the indicator. At the same time,ensure that the 2×Φ3 hole connection line is parallel to the head cover joint surface, and the Φ6 hole is perpendicular to the head cover joint surface. When tightening the cylinder head, first tighten the AB bolt nut and then tighten the cylinder connection bolt.

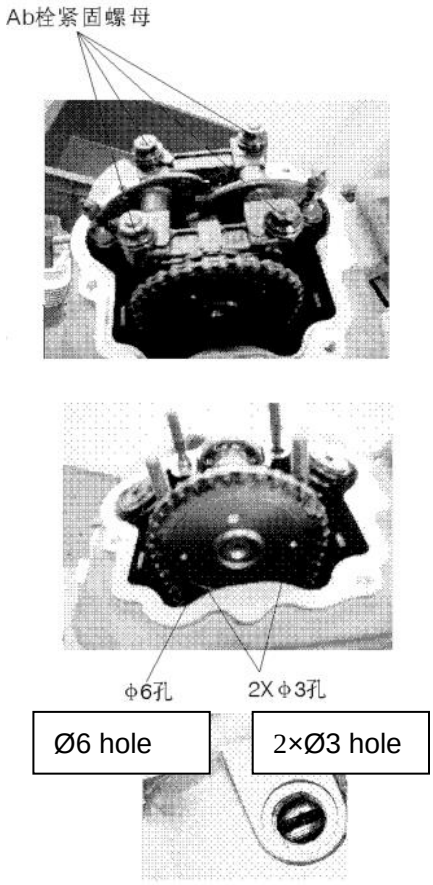
Injecting lubricant

Note: Before installing the camshaft, fill the oil groove on the cylinder head with clean engine oil until the cam on the camshaft can be immersed in the oil..





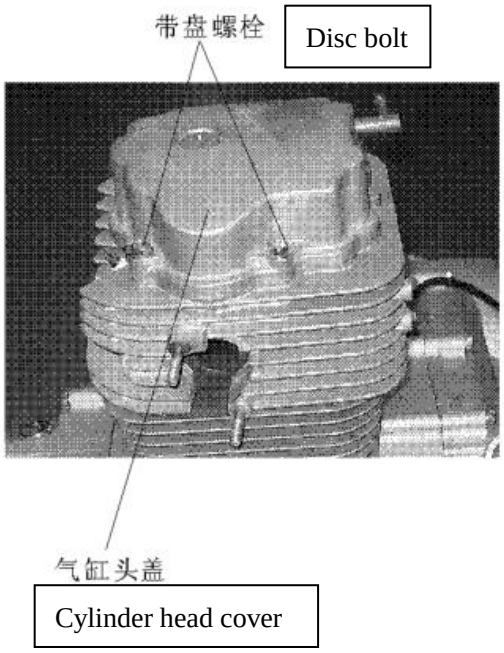
Ab Bolt lock nut



5.5.17 Cylinder head cover installation

Install a new "O" ring into the groove on the cylinder head cover

Install the cylinder head cover and tighten the 4 reel bolts



5.6 Cylinder and piston

Maintenance instructions

The camshaft lubricating oil is injected into the cylinder head through a measuring hole in the engine casing. This measuring holes must not be blocked. Before installing the cylinder, install new gaskets and locating pins; do not allow dust and impurities to seep into the

crankcase..

Specifications

item			standard（mm）	Maintenance limit（mm）
cylinder	Cylinder inner diameter		62~62.01	62.1
	Taper		—	0.10
	Out of roundness		—	0.10
	Top distortion		—	0.10
Piston, piston ring and piston pin	Piston diameter		61.965~61.975	61.78
	Piston pin hole inner diameter		15.002~15.008	15.04
	Piston pin and piston pin hole clearance		0.002~0.014	0.02
	Piston ring end gap	Top ring / second ring	0.250~0.350	0.50
		Oil ring	0.3~0.7	—
	Clearance between Piston ring and piston ring groove	Top ring	0.015~0.050	0.09
		Second ring	0.015~0.045	0.09
	Clearance between Cylinder and piston		0.03~0.06	0.10
	Piston pin outer diameter		14.994~15.000	14.96
Connecting rod small end	Inner diameter		15.014~15.022	15.064
	Clearance between Connecting rod end and piston pin		0.01~0.034	0.10

5.6.1 Troubleshooting

Low or unstable compression:

1. Cylinder or piston ring is worn
2. The cylinder, piston or piston ring is worn
3. The piston ring is not installed correctly.
4. Scratches or scratches on the piston or cylinder wall

Overheat:

1. Excessive carbon deposit
2, there is knocking or abnormal noise
3, the piston or cylinder is worn

5.6.2 Cylinder disassembly

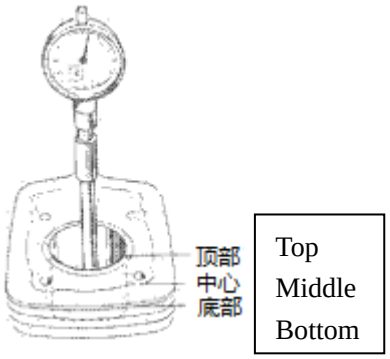
Cylinder

Remove the cylinder head (→5.5.5)
Remove the positioning pin and paper pad
Remove the cylinder

Note: When removing the cylinder, the timing chain must never fall into the crankcase.

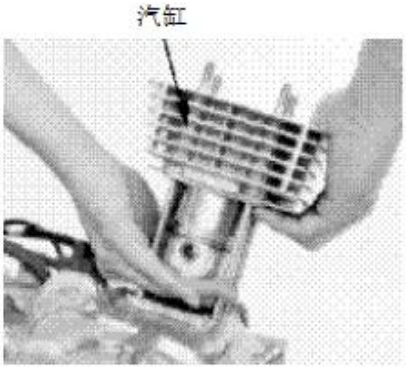
Scrap the paper gasket remainings on the cylinder surface with a scraper.

Note: If the paper gasket is immersed in gasoline, it is easy to disassemble. Avoid damage to the cylinder contact surface during this operation.



Cylinder inspection

Check the cylinder for wear or damage
The inner diameter of the cylinder should be measured in three positions, that is, the top, middle and bottom of the piston stroke, and should be in two directions at right angles to each other.
Maintenance limit: 62.1mm
Measure the taper and out of roundness
Out of roundness: 0.10mm：0.10mm



5.6.3 Piston disassembly

Remove the piston pin retaining ring with pliers

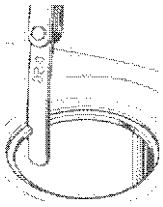
Note: The retaining ring cannot be dropped into the crankcase.

Press the piston pin out of the piston and remove the piston

Piston/piston ring inspection

Measuring the gap between the piston ring and the groove of the piston ring
Maintenance limit:
First ring: 0.09mm
Second ring: 0.09mm
Remove the piston ring

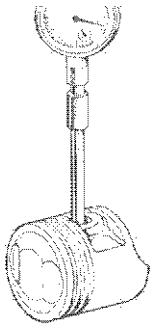
Note: Do not damage the piston ring when disassembling.



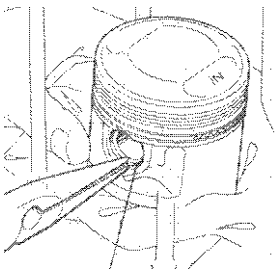
Insert each piston ring into the cylinder and measure the end gap

Maintenance limit:

First ring / second ring：0.5mm



Check the piston and piston ring groove for wear or cracks.



Measuring piston pin hole inner diameter

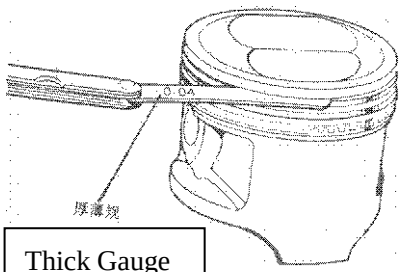
Maintenance limit: 15.04mm

Measure the outer diameter at 10 mm above the bottom end of the piston skirt

Maintenance limit: 61.78mm

Calculate the gap between the cylinder and the piston

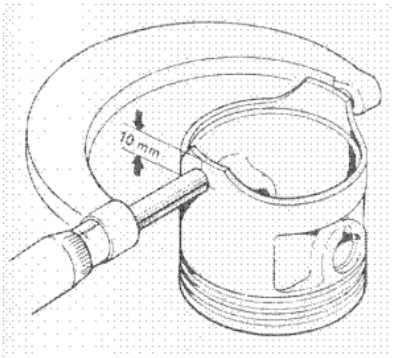
Maintenance limit：0.1mm



Thick Gauge

Measure the outer diameter of the

piston pin
Maintenance limit: 14.96mm
Calculate the gap between the piston and the piston pin
Maintenance limit: 0.02mm



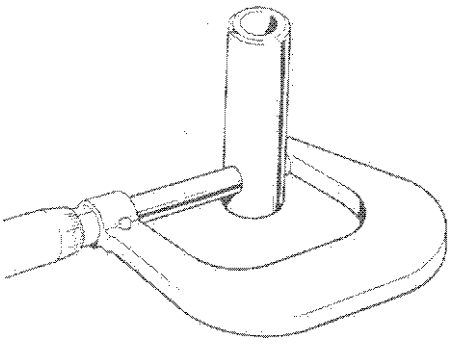
5.6.4 Piston installation

Piston ring installation

Thoroughly clean the piston ring groove
Assemble the piston ring

Note: Pistons and piston rings should be protected during installation.
damage
When installing the piston ring, the marked side is facing up
After installation, the piston ring should be free to rotate
Do not reverse the mounting position of the top ring and the second ring.

Separate the piston ring end gap by 120°, do not align the gaps of the oil rings with each other.

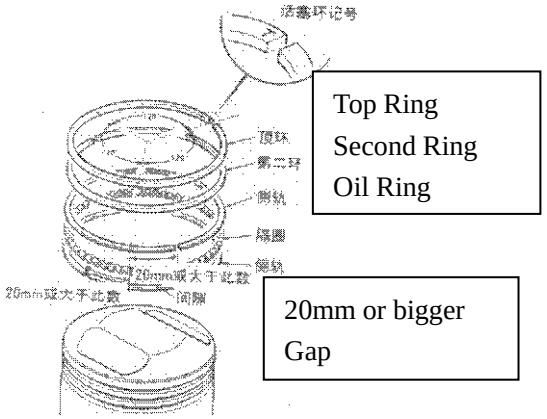


An oil ring consisting of three rings, the gap between the rings should match the gap of the spacer
When installing the oil ring, install the spacer first, then install the side ring.

20mm

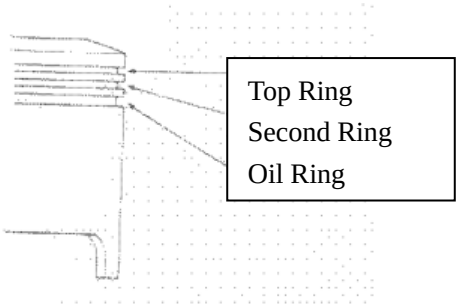
Piston installation

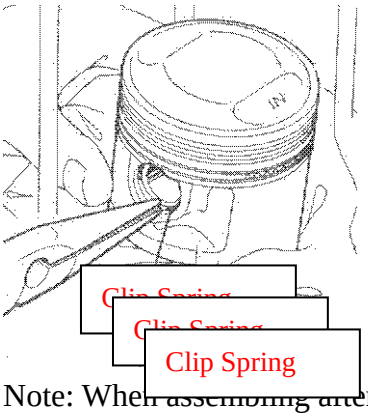
Install the piston, piston pin and new piston retaining ring.



Note: When installing the piston, the side marked with the “IN” mark should be aligned with the intake valve.

The end gap of the piston pin retaining ring should be staggered from the piston incision





Note: When assembling after disassembly, be sure to use a new piston

Pin retaining ring

D Clip Spring on pin retaining rin nkcase.

Clip Spring

Piston mark

5.6.5Cylinder installation

Install new paper gasket and positioning pin

Apply a layer of oil to the cylinder and piston ring
Install cylinder

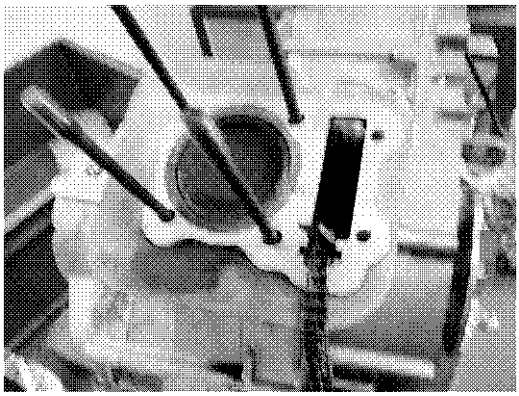
Note: When installing, avoid destroying the piston
Can't let the timing chain fall into the crankcase.

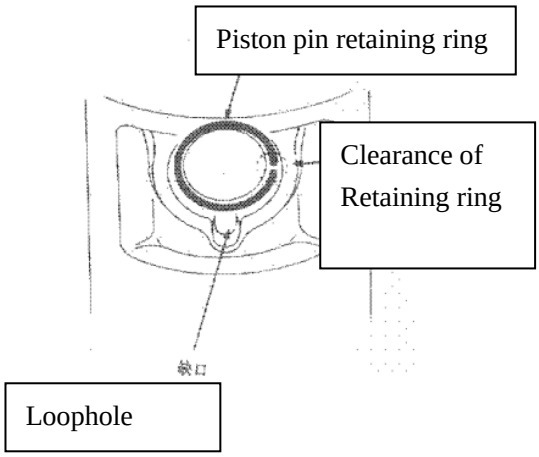
Install the timing chain guide plate

Install new paper gasket

Install the positioning pin

Install the cylinder head





5.7 Oil pump

Maintenance instructions

The installation and maintenance work after removing the right crankcase cover can also be operated without removing the engine;
Do not allow dust or impurities to enter the engine when the oil pump is removed;
It is not allowed to repair the oil pump. If a certain size reaches the maintenance limit, the entire oil pump should be replaced.

Technical specifications

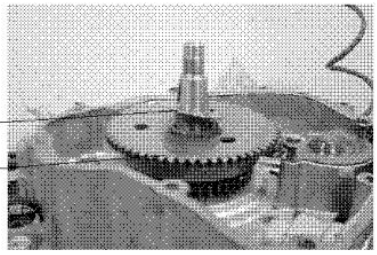
	item	standard（mm）	Maintenance limit（mm）
Oil pump	clearance between inner rotor and outer rotor	—	0.12
	clearance between outer rotor and pump body	—	0.12
	Axial clearance between rotor surface and pump body	0.05~0.1	0.2

5.7.1 Disassembly of the oil pump

Oil pipe, Spring

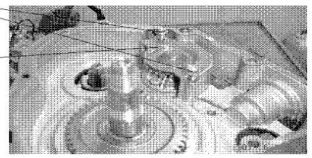
M14 NUT

Rotor



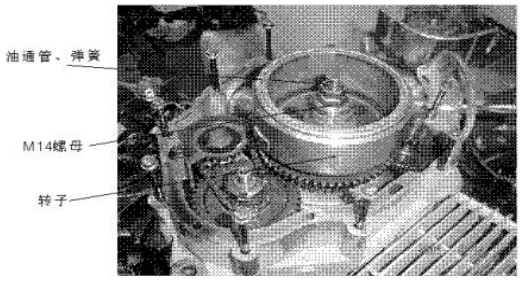
Remove the oil pipe and spring
Remove the magneto motor fastening nut M 14 and washer
Remove the magneto rotor
Remove the one-way tightening nut M 22 (left-handed) and washer
Remove the one-way device
Remove the oil pump sprocket cover fastening bolt 2×M6
Remove the oil pump sprocket cover

Unidirectional Washer



Unidirectional Device

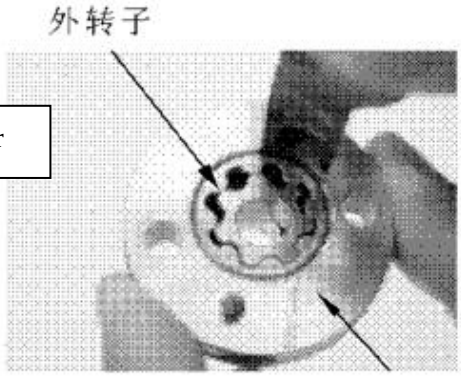
Sprocket Cover Fastening



cover

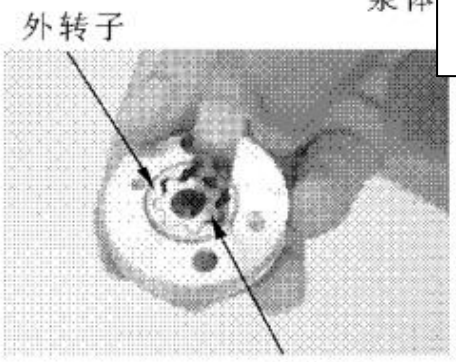
Remove the oil pump driven wheel lock nut
Remove the balance shaft lock nut M16 (left-handed)
Remove the oil pump main and driven wheels
Remove the oil pump lock bolt
Remove the oil pump

M6 bolt
Oil pump driven wheel

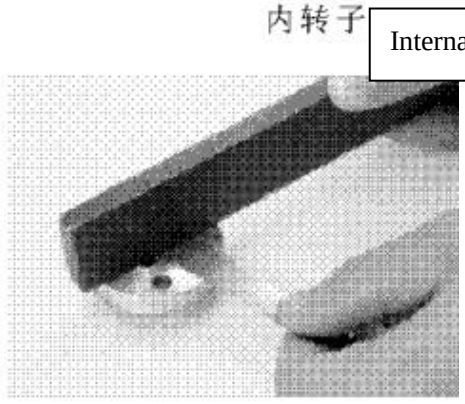


5.7.2 Oil pump inspection

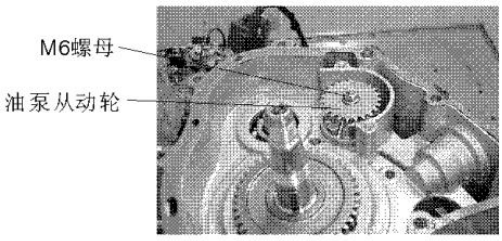
If the radial clearance between the outer rotor and the pump body is greater than 0.12, the oil pump should be replaced.



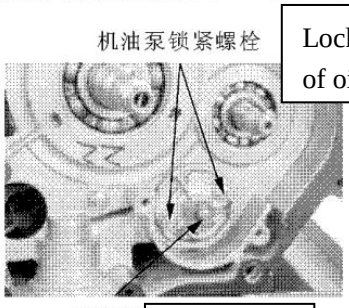
If the radial clearance between the inner rotor and the outer rotor is greater than 0.12, the oil pump should be replaced.



If the axial clearance between the rotor surface and the pump body is greater than 0.2, the oil pump should be replaced.

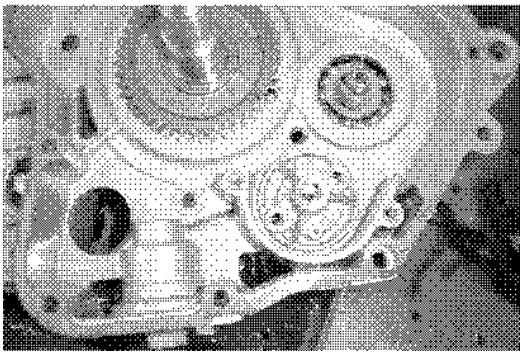


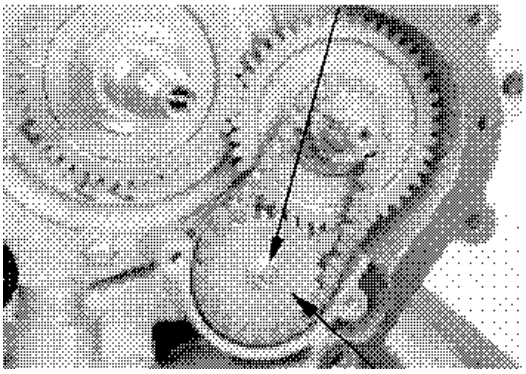
5.7.3 Oil pump installation



Install the oil pump in the correct position (pump mark control, mark hole on the box)
Install the oil pump lock bolt
Install the oil pump main and driven wheels
Install the balance shaft lock nut M16
Install the oil pump driven wheel lock nut M6
Install the oil pump sprocket cover

Install the oil pump sprocket cover fastening bolt 2×M6
Install one-way device
Install the one-way fastening nut M 22 and washer
Installing a magneto rotor
Install the magneto motor fastening nut M 14 and washer
Install oil pipe and spring





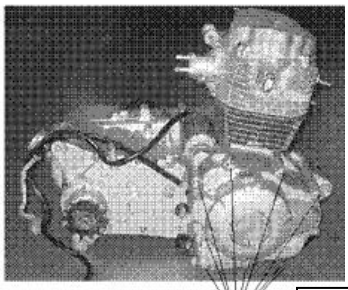
5.8 Right crankcase cover and magneto

Maintenance instructions

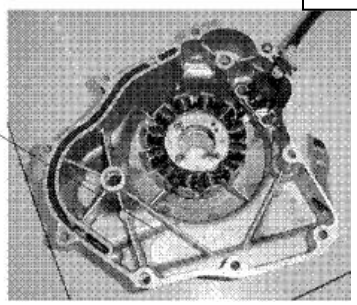
For the disassembly and installation of the magneto motor described in this section, simply remove the right crankcase cover, no need to remove engine.

Torque value
Right crankcase cover fastening bolt: 8~12N • m
Magneto rotor bolt：35~40N m

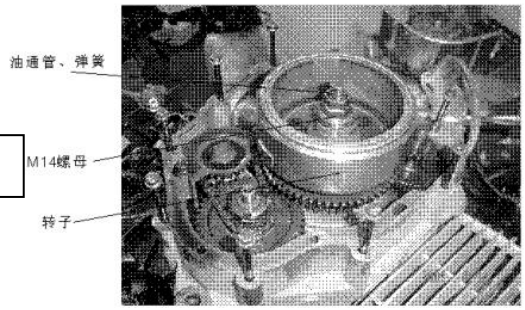
5.8.1 Disassembly of the right crankcase cover



Remove the 9×M6 bolt
Remove the right crankcase cover



5.8.2 Magnetic motor disassembly

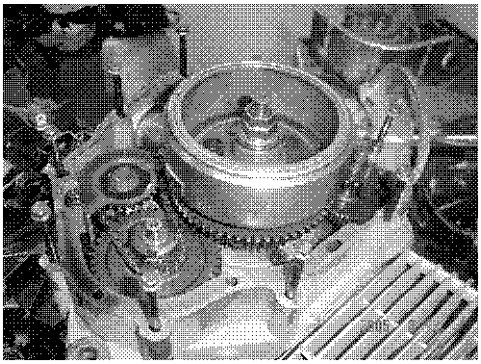


Remove the oil pipe and spring
Fix the flywheel rotor
Remove the rotor fastening nut M14
Remove the magneto rotor with the rotor puller

5.8.3 Magnetic motor installation

Install the magneto in reverse order of disassembly

Note: The semi-circular button on the crankcase is aligned with the magneto motor groove

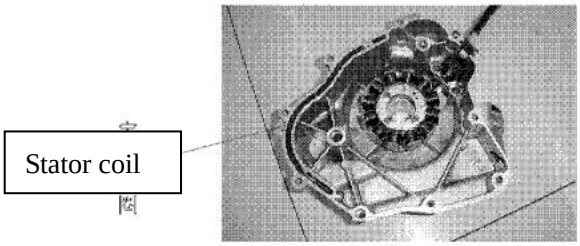


Tighten the rotor nut to the specified torque value

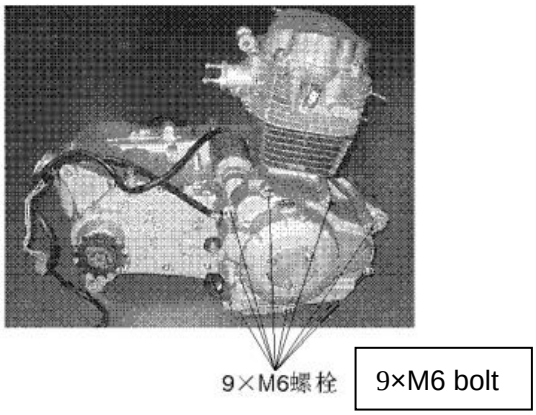
Torque value：35~40 N ·m

5.8.4Right crankcase cover installation

First install the stator coil



Then tighten the 9×M6 bolts according to the specified torque.



9×M6 bolt

5.9 CVT parts

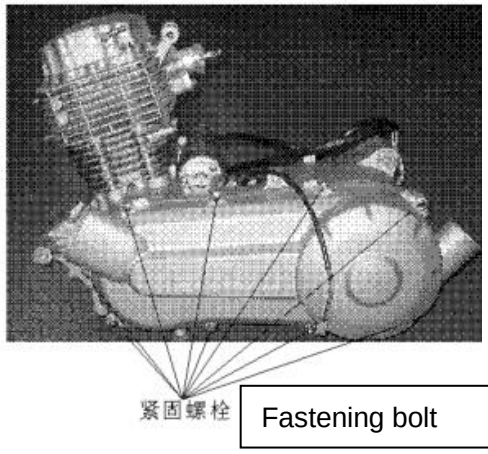
Maintenance instructions

The removal and detection of the left crankcase cover and CVT components eliminates the need to remove the engine from the frame and can be disassembled and tested directly on the vehicle.

5.9.1 Disassembly of the left crankcase cover

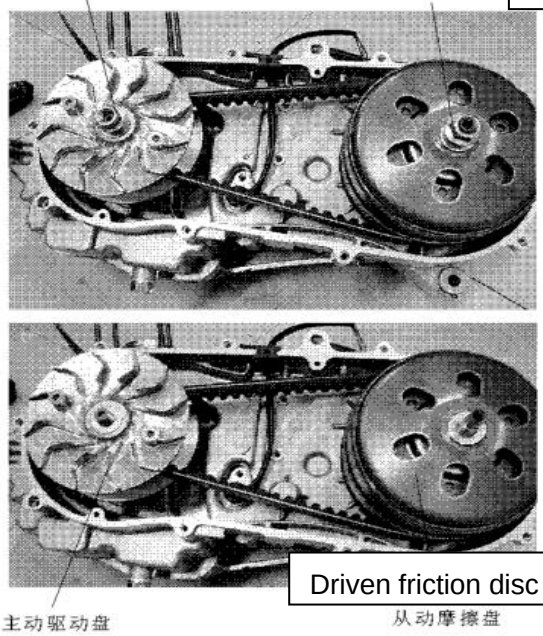
Remove the left crankcase cover tighten bolt 9×M6

Remove the left crankcase cover



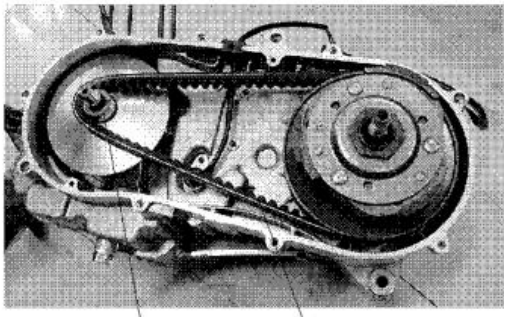
5.9.2 Disassembly of CVT parts

Remove the M12 nut and washer
Remove the active drive plate and the driven friction plate
Remove the drive disc bushing



Driven friction disc

Take out the belt
Take out drive and driven parts

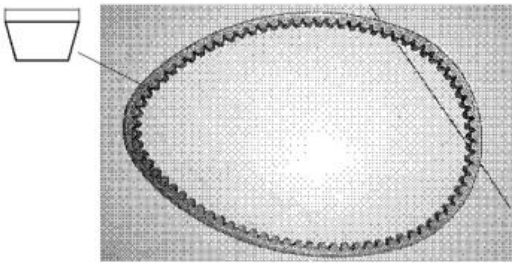


Active disc bushing

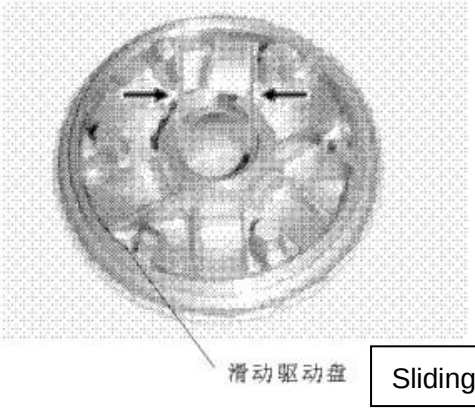
Belt

5.9.3 Inspect of CVT parts

Belt width less than 17mm should be replaced

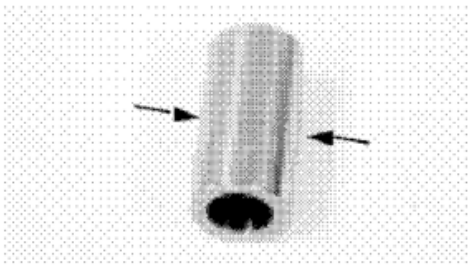


The sliding drive disc has a hole diameter greater than 27.06mm and should be replaced.



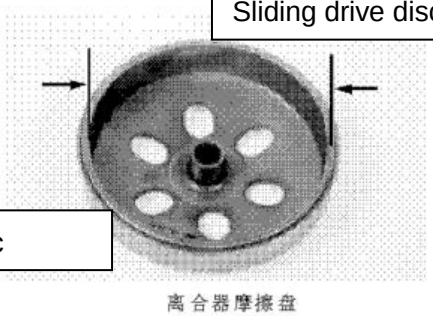
Sliding drive disc

The outer diameter of the sliding drive disc sleeve less than 26.94mm, then need to replace.



Sliding drive disc sleeve

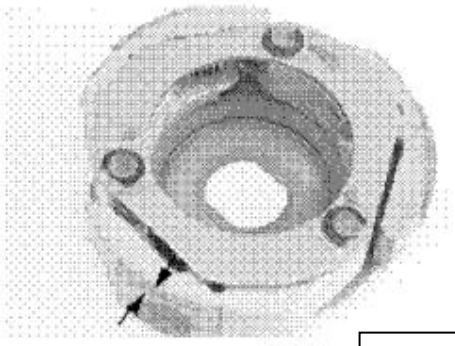
Clutch friction disc inner diameter greater than 130.5 mm should be replaced.



Clutch friction disc

Clutch friction disk

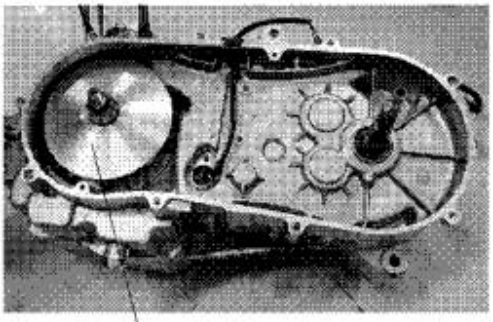
Clutch friction material thickness less than 2mm, then need to replace.



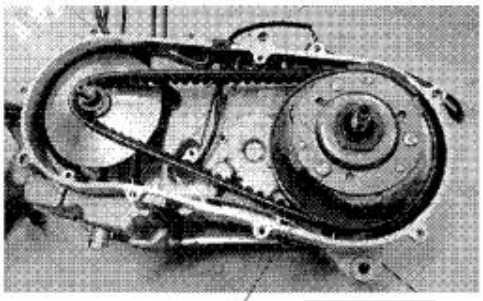
5.9.4 Install of CVT parts

Install the drive pulley unit
Install the belt into the clutch

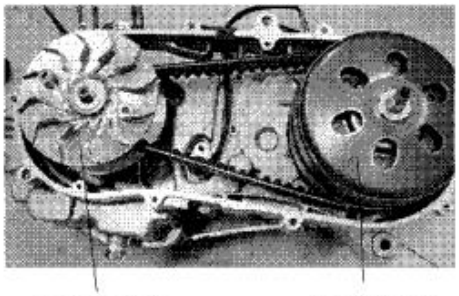
Install the clutch



Install active drive plate and driven friction plate
Fasten M12 nut and washer
Torque value：50~60 N ṁ

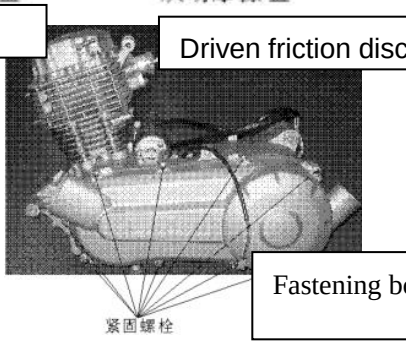


Note: When tightening the nut, first tighten the nut at the active drive plate.



5.9.5 Left crankcase cover installation

Mounting pin
Install the left crankcase cover (bolt 9× M6)
Torque value：8~12 N ṁ



Clutch friction disc
Fastening bolt

5.10 Crankcase, crankshaft, variable speed drive

Maintenance instructions

This section describes the disassembly and assembly of the transmission components and the crankshaft. When performing the above work, the crankcase should be separated first; the disassembly of other components of the engine should be performed before the crankcase is disengaged.

Work before crankcase separation

Cylinder head removal
Cylinder and piston disassembly
Disassembly of the right crankcase cover, magneto, and oil pump
Disassembly of the left crankcase cover and CVT components

Specifications

item			standard（mm）	Maintenance limit（mm）
Gear shift fork	inner diameter		12.00~12.018	12.05
	Claw thickness		4.93~5.00	4.50
Gear shift fork shaft	outer diameter		11.966~11.984	11.950
Crankshaft	Connecting rod small head inner diameter		15.014~15.022	15.06
	Clearance of Connecting rod side	Radial	0.004~0.008	0.05

5.10.1 Troubleshooting

Difficulty gear shifting

1. gear shift fork bent

2, gear shift fork shaft bent

Gear shift abnormal

1. The gear shifting ratchet claws are worn

2. The gear shift fork is bent or damaged.

3, gear shift fork shaft bending

Crankshaft has noise

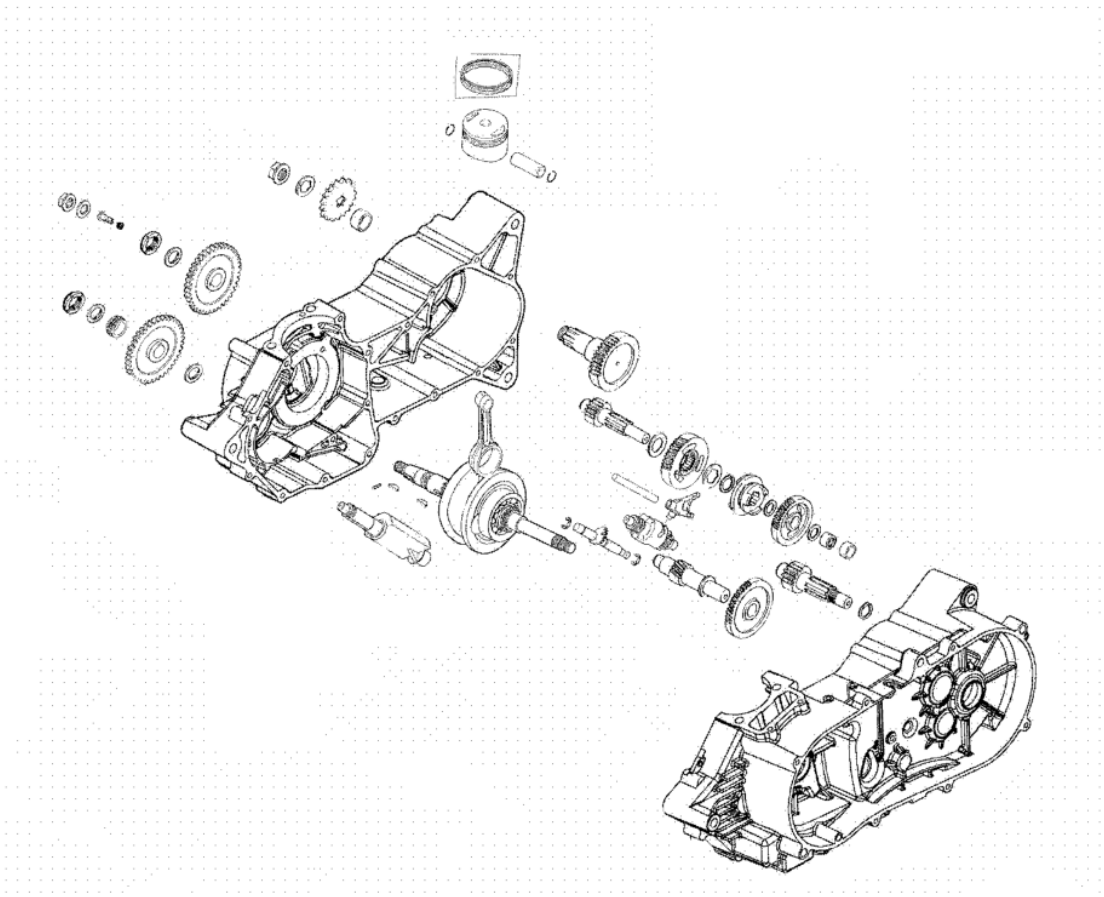
1, the connecting rod big end bearing wear

2, connecting rod bent

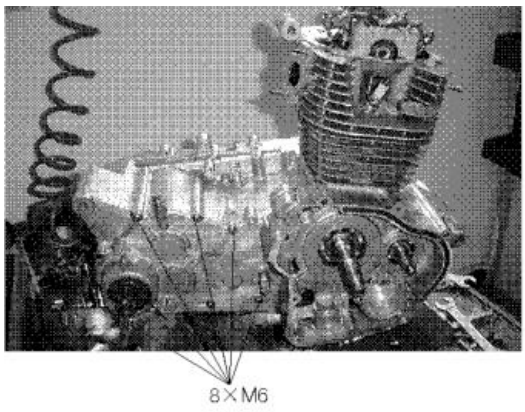
Gear shifting gear is noisy

1. Gear shifting gears are worn

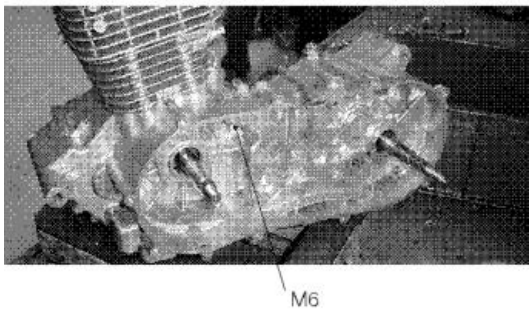
2, spline bearing wear



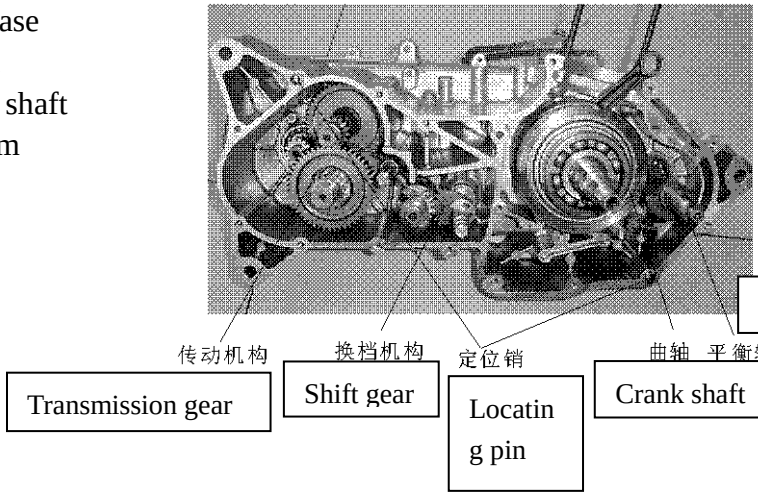
5.10.2Decomposition of the crankcase



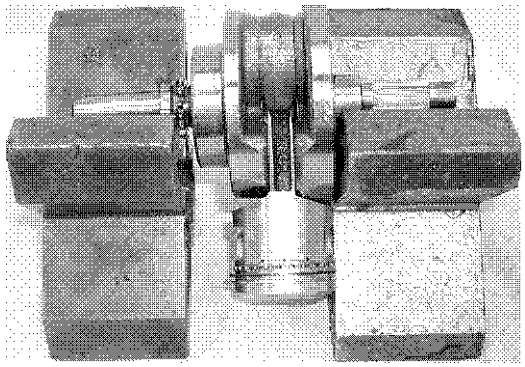
Place the engine on the workbench
Remove the right crankcase box bolt 8×M6
Remove the left crankcase box bolt M6



Turn the engine over so that the right crankcase is above
Remove the right crankcase and separate the left crankcase from the right crankcase
Remove the gasket and locating pin
Remove the crankshaft and balance shaft
Remove the transmission mechanism
Remove the shifting mechanism

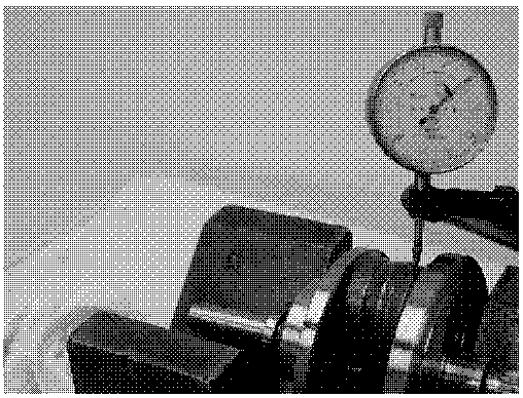


5.10.3 Crankshaft inspection

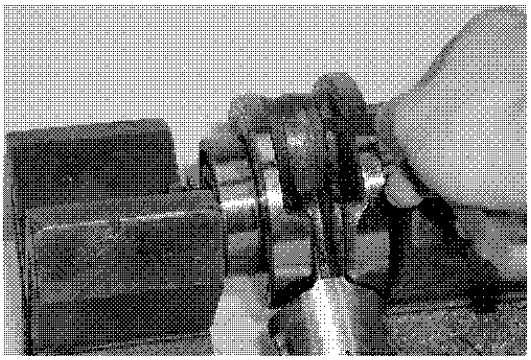


Place the crankshaft on the V-shaped iron
Measuring the curvature of the crankshaft with a dial indicator
The actual curvature of the crankshaft is 1/2 of the total reading (TIR)
Maintenance limit：0.10mm

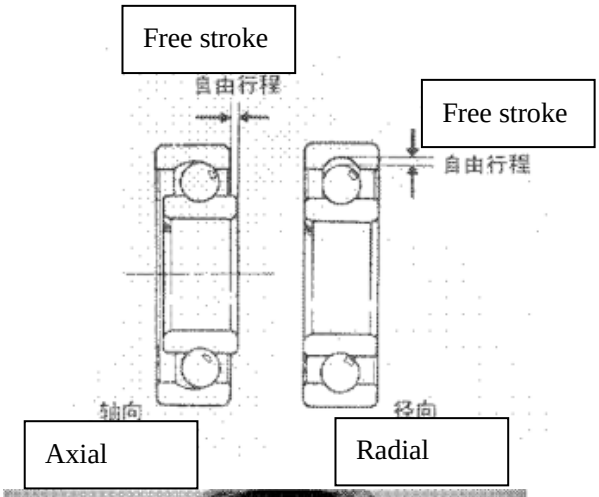
Measuring radial clearance of two points in the X and Y directions of the large connecting rod
Maintenance limit: 0.05mm



Measuring the big head gap of the connecting rod with the feeler gauge
Maintenance limit: 0.8mm

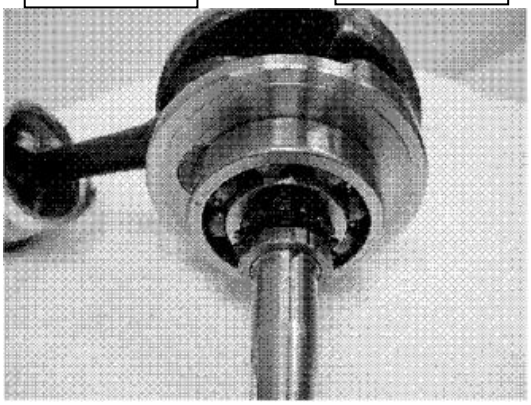


Turn the crankshaft bearing by hand and check its jumping in radial and axial. If the engine is noisy and the radial or axial jumping direction is too large, it should be replaced.



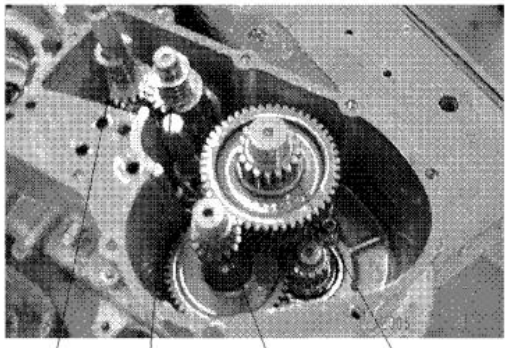
Timing sprocket disassemblely/ installation

Disassemble the timing sprocket on the crankshaft and check if sprocket teeth wearing or damage.
Install the sprocket on the crankshaft, the center of the gear should be aligned with the keyway on the crankshaft



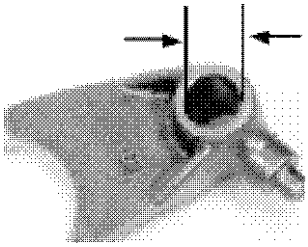
5.10.4 Decomposition of transmission components

Pull out the fork shaft and take out the fork
Take out the shift drum and shift shaft
Take out the reverse intermediate shaft and reverse drive shaft assembly

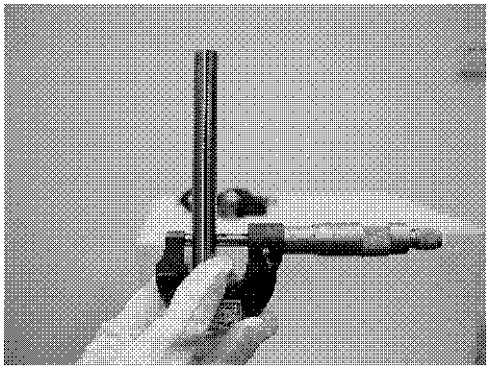


Shift fork, shift fork shaft, shift drum inspection

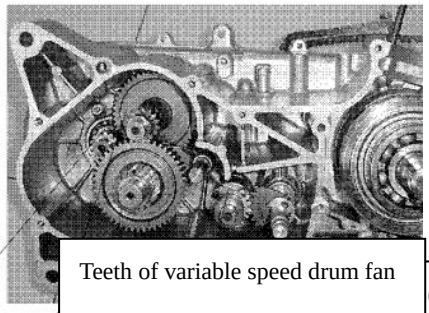
Check if each shift fork is wearing, bending or any other malfunction
Measuring the shift fork inner diameter and the thickness of the shift claw
Inner diameter maintenance limit: 12.05mm
Thickness maintenance limit: 4.5mm



Check if the shift fork shaft is wearing or bending
Measuring outer diameter
Maintenance limit: 11.96mm

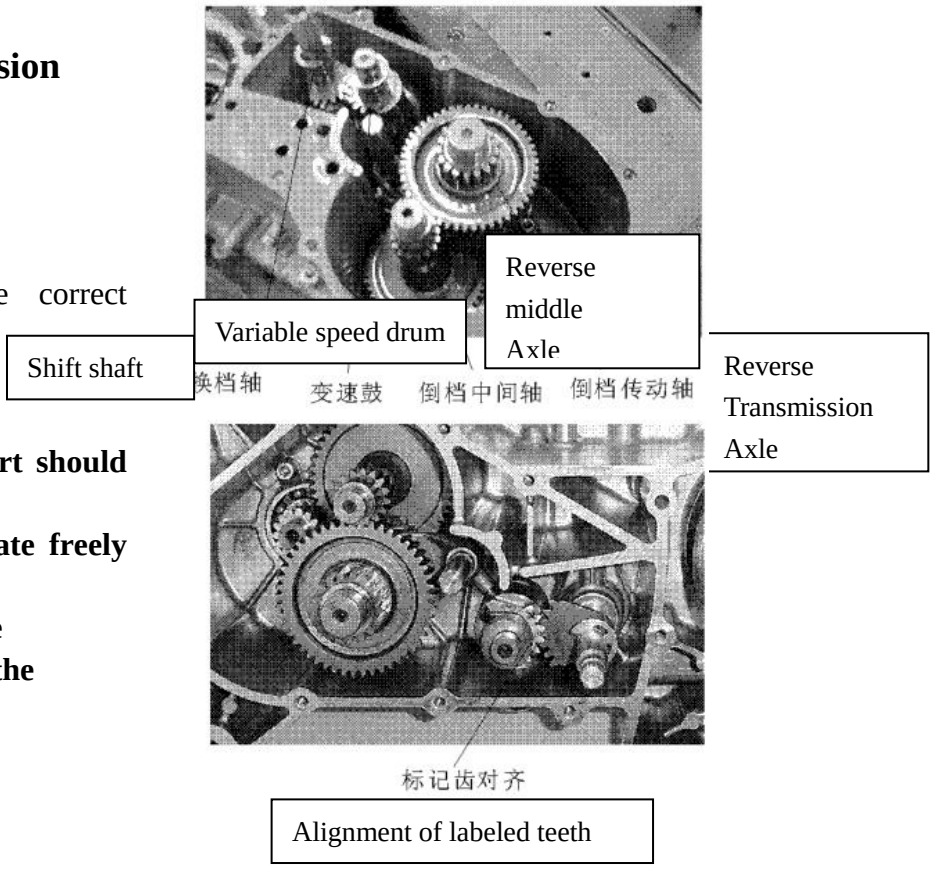


Check if the shifting fan sector teeth are abnormally damaged
Check if each tooth is abnormally worn



5.10.5 Assembly of transmission parts

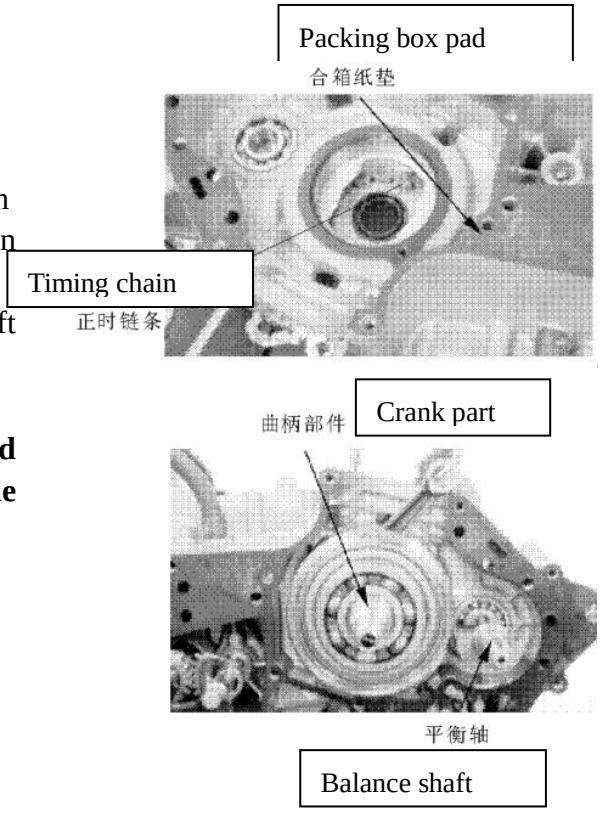
Install the components in the correct position, as shown in the picture:



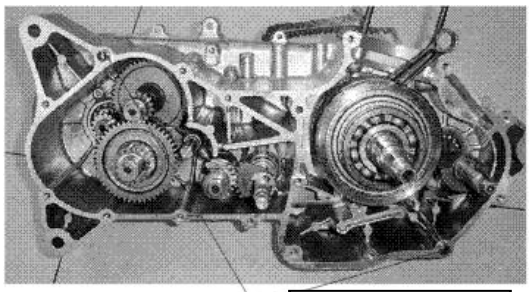
Note: Before assembly, each part should be coated with engine oil.
Check if the shift gear can rotate freely and without jamming.
Care should be taken to align the marking teeth when assembling the shifting drum and shifting shaft.

5.10.6 Crankshaft assembly

Lay the left crankcase flat on the workbench
Place the timing chain in the position showed in picture.
Load the balance shaft into the left crankcase

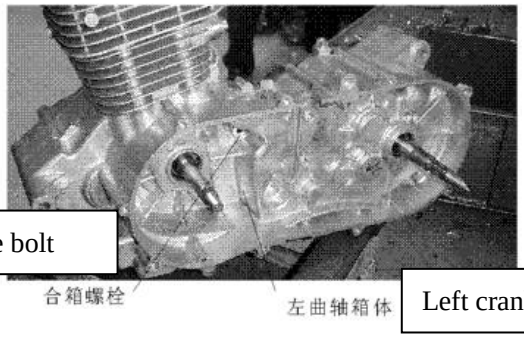


Note: After the crankshaft is assembled correctly, the timing chain should be able to pull freely without jamming.



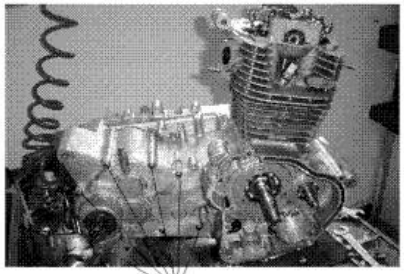
Locating Pin

Fit the positioning pin
Install the left crankcase
Fasten the bolts at the left crankcase
Fasten the box bolt at the right crankcase
Coupling bolt torque value: 8~12N・m



Closure bolt

Left crankcase



Closure bolt

5.11 Fault judgment

5.11.1 Engine can't start or start hard

Check direction

1、Check if the fuel reaches the carburetor → does not enter the carburetor → has entered the carburetor

possible reason
1. No fuel in the fuel tank
2, the oil switch is blocked
3, tubing blockage
4, carburetor float needle card jam

2、Remove the spark plug and check the spark → the spark is weak or completely no fire → the spark is normal

possible reason
1. The spark plug is damaged or not cleaned
2, the magnetic motor failure
3, ignition switch failure
4, sensor failure
5, igniter failure
6, ignition coil failure
7, high voltage cable failure
8, the power circuit has a short circuit or open circuit

1、Check cylinder pressure → pressure is too low → pressure is normal

possible reason
1. The valve clearance is too small or has no gap
2, the valve guide Xuan bent
3. The cylinder seat and the valve are not well matched.
4, cylinder and piston ring wear
5, the cylinder head gasket is not sealed well
6, the assembly is not in place
7, the timing of the valve is not correct

2、Restart the engine → the engine can ignite but still can't start → the engine does not ignite

possible reason

1. Throttle opening is too large
2. The carburetor plunger fine adjustment screw is improperly adjusted.
3, the intake pipe leaks
4, the ignition timing is not correct
5, remove the spark plug → spark plug wet → spark plug drying
6. Close the choke and restart the engine.
carburetor is not blocked

possible reason
1, carburetor rich
2,The carburetor choke is not open
3, the throttle is too large

5.11.2 Engine power is Insufficient

Check direction	possible reason
1. Gradually increase engine speed → no change in engine speed → normal engine speed increase	1, carburetor rich 2. The carburetor choke is not open 3, the throttle is too large
2. Check the ignition timing (using the ignition timing light) → the ignition switch is incorrect → the ignition timing is correct.	possible reason 1, the fuel system is not well supplied 2, carburetor choke closed 3, air filter blockage 4, carburetor cover air hole blockage 5, silencer blockage
3. Check the valve clearance → the valve clearance is incorrect → the valve clearance is correct.	possible reason 1. CDI igniter is damaged 2, the magneto is faulty 3, pulse generator failure
4. Check cylinder pressure → cylinder pressure is too low → cylinder pressure is normal	possible reason 1. Improper adjustment of valve clearance 2, valve seat wear
5. Check the carburetor → carburetor blockage →	possible reason 1, the valve clearance is too small 2, the valve is bent or stuck

3, valve seat wear
4, cylinder and piston ring wear
5, cylinder gasket damage
6, the timing of the valve is not correct
7, the spark plug is not assembled in place

possible reason
1, the fuel is not clean
2. The carburetor is not cleaned regularly

1、Check direction

1. Check ignition timing and valve clearance → incorrect → correct

2.Check if the carburetor connection has leakage → there is air leakage → no air leakage

6. Check the spark plug → the spark plug has too much carbon or the color is wrong → the spark plug is normal

possible reason
1, did not do regular maintenance work
2, the spark plug heat value is wrong
3, the spark plug electrode gap is too small

7. Remove the oil dipstick and check the oil volume → the oil quantity is incorrect → the oil quantity is normal.

8. Remove the valve cover and check the lubrication of the valve → the valve lubrication is not normal → the valve lubrication is normal

possible reason
1, the oil surface is too high
2, the oil surface is too low
3, the oil is not clean

9 Check if the engine is overheated → the engine is overheated → the engine is not hot

possible reason
1. Oil passage is block
2. The oil pump is not working properly.

10. During high-speed driving → the engine emits a knocking sound → the engine has no knocking sound

possible reason
1. Excessive carbon deposit in the combustion chamber
2. The fuel used does not meet the specifications.
3, the clutch slips
4, the mixture is too rich
5, too much oil

5.11.3 Poor performance at low engine speed and idle speed

possible reason
1, piston and cylinder wear

2. Excessive carbon deposit in the combustion chamber
3. The fuel used does not meet the specifications.
4, the ignition timing is too much ahead

2. Disassemble the carburetor fuel pipe → the fuel flow is restricted → the fuel can flow freely

possible reason
1, CDI failure
2, the magnetic motor failure
3, sensor failure
4, the valve clearance is too small

3. Check the carburetor → carburetor is blocked → carburetor is not blocked

possible reason
1. Carburetor seal ring deformation
2, the carburetor connection is loose
3, the seal ring rupture

4, check the timing of the valve → not correct → correct

Check spark plug fire condition → spark is weak or intermittent fire jump → spark is normal

possible reason
1, spark plug damage
2, the magnetic motor failure
3, ignition coil failure
4, CDI failure
5, the transmitter failure
6, switch failure
7, spark plug cap failure
8, the power circuit has a wrong connection or short circuit

5.11.4 Poor performance at high engine speed

Check direction

1. Check ignition timing and valve clearance → incorrect → correct

possible reason
1. Magneto motor failure
2, CDI failure
3, sensor failure
4, improper valve clearance

1. The fuel in the fuel tank has been used up.
2, the fuel tank lock cover air hole is blocked
3, the fuel tank to the carburetor oil circuit is blocked
4, the oil switch is blocked
5, gasoline filter is blocked

possible reason
1, the float needle is blocked
2, the float oil level is too low
3, carburetor volume hole is blocked
4, the float stuck

possible reason
1. Timing chain and timing sprocket are not installed correctly.
2, gear wear is serious

5, check the spark plug high-speed flashover situation → jump fire is not normal → jump fire is normal

5.11.5The engine has abnormal noise

Check direction

1. The valve makes an abnormal sound

2, piston and cylinder stroke

3, bearing abnormal sound

4, the cam chain is different

5. Transmission gear and driven gear are different

possible reason
1. Magneto motor failure
2, CDI failure
3, sensor failure
4, ignition switch failure
5, ignition coil failure
6, spark plug cap failure
7, spark plug failure
8, the power circuit has a

short circuit

possible reason
1, the valve clearance is too large
2, valve worn out

possible reason
1, piston and cylinder worn out
2, piston pin and small end connecting rod worn out
3, crank connecting rod head worn out

possible reason
1. Crank connection bearing is damaged
2, camshaft bearing worn out

possible reason
1, the chain is elongated
2, timing sprocket wheel tooth worn out
3, chain adjustment plate or guide plate worn out

4, improper adjustment of the chain regulator

possible reason
1. The machining accuracy of the gear is not good

6 Vehicle chassis

Maintenance information

Attention

• When carrying out maintenance work on the front wheel and suspension system, the frame must be securely supported before it can be used.

• Inspection, inspection and inspection of lights, instruments and switches are carried out according to the corresponding chapters.

• Do not use excessive force on the wheels. Be careful not to damage the wheel

• When removing tires from the rim, special tire and rim protectors must be used to avoid damage to the rim

Maintenance standard

item		standard	Use limit
Rim	Axial runout	0.8mm	2.0mm
	Radial runout	0.8mm	2.0mm
wheel	Residual trench	—	3mm
	Air pressure	35kPa(0.35kgf/cm^2)	—
Front brake	Brake handle clearance	0mm	—

Tightening torque

item	size	torque
Steering lock nut	GB9457 M10 × 1.25	33~45N ṁ
Front brake disc bolt	M8 × 20 × 1.25	22~30N ṁ
Front brake caliper body bolt	GB5789 M8 ×16	30~36N ṁ
Rim shaft slotted nut	GB9457-1988 M14 ×1.5 ×H18	209～278N ṁ
Front shock absorber bolt	GB5789 M10 ×1.25 × 45 Half thread	45～59N ṁ
Rim mounting nut	GB6187-86 M10 ×1.25	45~59N ṁ
Lower rocker bolt	GB5789 M10 ×1.25 × 80	45~59N ṁ

tool

inner hexagon m6	Assembly tool shaft
Open ratchet wrench s8	Pneumatic wrench s12
Open ratchet wrench s10-s12	Pneumatic wrench s14
Open ratchet wrench s14	Socket wrench m12
Open ratchet wrench s17-s19	Socket wrench m14
Open ratchet wrench s22	Socket wrench m20

Open ratchet wrench s24	Socket wrench m24
Phillips screwdriver	Needle-nose pliers
Flat mouth screwdriver	External circlip pliers
hammer	

6.1 Troubleshooting

Steering is too heavy

1. The upper bolt of the direction column is too tight
2. Steering bearing damage and wear
3, the inner and outer races of the bearing are damaged, worn, and stepped
4, the direction column deformation
5, low tire pressure
6, tire worn out

Second, the handle bar is shaking

1. Steering bearing damage and poor fastening
2, left and right shock absorbers are not supported
3, tire skew
4, frame deformation
5, tire eccentric worn out
6, wheel bearing shaking

Third, the front wheel is jumping

1, rim deformation
2, poor wheel bearing
3, bad tires
4, improper wheel balance
5, poor fastening around the wheel axle

Fourth, the wheel is not turning well

1, poor wheel bearing
2. Improper installation of the front wheels
3, brake tubing, cable clamp

Fifth, the front suspension is too soft

1. The front shock absorber is weakened
2, the tire pressure is too low

Sixth, the front suspension is too hard

1. The front shock absorber is damaged.
2, the tire pressure is too high

Seven, the front shock absorber abnormal sound

1. The front shock absorber is defective
2. Loose parts of the shock absorber are loose

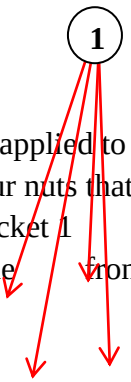
Eight, poor braking effect

1, poor brake adjustment
2, the surface of the brake disc is defaced
3, brake pad wear

6.2 Front wheel

Disassembly

Raise the front wheel with a tool to ensure that no force is applied to the front wheel



Remove the four nuts that are attached to the front wheel bracket 1

Remove the front wheel 2

Wheel inspection

Check if the rim 1 has damage, deformation, and scratches. Replace if there is any abnormality. Slowly turn the wheel and measure the runout of rim 1 with a dial gauge

Use limit: axial: 2.0mm

Radial: 2.0mm

Rim installation

Press the rim 2 into the tire on a special machine

Front wheel mounting bracket removal

Remove the front wheel

Remove the front caliper body 3

Take out the cotter pin 4

Remove the rim shaft mounting nut 5

Brake disc and mounting bracket are removed together

Remove the front wheel mounting bracket

Installation

Installation in reverse order of disassembly

Wheel rim mounting nut torque: 209N•m～278N•m

Brake disc mounting bolt torque: 30N•m～36N•m (threaded fixative)

Note: The rear wheel is disassembled and installed similar to the front wheel, please refer to the front wheel.

6.3 **Brake system**

Front brake caliper disassembly

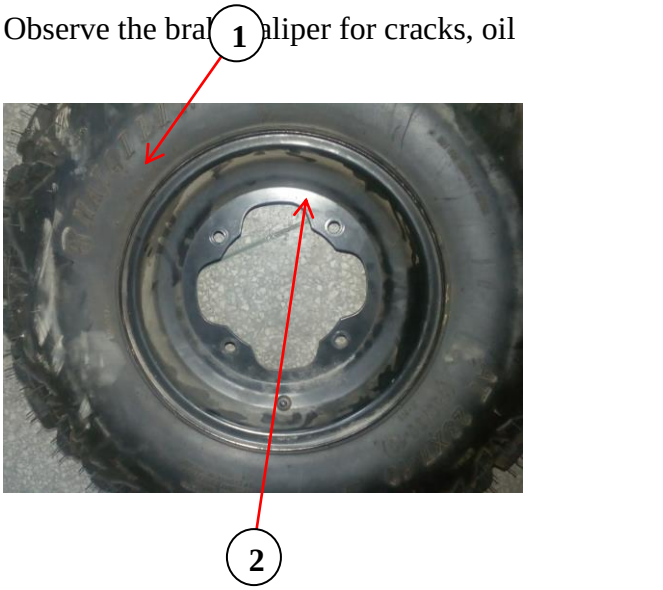
Remove the front wheel

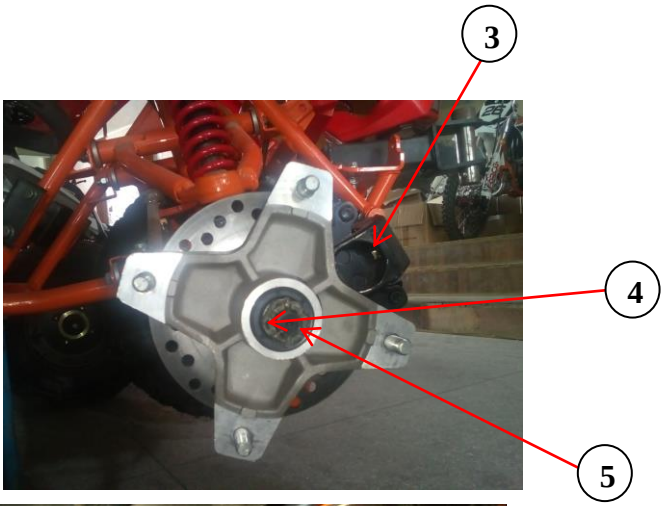
Remove the 2 bolts mounted on the steering knuckle 6

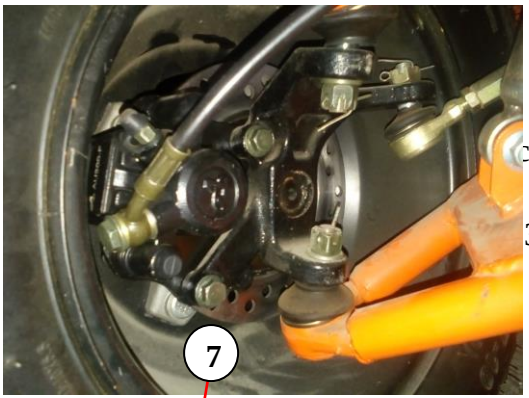
Remove the brake caliper 7

examination

Observe the brake caliper for cracks, oil







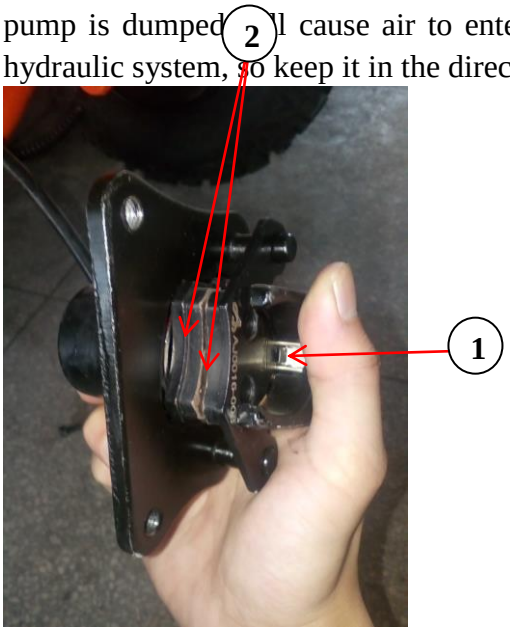
Brake pad removal
Loosen a fastening bolt
Rotating brake caliper 1
Remove the brake pad 2
examination
The thickness of the brake pad friction layer 2 is measured. When the thickness of the brake pad friction layer 2 is less than or equal to 1 mm, the two brake pads are simultaneously replaced with a new one.
Installation
Installation in reverse order of disassembly

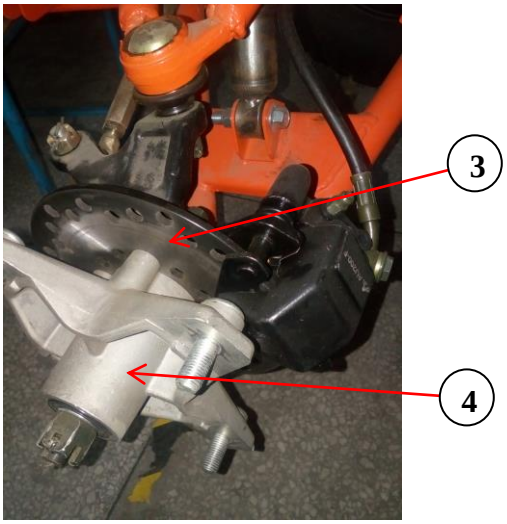
Brake disc removal
Remove the front wheel
Remove the brake caliper
Remove the brake disc 3 and the front wheel bracket 4 from the vehicle together

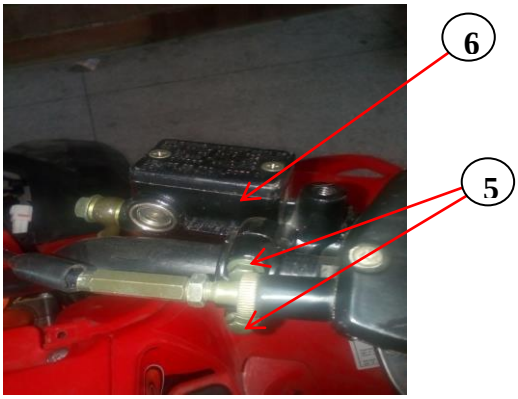
examination
Front brake disc thickness: less than 3.0mm, replace the new brake disc
Installation
Install the brake disc
Brake disc fixing bolt torque: 22N•m～30N•m

Disassembly of front brake hand brake pump
Remove the bolt 5
When the front brake hand brake pump 6 is disengaged, the front brake hand brake pump does not need to be removed from the vehicle body when the brake pump assembly is not replaced.
Installation
Installation in reverse order of disassembly

Note: Do not use the brake hose to suspend the brake pump
Fearing that the front brake hand brake pump is dumped will cause air to enter the hydraulic system, so keep it in the direction of the mounting position while fixing it to the steering handle.
The direction of the oil pipe on the car body, according to the first chapter cable, wire type routing, must ensure the smooth flow of the brake oil circuit.
When the brake system assembly is installed, the braking force must be checked.





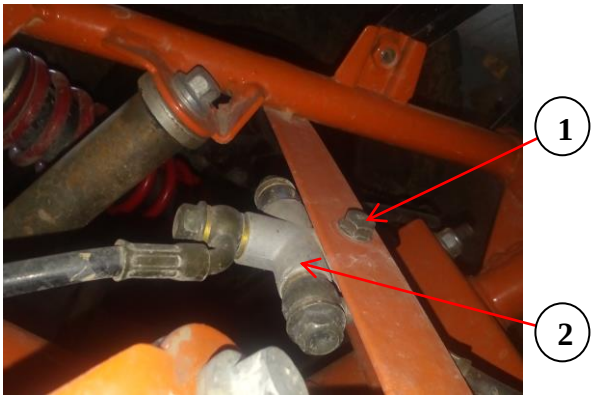


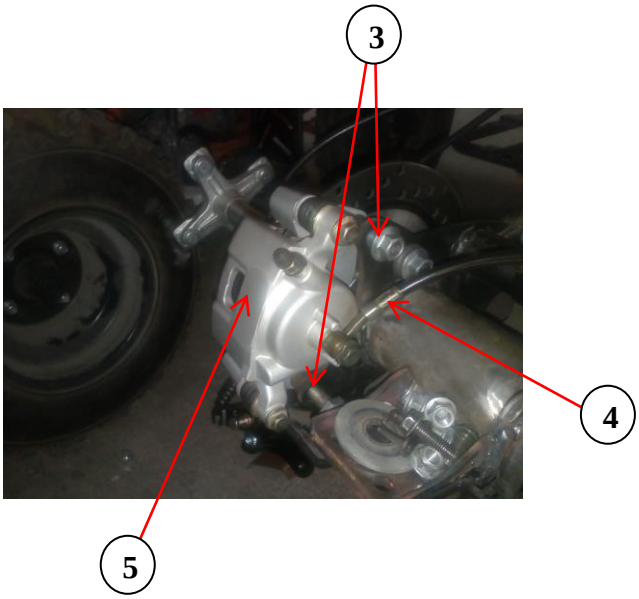
Brake tee joint disassembly
Remove the bolt 1
Will brake the tee joint 2 separate the car body
Installation
Installation in reverse order of disassembly
Note: The direction of the oil pipe on the car body, according to the first chapter cable, wire type wiring diagram, must ensure the smooth brake system of the brake oil circuit, when the assembly is installed, the braking force must be checked

Rear brake caliper body removal
Remove the bolt 3, parking brake cable 4
Remove the rear brake caliper 5
installation
Installation in reverse order of disassembly
Note: The direction of the oil pipe on the car body, according to the first chapter cable, wire type wiring diagram, must ensure that the brake circuit of the brake circuit is installed, the brake force must be checked, if the front and rear can not be linked control Brake system, check whether the joint is connected. Check whether the brake fluid in the brake oil cup is between the upper and lower limit marks. If necessary, add the brake fluid recommended by KAYO to the upper and lower limit marks. Check that the brake switch and brake light are working properly.

6.4 Front suspension system

Disassembly of the right front suspension combination
Note: When repairing the suspension system, the left and right suspension systems cannot be removed at the same time, otherwise the car body will fall down without support.

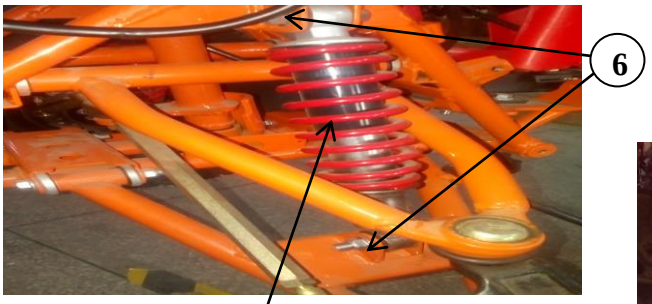




Park the car body at the level on the ground and secure the front of the vehicle with a jack.
Remove the front assembly board
Remove the front wheel
Remove the brake caliper
Remove the front hub bracket

Remove the bolts on the front and rear lower rocker arms of the right front shock absorber.

Remove the front shock absorber 7



Remove the bolts on the frame and the nuts that fasten the b on the right front upper rocker arm 1

Remove the right front upper rocker ball pin and install the split pin and nut on the right knuckle 2

Remove the right front upper rocker arm 3

Remove the split pin and lock screw on the steering rod ball pin

Remove the bolts and nuts that are attached to the frame by the right front lower rocker arm. 5

Remove the right front lower rocker ball pin locking bolt 6

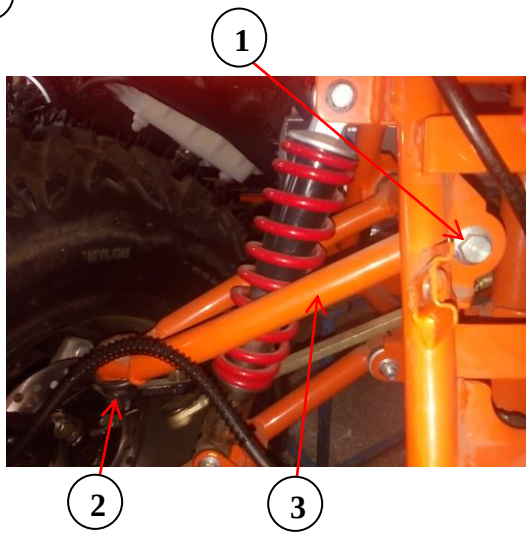
Remove the right front lower rocker 7

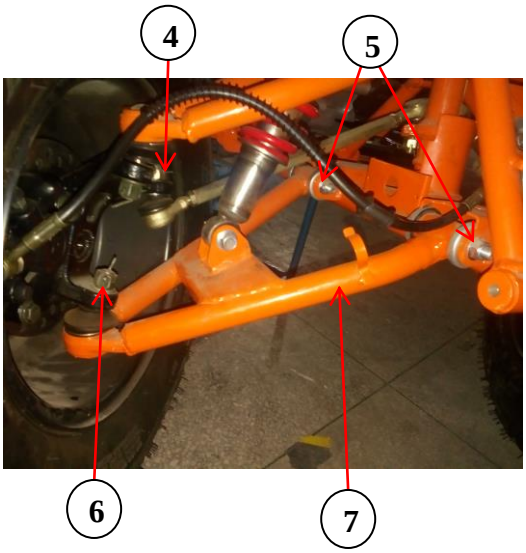
Pull the steering knuckle out of the drive shaft. The car's suspension system is available in a variety of configurations to suit different customer groups. The above describes the suspension system of the basic configuration. The maintenance methods of the suspension system of other configurations are similar. You can refer to the above method for maintenance.

Installation

Installation in reverse order of disassembly

The disassembly, installation and inspection method of the left front suspension combination is combined with the right front suspension





Disassembly and assembly of the right front rocker arm

Remove the right front shock absorber

Remove the bolts on the frame and the nuts that fasten the bolts on the right front upper rocker arm 1

Remove the bolts that attach the right front lower rocker arm to the frame and the nuts that tighten the bolts. 5

Before removing the shock absorber, first remove the wheel, brake caliper and rim bracket

Before removing the bolts, first remove the steering rod

Pull the knuckle out of the front constant drive shaft before removing the right front rocker assembly

Remove the right front rocker arm combination

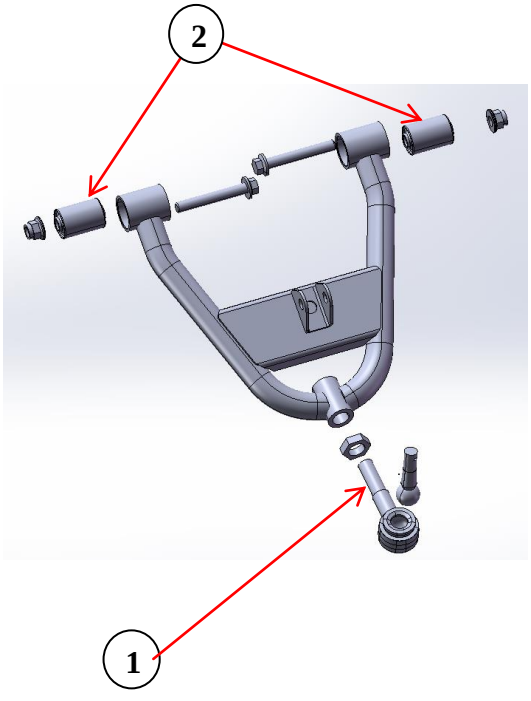
Check the upper and lower rocker arms

Remove the right front upper rocker welding combination 3

Remove the upper ball combination 8

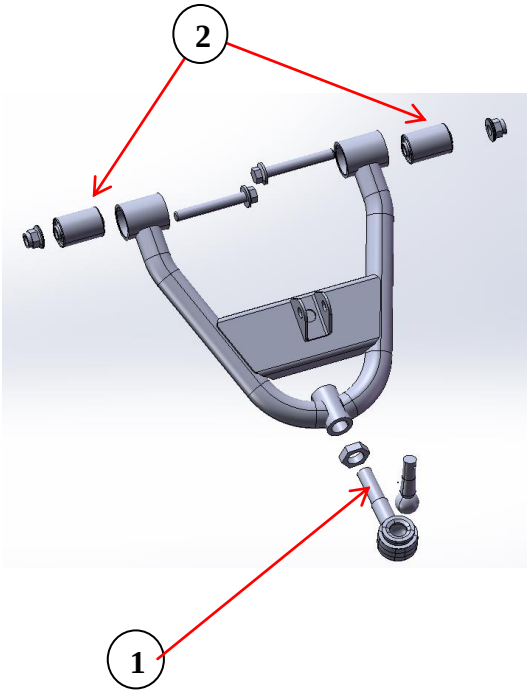
Check whether the grease in the ball pin has deteriorated (grease type: No. 2 lithium grease GB7324-87). Whether the dust cover on the ball pin is broken or aged, if there is any problem, replace the new ball pin.

Remove the buffer sleeve combination in the right front upper rocker welding combination to check whether the buffer sleeve combination is damaged or deteriorated, and if necessary, replace it with a new one.



Installation
Installation is in reverse order of disassembly.

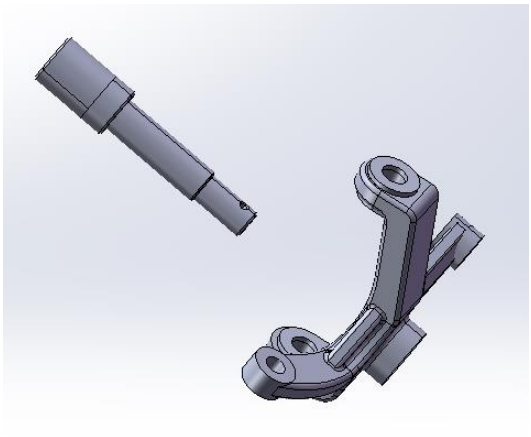
Remove the right front lower rocker welding combination
Remove the lower ball combination 1
Check if the lower pin combination 1 can be flexibly rotated in all directions and the clearance in the upper ball pin, if it is not flexible or the clearance is too large; check whether the grease in the ball pin is deteriorated (fabric type: No. 2 lithium grease GB7324 - 87), if the dust cover on the ball pin is broken or aged, if the above problem occurs, the new ball pin should be replaced.
Remove the buffer sleeve combination in the right front lower rocker welding combination
Check the buffer sleeve combination 2 for damage, aging, and replace with new if necessary.



installation
Press the ball pin into the rocker arm combination with a special tool
Installation in reverse order of disassembly

Note: The upper and lower rocker arms should not be shaken after installation. If there is shaking, replace the new buffer sleeve combination.

Check the right knuckle
Remove the right knuckle
Remove the hub bearing with a special tool
Check if the hub bearing is damaged, if the rotation is flexible, if the clearance is too large, and if there is a defect, replace it with a new one.



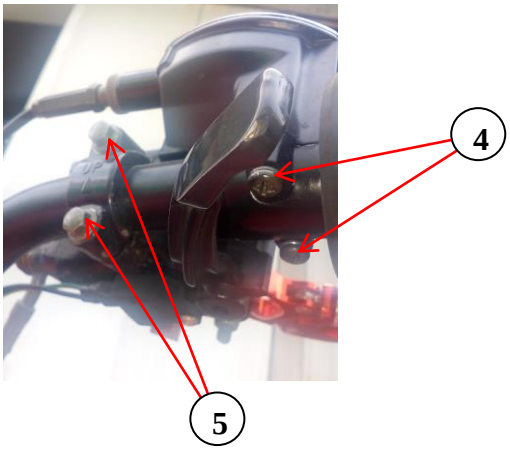
Release connector
Remove the left handle switch multi-function plug 8

Installation
The left and right hand switch assemblies are reversed in reverse order

6.5 steering system

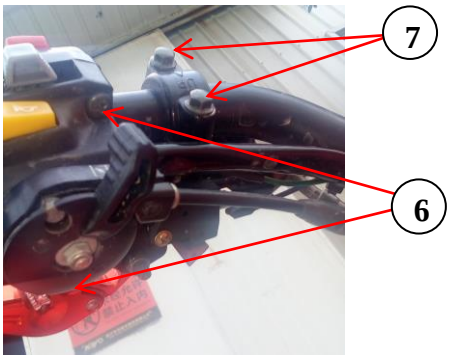
Direction

Dash cover removal
Remove the instrument cover 1 , instrument panel 2 ,
Installation
Installation in reverse order of disassembly



Handle removal
Disassembly of the right hand switch assembly
Remove the screw 4
Remove the bolt 5
Remove the front hand brake pump
Remove the right hand switch assembly

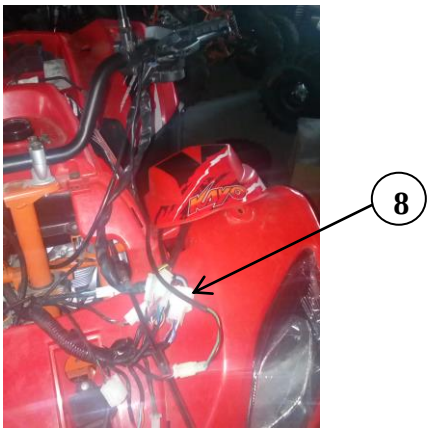
Disassembly of the left hand switch assembly
Remove the screw 6
Remove the bolt 7
Remove the rear hand brake pump
Remove the left handle switch assembly



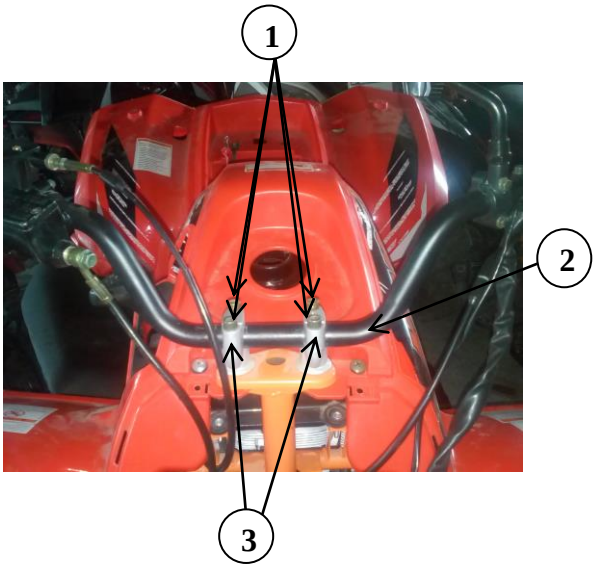
Throttle cable

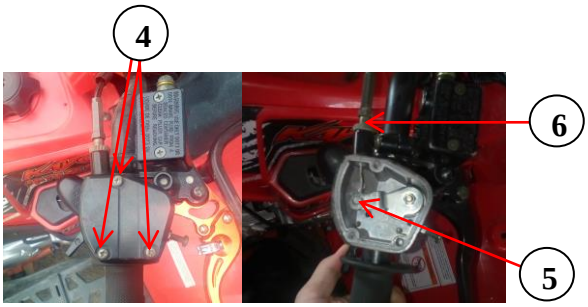
Disassembly
Remove the screw 4
Remove the right hand
Remove the throttle cable connector 5
Unscrew the throttle seat connector 6
Remove the throttle cable

Installation
Installation in reverse order of disassembly



Directional removal of the tube
Remove the meter cover
Remove the left and right handles
Separate the hydraulic brake handbrake pump from the direction handle
Remove the bolt 1
Remove the upper pressing block 3
Remove the direction to remove the tube 2
Installation
Installation in reverse order of disassembly
Directional mounting bolts for aluminum cover: M8 × 35
Torque: 30N•m～36N•m (3.0kgf•m～3.6kgf•m) Note: The main cable assembly, throttle cable, brake oil pipe and cable connecting wire should be arranged correctly according to the picture.





Remove the fixing bolts 3
Remove the clamp plate 4
Remove the clamp 5

Remove the split pin 6
Remove the lock nut 7
The steering shaft assembly can be removed by lifting the steering shaft upwards

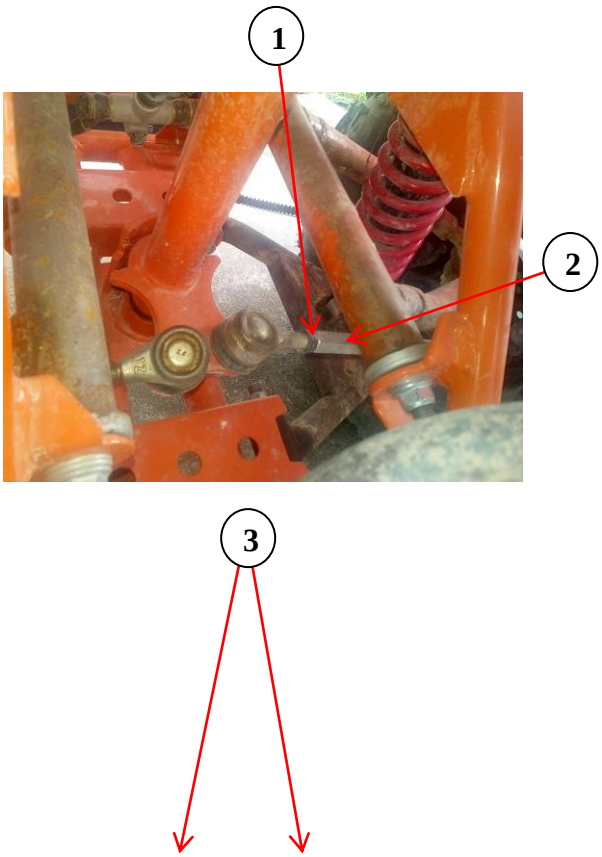
Installation
Installation in reverse order of disassembly

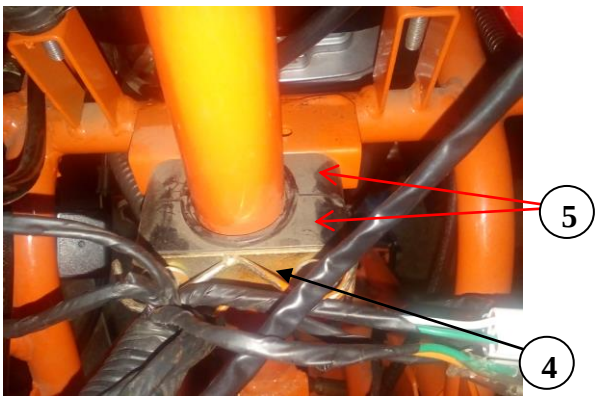
Note: When installing the split pin, replace the new split pin; after the installation is completed, check the steering flexibility and the left and right steering angles are the same; cable and cable type cable according to the first chapter cable, cable type cable; When turning the rocker arm, be sure to place the steering rocker arm in the center and then assemble the steering shaft. When assembling the steering shaft, be sure to assemble it patiently. Make sure that the right and left steering angles are the same,

steering system

Steering shaft assembly
Disassembly
Remove the meter cover
Remove the front assembly board
Remove the front wheel
Remove the direction to remove the tube
Remove the rear brake parking handle combination
Remove the hydraulic brake hand brake pump
Remove the tube and the left and right handles
Loosen the lock nut on the steering rod 1 (left and right)
Remove the steering lever 2

Remove the steering rocker (1 set for left and right)





Remove the bolts on which the rear shock absorber is mounted on the car body and on the flat fork assembly 1
Remove the rear shock absorber 2

examination
Check the rear shockremoved and adjust the adjustment cam 3 to the appropriate position

installation
Installation in reverse order of disassembly

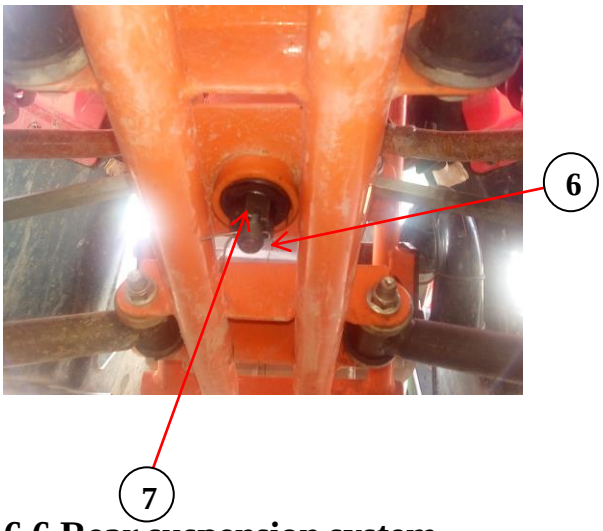
6.7 Rear drive shaft assembly

ear drive shaft assembly

disassembly

Before removing the rear drive shaft, the vehicle body should be suspended, otherwise the car body will fall down due to the lack of support at the rear of the vehicle.
Park the car body at the level on the ground, and use the jack to stabilize the rear support of the vehicle and start the operation.
Remove the rear assembly board
Remove the rear wheel

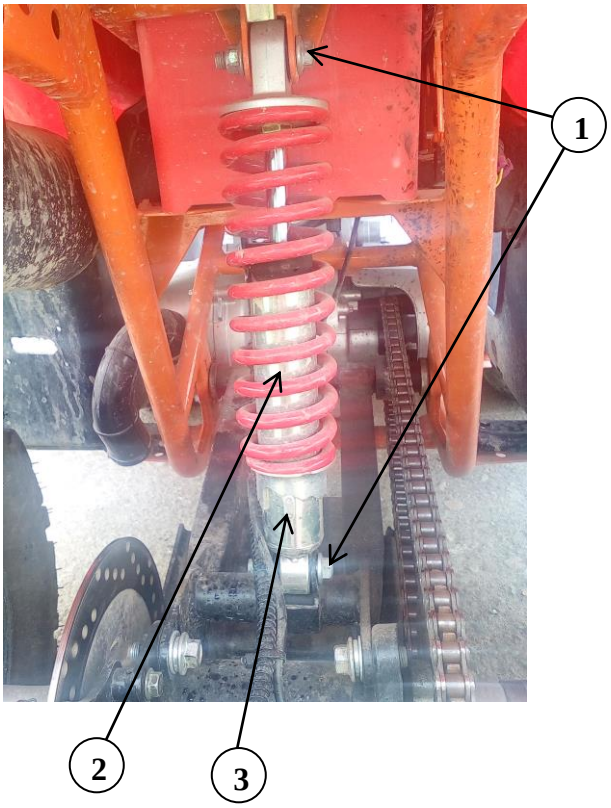
then lock the parts.



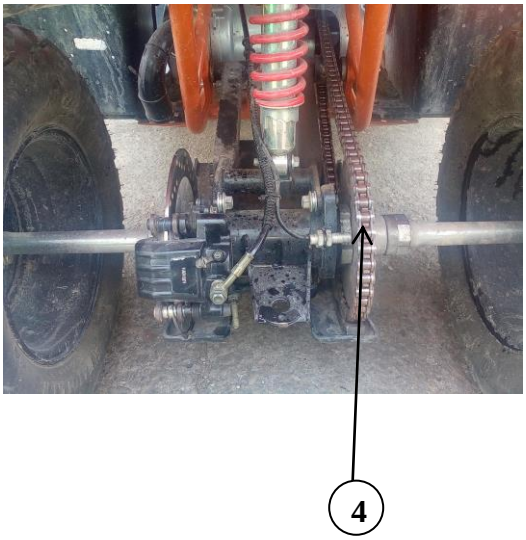
6.6 Rear suspension system

Rear shock absorber removal

When repairing the suspension system, the vehicle body should be suspended first, and the system should be suspended after disassembly, otherwise the car body will fall down due to lack of support.
Park the car body at the level on the ground and secure the rear support of the vehicle with a jack
Remove the rear assembly board
Remove the rear wheel
Remove the brake caliper

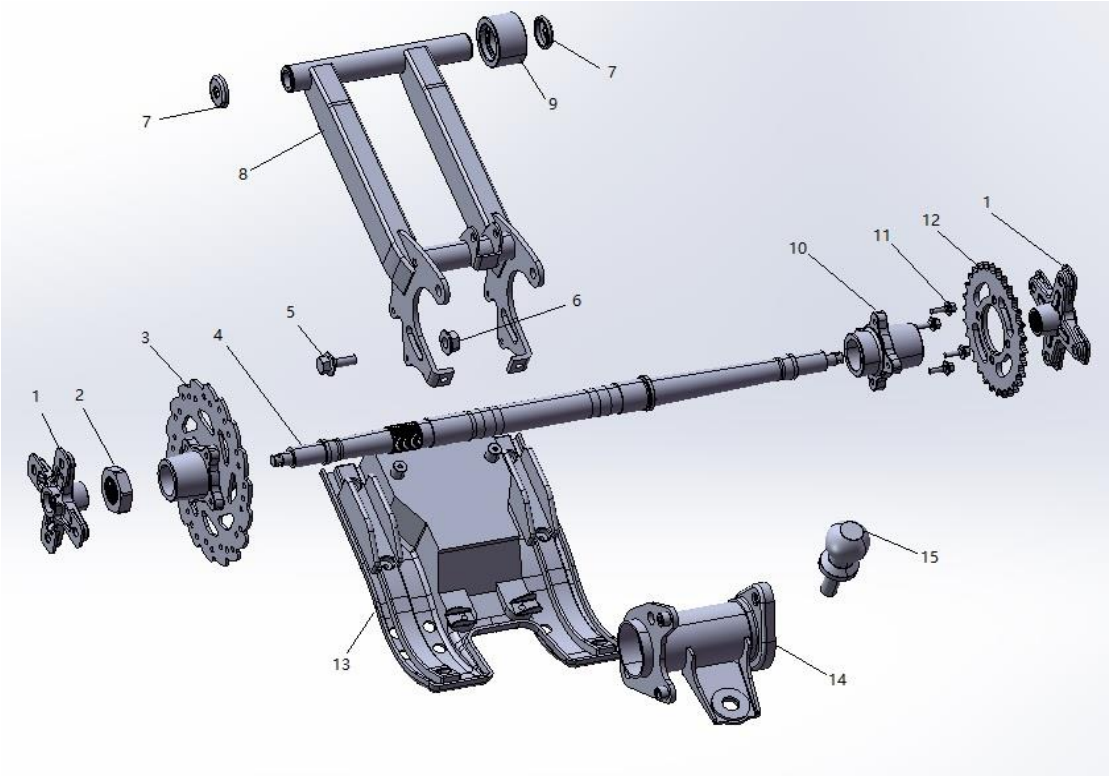


Remove the drive chain 4
Remove the rear brake caliper
Remove the rear shock absorber
Remove the flat fork assembly and the frame connecting bolts and nuts
Remove the rear drive shaft assembly



Examination

The rear view of the rear drive shaft assembly of the vehicle is as follows



no	item	quanti ty	no	item	quanti ty
1	Rear hub	2	9	Flat fork guide sleeve	1
2	Big nut	1	10	Rear sprocket seat	1
3	Rear disc brake disc	1	11	Screw（M8×20）	4
4	transmission shaft	1	12	Chain wheel	1
5	Fastening bolt （M12×30×1.25）	4	13	Plastic supporter	1
6	screw	4	14	Back bridge	1
7	Steel bushing	2	15	ball	1
8	Flat fork assembly	1			

Inspection after disassembly of rear drive shaft

- Check if the rear hub is damaged. If it is damaged, replace it with new ones.
- Check the thickness of the disc brake disc. If the thickness of the disc brake is ⩽ 3mm, replace the disc brake disc with a new one.
- Check if the drive shaft is bent or damaged, if any, replace it with a new one.
- Check the flat fork assembly. If it is damaged, replace it with a new one.
- Check the rear sprocket. If the gear teeth are damaged, replace the new sprocket.
- Check if the remaining parts are damaged. If there is any damage, replace the new ones.

installation

In reverse order when the rear drive shaft is disassembled

Note: When installing the bushing, apply a lithium grease containing molybdenum disulfide to both ends of the flat fork shaft.

7 Signal and lighting system

Maintenance instructions

When the inspection work is carried out, the whole vehicle can be energized; when disassembling and installing the work, the whole vehicle should be powered off first, and the hands should be dry.

Various specifications

item	size	quanti ty	note
Front left turn signal	White cover/ yellow light E4-6R-0162294	1	Light bulb can be changed
Front right turn signal	White cover/ yellow light E4-6R-0162294	1	Light bulb can be changed
Left headlight	JUTELCA5 E4-113R-0125787 E4-7R-0225787	1	Light bulb can be changed
Right headlight	JUTELCA5 E4-113R-0125787 E4-7R-0225787	1	Light bulb can be changed
Rear tail light	LED/Red with plug-inE4-7R-028580	2	Replace only
Rear left and right turn signal	LED/yellow with plug-inE4-6R-0161626	2	Replace only
Instrument, light for fault	4 pieces of magnetic sensor / magnet	1	
Electric horn	12V-1.5A EEC II-E9-00.6287	1	

7.1 Fault judgment

First, the left headlights are not bright
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged

Second, the right headlights are not bright
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged

Third, the front left turn signal is not bright
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged

Fourth, front right turn signal
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged
Five, the rear tail light is not bright
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged

Six, the rear left turn signal is not bright
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged

Seven, the rear right turn signal is not bright
1, the bulb is damaged
2, the connector is not well contacted
3, the handlebar switch is damaged

Eight, the electric horn is not loud or too light
1, the speaker is damaged
2, the connector is not well contacted
Damaged handlebar switch

7.2 Headlight inspection

Turn the ignition switch to ON and turn the light switch to lighting shift, check if the headlights are litght or not

- Light up: Normal
- does not light up:
  The main cable is broken or shorted
  Fuse off
  Switch damage
  bulb damage

If the headlamp bulb is damaged, replace the bulb

7.3 Lamp replacement

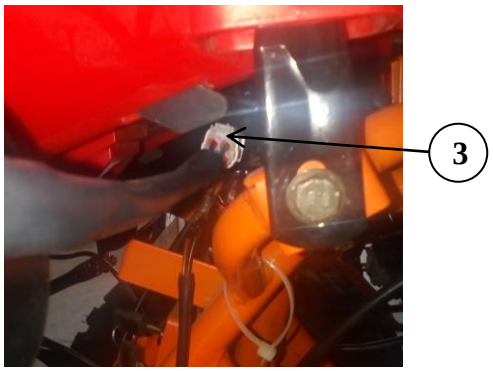
Headlight bulb
Note
The headlamp bulb has a large power, and the temperature is high when the lamp is turned on. If the light is touched immediately after the lamp is turned off, it will be burnt. Must wait for the bulb to

cool before working

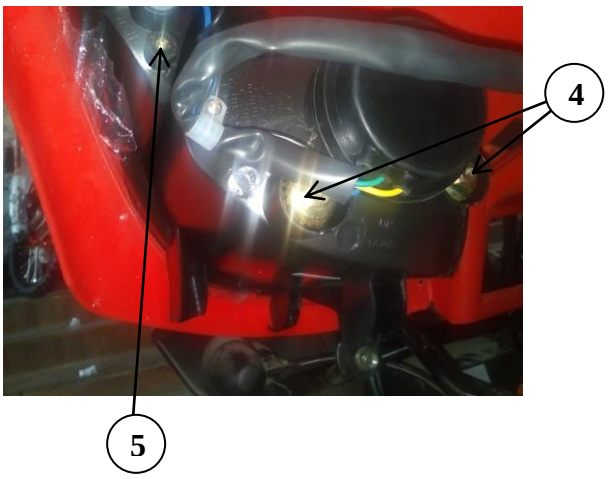
Remove the front assembly plate 1
Unpacking the headlight combination 2

Disconnect the headlamp connector 3

Remove the rear cover and headlight connector and remove the headlamp bulb and replace it.
note
Always wear clean gloves when replacing the lamp. When oil is attached to the glass surface, the bulb may be broken and must be wiped clean with alcohol or banana water. When replacing the headlamp bulb, be aware that the two tabs on the bulb are aligned with the two locating holes on the socket. Lamp specifications: 12V-35W



installation
In reverse order of disassembly
After replacing the lamp, adjust the optical axis of the high beam by adjusting the screw 4; adjust the optical axis of the low beam by adjusting the screw 5.



Replace the taillights

Since the taillight bulb is a combination of LED light-emitting diodes, the bulb cannot be replaced separately. If it is

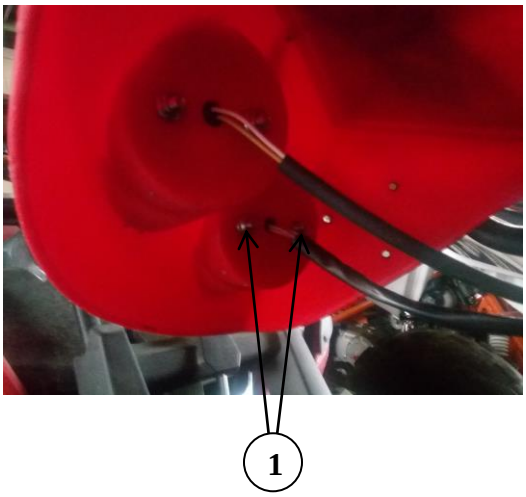
damaged, only the entire taillight can be replaced.

Disassemble the rear taillight socket
Remove 2 nuts
Take down and replace the taillights

installation
In reverse order of disassembly

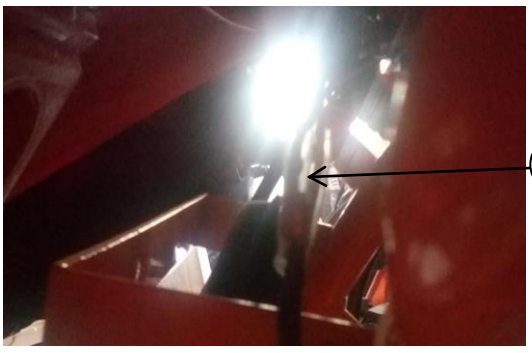
Front turn signal bulb
note
When the light is turned on, the temperature is very high. If the light is touched immediately after turning off the light, it will be burnt. Must wait for the bulb to cool before working

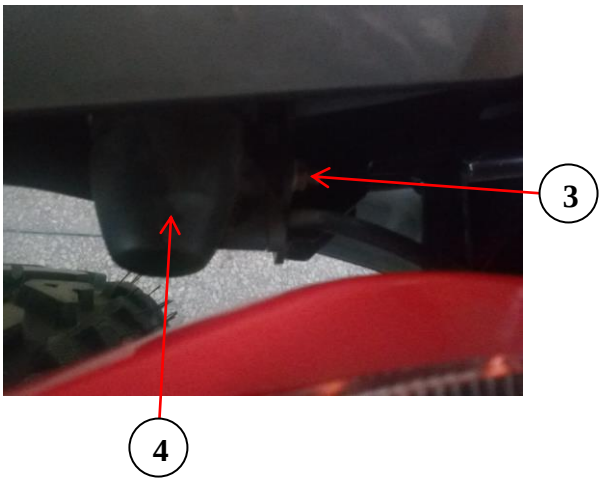
Disconnect the front turn signal connector 2
Remove the nut 3 (1 left and 1 right)
Remove front turn signal 4



Remove the front cover, remove the front turn signal bulb, and replace
note
Always wear clean gloves when replacing the lamp. When oil is attached to the glass surface, the bulb may be broken and must be wiped clean with alcohol or banana water. When replacing the headlamp bulb, be aware that the two tabs on the bulb are aligned with the two locating holes on the socket. Lamp specifications: 12V-10W

installation
In reverse order of disassembly





Rear turn signal

The rear turn signal is a one-piece structure. If the turn signal is damaged, only the entire rear turn signal 5 combination can be replaced.

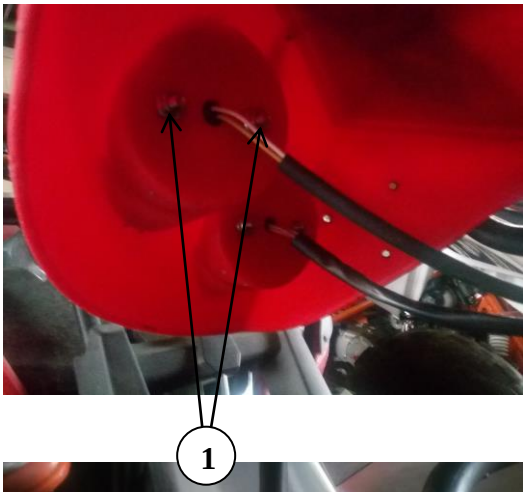
Disassemble the rear taillight socket
Remove 2 nuts
Take down and replace the taillights

installation
In reverse order of disassembly

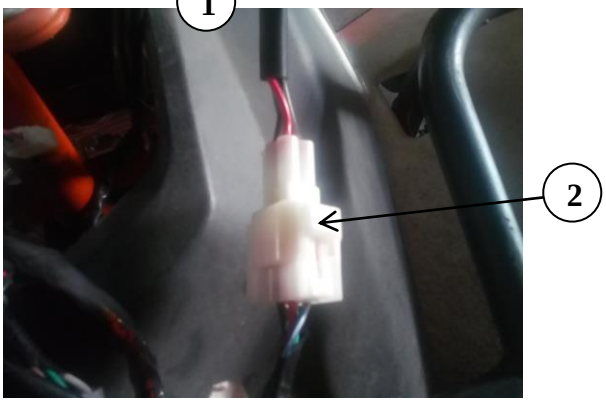
7.4 Ignition switch lock

Disassembly
Remove the front panel

Disconnect the ignition switch lock connector 2



Loosen the nut and remove the ignition switch lock 3

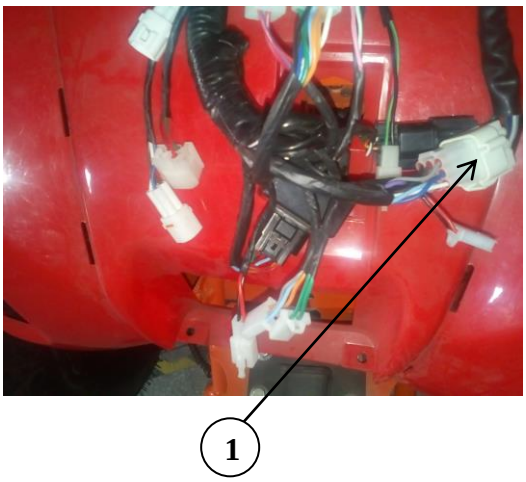


an examination
Check the continuity of the switch lock connector terminals as shown in the table below.
The pattern is normal.
Ignition switch wiring diagram

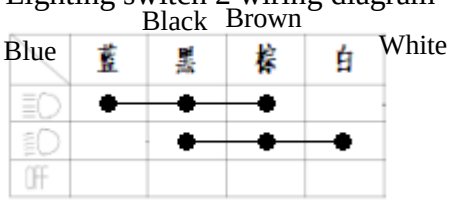
Install
In reverse order of disassembly

7.5 Hand switch

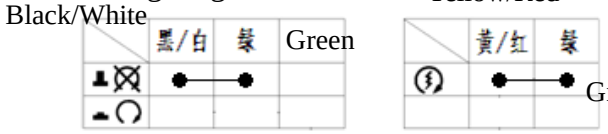
Remove the front panel
Disconnect the connection of the left hand switch connector 1
Check whether the terminals of each steering switch connector are turned on according to the following tables.
The pattern is normal.

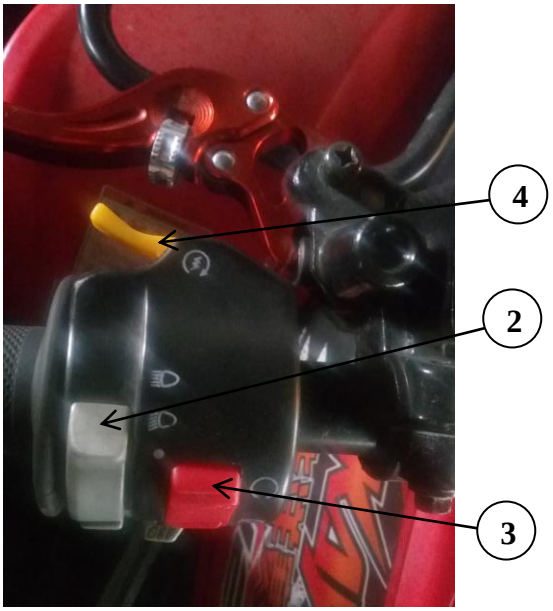


Lighting switch 2 wiring diagram



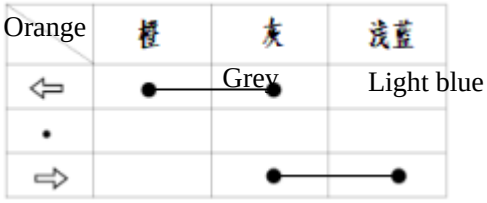
Stop switch / Electric starter switch wiring diagram



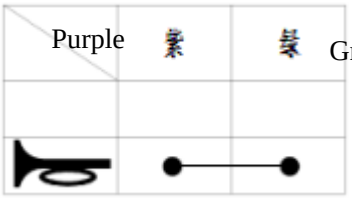


3：Stop switch
4: electric start switch

Steering switch 5 wiring diagram



Electric horn switch 6 wiring diagram

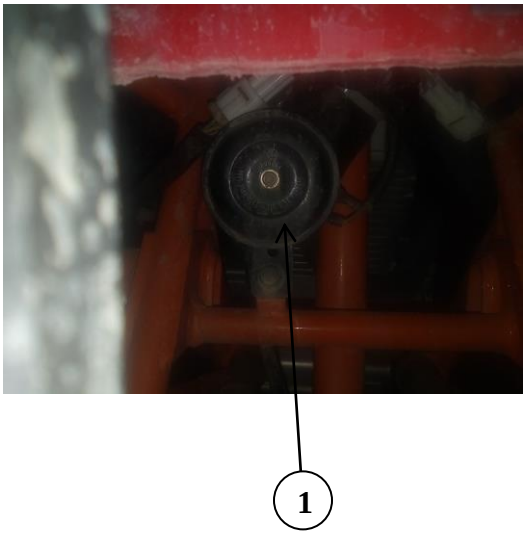


7.6 Brake light switch

Check if the terminals are connected
It is normal to turn on and release the brake lever when holding the brake lever.
If there is any abnormality in the above check, replace the brake light switch.

7.7 Electric horn

Disassembly
Remove the front assembly board
Remove the electric horn connector
Remove the nut
Remove the electric horn 1



Examination
When the fully charged 12V battery is connected, confirm that the electric horn is ringing.
If there is any abnormality in the above inspection, replace the electric horn.

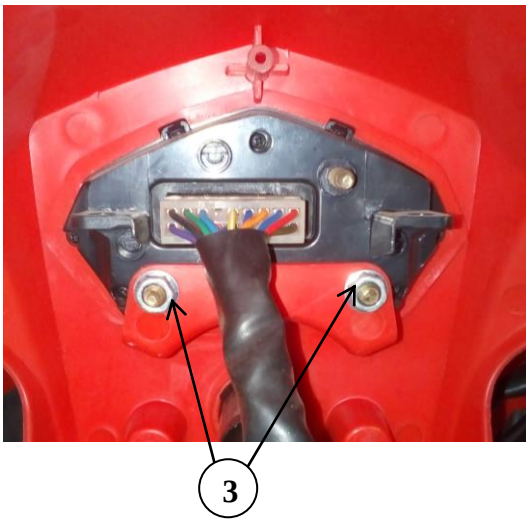
Installation
In reverse order of disassembly

7.8 Meter

Start the car body, drive slowly, and confirm that the instrument display is normal. If there is any abnormality in the above check, replace the instrument.

Disassembly
Remove the instrument mounting screw 2
Remove the meter cover

Disconnect the instrument cable plug connector



Remove the instrument fastening nut 3
Remove the dashboard

installation
In the reverse order of disassembly.

note
The main cable and cable type should be cable, tube,
Cable type wiring diagram is correctly assembled

7.9 Fuel sensor

Disassembly
Remove the fuel sensor fastening screws 1 and remove the fuel sensor from the fuel tank 2
Disconnect the fuel sensor connector

an examination
Connect fuel sensor connector
Ignition switch is set to ON
Shake the float of the fuel sensor by hand to confirm the position of the float, and the scale on the fuel gauge is consistent.
If it is inconsistent, check if the main cable is disconnected or shorted. If there is no abnormality, check the fuel sensor and the fuel gauge itself.

Remove the fuel sensor connector 3

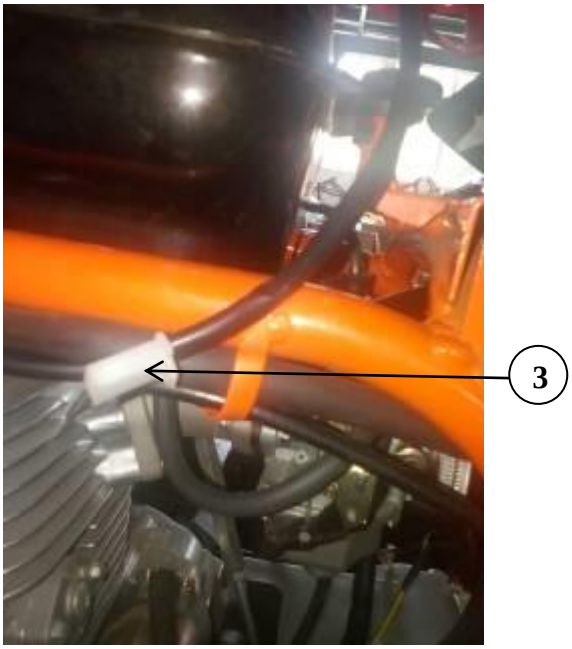
Connect the multimeter to the fuel sensor connector terminals. Shake the fuel sensor float by hand and measure the resistance of each position of the float.

Replace the fuel sensor if there is any abnormality in the above inspection

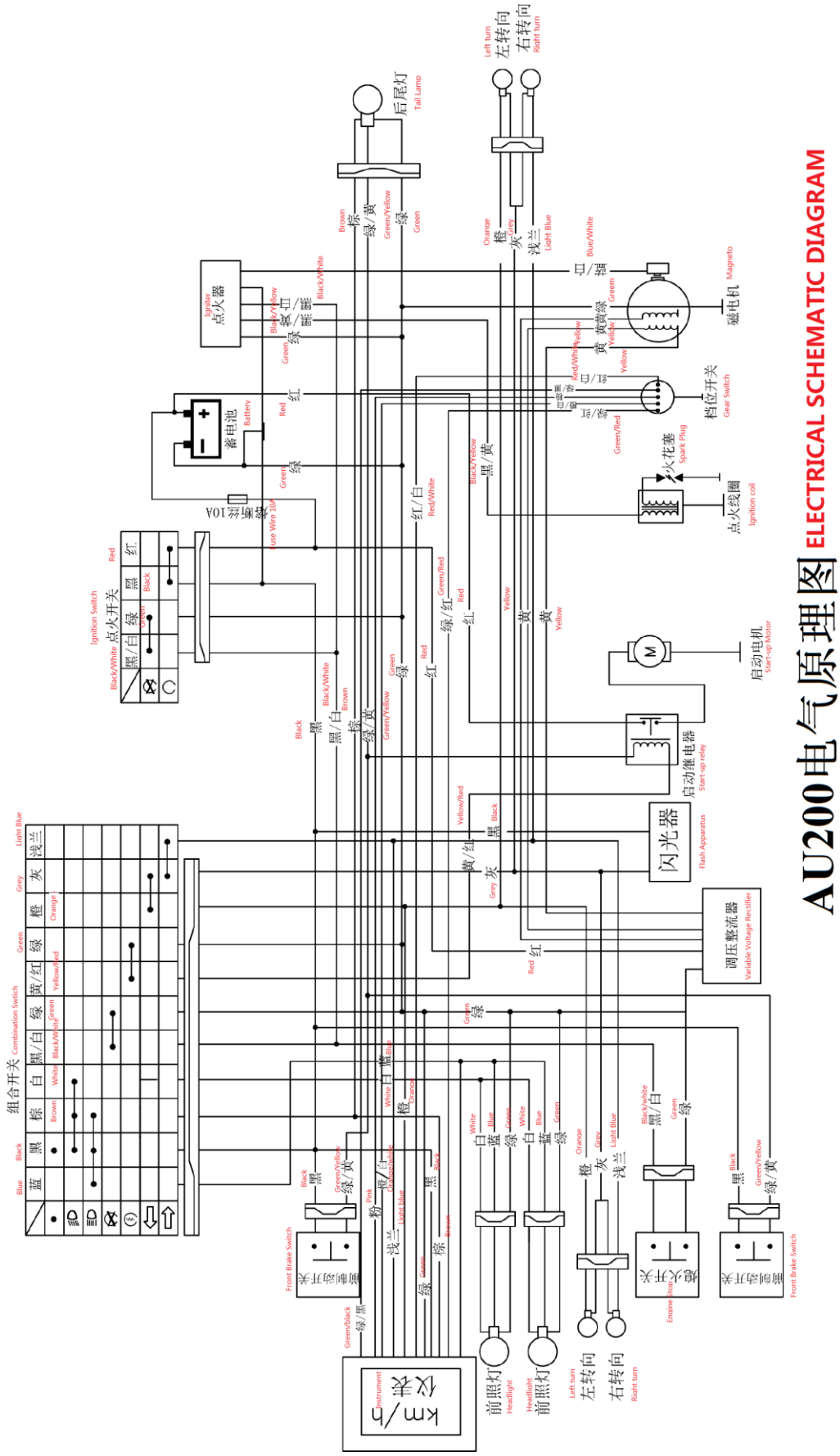
Installation
Put the fuel sensor into the mounting hole of the fuel tank, and install it in place. No oil leakage is allowed.

Connect the fuel sensor connector.

Check fuel gauge
Turn on the power and check if the fuel gauge is working properly.
After confirming that the fuel gauge indication is normal, install the body plastic parts and seat cushions in reverse order of disassembly.



Appendix


AU200电气原理图 ELECTRICAL SCHEMATIC DIAGRAM
组合开关 Combination Switch
点火开关 Ignition Switch
蓄电池 Battery
熔断器10A Fuse Wire 10A
点火器 Igniter
磁电机 Magneto
档位开关 Gear Switch
火花塞 Spark Plug
点火线圈 Ignition coil
启动电机 Start-up Motor
启动继电器 Start-up relay
闪光器 Flash Apparatus
调压整流器 Variable Voltage Rectifier
后尾灯 Tail Lamp
左转向 Left turn
右转向 Right turn
前照灯 Headlight
仪表 Instrument
前刹车开关 Front Brake Switch
熄火开关 Engine Stop Switch