TY50QT-31E

SERVICE MANUAL

Foreword

This service manual contains the technical data of each component inspection and repair for the TY50QT-31E motorcycle. The manual is shown with illustrations and focused on "Service Procedures", “Operation Key Points”, and "Inspection Adjustment" so that provides technician with service guidelines.

If the style and construction of the motorcycle, TY50QT-31E, are different from that of the photos, pictures shown in this manual, the actual vehicle shall prevail. Specifications are subject to change without notice.

Zhejiang Tianying Locomotive Co., Ltd.

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I. General information

01-The main technical parameters:

Item	Technical parameters
Engine model	1P39QMB
Engine type	Single cylinder, four stroke, Forced air cooling, cylinder horizontal type
Transmission type	CVT
Transmission ratio	34.642~11.285
Compression ratio	10.5:1
Bore diameter × stroke mm	39×41.5
Working volume ml	50cm³ (Calculated: 49.5cm³)
Clutch type	Automatic
Lubrication method	Pressure, pressure splash combined
Idle speed r/min	1600±100
Crankcase lubricating oil volume L	0.7
Lubricant grade	SF 10W/40
Ignition method	ECU
transmission case oil volume L	0.15
Gear oil grade	GL-4 85W/90
Spark plug specifications	B8RTC
Spark plug gap	0.6~0.8

02-Lubrication system specifications:

unit: mm

Item		Standard value	Maintenance threshold
Engine oil capacity	change engine oil	0.7 L	-
	after removing the engine	0.75 L	-
85W/90 Gear Oil	change gear oil	0.15 L	-
	after removing the engine	0.2 L	-
Recommended engine oil		Recommended engine oil: SF10W/40 API Quality Grade: SG or higher (do not use oils marked as energy efficient on the circular API service label)	-
Engine oil pump rotor	Tip clearance	Not more than 0.15 (between inner and outer rotors)	0.16
	Intermediate gap	0.016～0.074 (inner rotor hole and shaft)	0.084
	Gap on both sides	0.06 to 0.12 (up and down direction)	0.13

03-Crankshaft, piston and cylinder specifications:

unit: mm

Item			Standard value	Maintenance threshold
Crankshaft	Large end side clearance of connecting rod		0.10～0.35	0.45
	Clearance between connecting rod big end bearing bush and crank pin		0.004～0.012	0.07
	Beat		-	0.05
Cylinder block	Bore		39.000～39.010	39.120
	Out-of-roundness		-	0.05
	Taper		-	0.05
	Flatness		-	0.05
Pistons, Piston Pins, Piston Rings	Piston base circle diameter		38.975～38.98	38.95
	Pin hole diameter		13.002～13.008	13.02
	Piston pin diameter		12.994～13	12.98
	Piston to Piston Pin Clearance		0.002～0.014	0.02
	Piston ring closed gap	First ring	0.10～0.30	0.35
		Second ring	0.20～0.40	0.45
		Oil ring (scraper ring)	0.20～0.70	0.9
	Piston ring and ring groove clearance	Clearance between first ring and groove	0.020～0.060	/
		Gap between second ring	0.020～0.060	/

		and groove		
Cylinder clearance			0.010～0.045	0.10
Inner diameter of connecting rod small end			13.01～13.02	13.12
Fitting clearance between connecting rod and pin			0.016～0.040	0.06

04-Cylinder head and valve specifications:

unit: mm

Item			Standard value	Maintenance threshold
Electric start cylinder pressure			(800～1000)kPa	-
Valve clearance		Intake valve	0.06～0.08	-
		Exhaust valve	0.14～0.16	-
Rocker arm, rocker arm shaft	Rocker arm inner diameter	Intake/exhaust	10～10.015	10.030
	Rocker bearing outer diameter	Intake/exhaust	/	/
	Rocker arm and bearing	Intake/exhaust	/	/
	Gap	Intake/exhaust	/	/
	Rocker bearing inner diameter	Intake/exhaust	9.978～9.988	9.962
	rocker shaft outer diameter	Intake/exhaust	/	/
Camshaft	Camshaft hull height	Intake	25.736～25.786	25.726
		Exhaust	25.55～25.6	25.54
	Bearing and bore clearance		0.002～0.026	0.036
	Beat		/	/
Valve/vale catheter	Valve stem diameter	Intake	4.975～4.99	4.965
		Exhaust	4.955～4.97	4.945
	Valve guide inner diameter	Intake/exhaust	5～5.012	5.022
	Valve stem to valveduct gap	Intake	0.01～0.037	0.057
		Exhaust	0.03～0.057	0.077
	Catheter height (leakage)	Intake/exhaust	9.6～10	/
	Valve seat width	Intake/exhaust	1.0～1.2	1.6
Valve spring free length		Inside diameter	30.3～30.7	/
		Inside diameter	33.9～34.3	/
Cylinder head flatness		0.05		0.05

05-Torque values:

The torque values listed in below are for more important tightening torque values. Please see standard values for those not listed in the table.

Standard torque values for reference:

Type	Tighten torque	Type	Tighten torque
5 mm bolt、nut	0.45~0.6kgf.m	5 mm screw	0.35~0.5kgf.m
6 mm bolt、nut	0.8~1.2kgf.m	6 mm screw、SH nut	0.7~1.1kgf.m
8 mm bolt、nut	1.8~2.5kgf.m	6 mm bolt、nut	1.0~1.4kgf.m
10 mm bolt、nut	3.0~4.0kgf.m	8 mm bolt、nut	2.4~3.0kgf.m
12 mm bolt、nut	5.0~6.0kgf.m	10 mm bolt、nut	3.5~4.5kgf.m

Engine torque value (regular maintenance):

Item	Quantity	Thread diameter (mm)	Torque value (N.m)	Re mark
Spark plug	1	10	12～15	
Valve cover	1	30	20～25	Strainer cover
Sealing plug	1	12	25～30	Crankcase oil drain bolt
Transmission case oil drain bolt	1	8	18～22	With gasket
Transmission case refueling bolt	1	8	18～22	With gasket

Cylinder head and valve:

Item	Quantity	Thread diameter (mm)	Torque value (N.m)	Re mark
Cylinder head nut	4	8	28～32	Oil on the nut end
Camshaft flapper bolt	1	6	8～12	
Valve rocker shaft bolt	2	5	5～9	
Oil and gas separation plate screw	4	ST4.2	2～3	
Cylinder head bolts	4	6	8～12	
Cylinder head cover see oil bolt	1	5	8～12	
Tensioner adjusting bolt	1	6	Hand tighten	
Cylinder connecting bolt	2	6	8～12	

Belt combination:

Item	Quantity	Thread diameter (mm)	Torque value (N.m)	Re mark
Main drive pulley tightening nut	1	14	63～77	Auxiliary tooling required
Driven pulley tightening nut	1	12	43～53	Auxiliary tooling required
Left crankcase cover bolts	10	6	8～12	

Magneto:

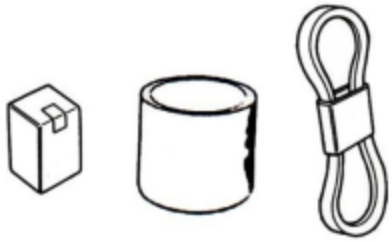
Item	Quantity	Thread diameter (mm)	Torque value (N.m)	Re mark
Magneto rotor bolts	1	12	80～90	Apply 1262 thread glue
Magneto stator bolts	3	6	18～12	
Hall sensor bolt	1	6	7～9	Apply 1262 thread glue
Trigger fixing bolt	2	6	8～12	
Clamping plate bolts	2	6	8～12	
Right crankcase cover bolts	10	6	8～12	

Case and transmission system:

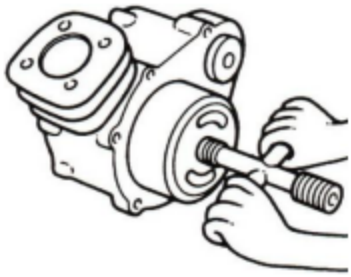
Item	Quantity	Thread diameter (mm)	Torque value (N.m)	Re mark
Crankcase bolts	10	6	8～12	
Crankcase positioning stud	4	6	8～12	
Transmission case bolts	7	8	18～22	
Pin lock nut	1	8	18～22	transmission case brake drum locating pin
Rear brake camshaft limit bolt	1	6	8～12	Rear brake arm
Press pin body tightening bolt	1	6	8～12	Timing chain limit plate fastening
Fastening bolt for speed sensor	1	6	8～12	
Speed sensor protection board, lower	2	6	Hand tighten	

06-Service precautions:

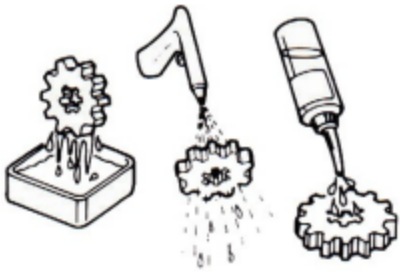
- Always use genuine parts and recommended oil.Using improper parts may cause damage to or destruction of the vehicle.



- Special tools are designed for removal and installation of component parts without damaging them. Using wrong tools may result in parts damage.



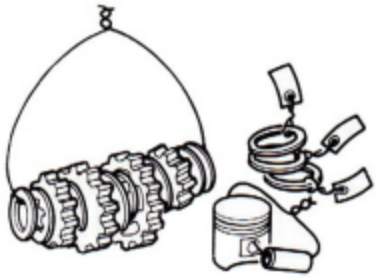
- When servicing this vehicle, use only metric tools. Metric bolts, nuts, and screws are not interchangeable with the Britain system, using wrong tools and fasteners may damage this vehicle.
- Clean the outside of the parts or the cover before removing it from the vehicle. Otherwise, dirt and deposit accumulated on the part's surface may fall into the engine, chassis, or brake system to cause damage.
- Wash and clean parts with high flash point solvent, and then blow dry with compressed air. Pay special attention to O-rings or oil seals because most of the cleaning agents have bad effect on them.



- Never bend or twist control cables to avoid unsmooth control and premature worn out.

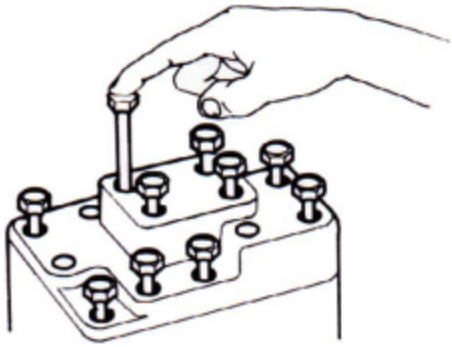
- Rubber parts may become deteriorated when old, and be damaged by solvent and oil easily. Check these parts before installation to make sure that they are in good condition, replace if necessary.
- When loosening a component which has different sized fasteners, operate with a diagonal pattern and work from inside out. Loosen the small fasteners first. If the bigger ones are loosen first, small fasteners may receive too much stress.

- Store complex components such as transmission parts in the proper assemble order and tie them together with a wire for ease of installation later.

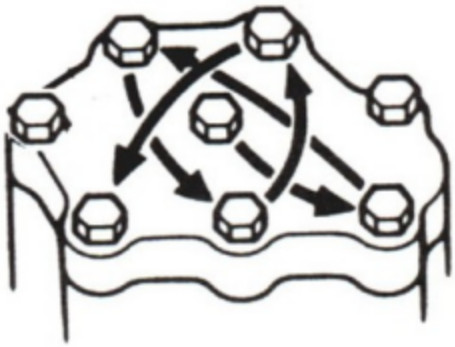


- Note the reassemble position of the important components before disassembling them to ensure they will be reassembled in correct dimensions (depth, distance or position).
- Components not to be reused should be replaced when disassembled including gaskets metal seal rings, O-rings, oil seals, snap rings, and split pins.

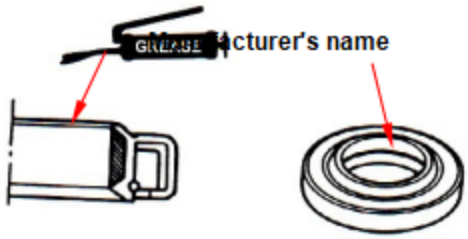
- The length of bolts and screws for assemblies, cover plates or boxes is different from one another, be sure they are correctly installed. In case of confusion, Insert the bolt into the hole to compare its length with other bolts, if its length out side the hole is the same with other bolts, it is a correct bolt. Bolts for the same assembly should have the same length.



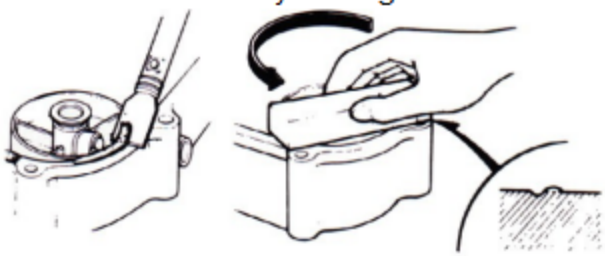
- Tighten assemblies with different dimension fasteners as follows: Tighten all the fasteners with fingers, then tighten the big ones with special tool first diagonally from inside toward outside, important components should be tightened 2 to 3 times with appropriate increments to avoid warp unless otherwise indicated. Bolts and fasteners should be kept clean and dry. Do not apply oil to the threads.



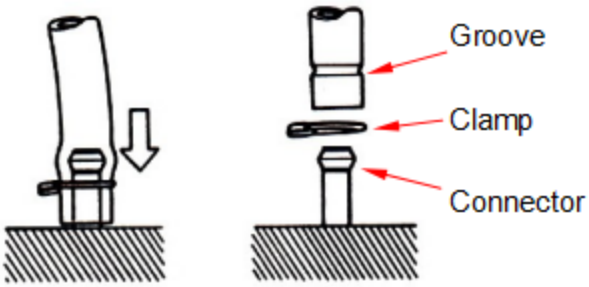
- When oil seal is installed, fill the groove with grease, install the oil seal with the name of the manufacturer facing outside, and check the shaft on which the oil seal is to be installed for smoothness and for burrs that may damage the oil seal.



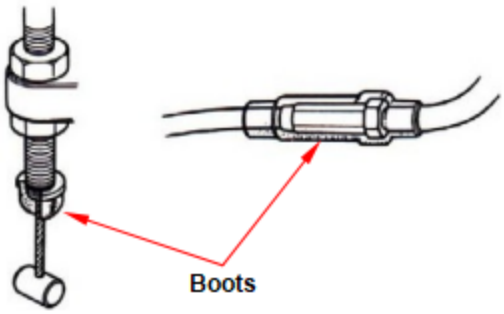
- Remove residues of the old gasket or sealant before reinstallation, grind with a grindstone if the contact surface has any damage.



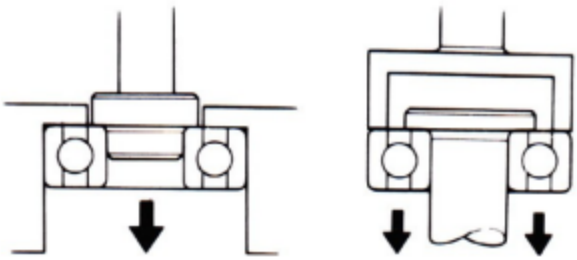
- The ends of rubber hoses (for fuel, vacuum, or coolant) should be pushed as far as they can go to their connections so that there is enough room below the enlarged ends for tightening the clamps.



- Rubber and plastic boots should be properly reinstalled to the original correct positions as designed.

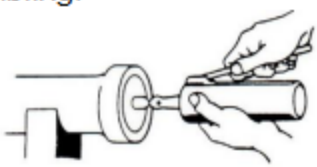


- The tool should be pressed against two (inner and outer) bearing races when removing a ball bearing. Damage may result if the tool is pressed against only one race (either inner race or outer race). In this case, the bearing should be replaced. To avoid damaging the bearing, use equal force on both races.



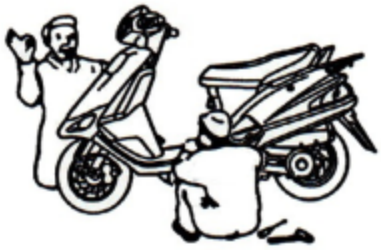
Both of these examples can result in bearing damage.

- Lubricate the rotation face with specified lubricant on the lubrication points before assembling.



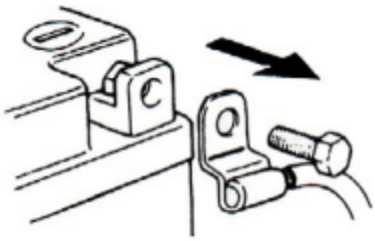
- Check if positions and operation for installed parts is in correct and properly.

- Make sure service safety each other when conducting by two persons.

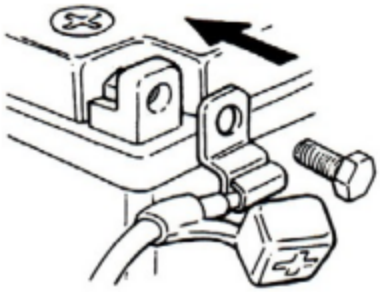


- Note that do not let parts fall down.

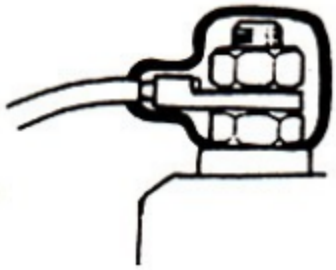
- Before battery removal operation, it has to remove the battery negative (-) cable firstly. Notre tools like open-end wrench do not contact with body to prevent from circuit short and create spark.



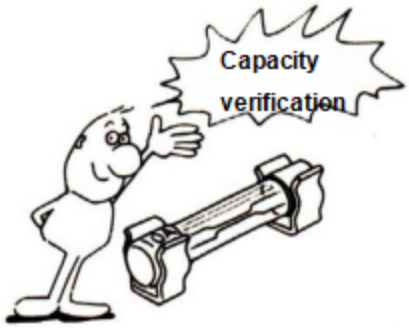
- After service completed, make sure all connection points is secured. Battery positive (+) cable should be connected firstly
- And the two posts of battery have to be greased after connected the cables.



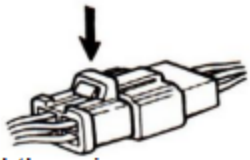
- Make sure that the battery post caps are located in properly after the battery posts had been serviced.



- If fuse burned, it has to find out the cause and solved it. And then replace with specified capacity fuse.

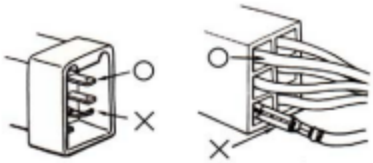


- When separating a connector, it locker has to be unlocked firstly; Then, conduct the service operation.

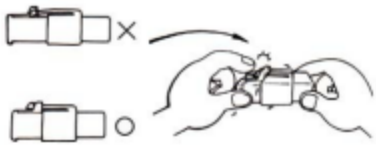


- Do not pull the wires as removing a connector or wires; Hold the connector body.

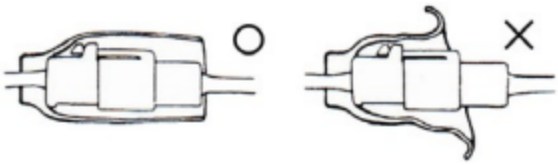
- Make sure if the connector pins are bent, extruded or loosen.



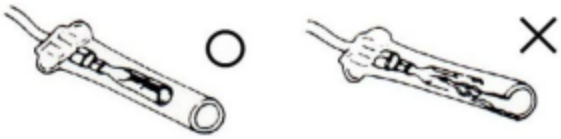
- Insert the connector completely.If there are two lockers on two connector sides, make sure the lockers are locked in properly.Check if any wire loose.



- Check if the connector is covered by the twin connector boot completely and secured properly.

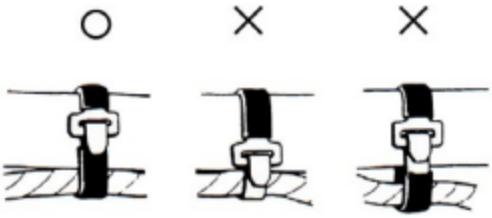


- Before terminal connection, check if the boot is crack or the terminal is loose.



- Insert the terminal completely.Check if the terminal is covered by the boot. Do not let boot open facing up.

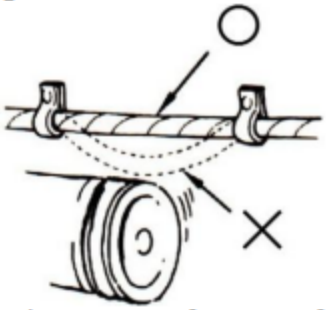
- Secure wires and wire harnesses to the frame with respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wires or wire harnesses.



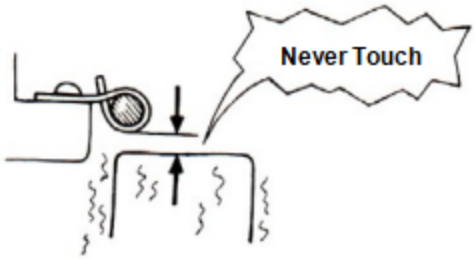
- Wire band and wire harness have to be clamped secured properly.

- Do not squeeze wires against the weld or its clamp.

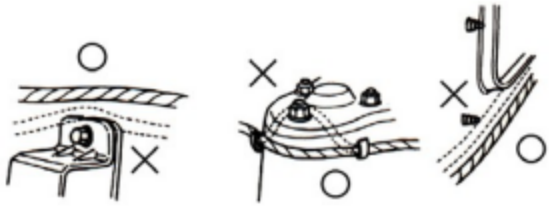
- Do not let the wire harness contact with rotating, moving or vibrating components as routing the harness.



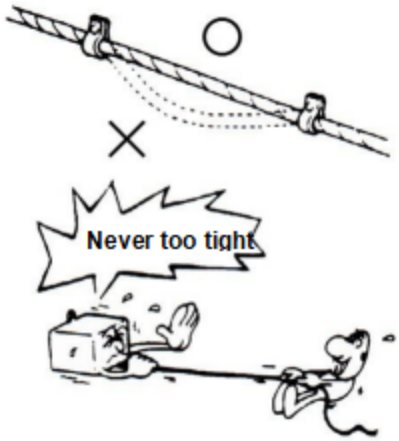
- Keep wire harnesses far away from the hot parts.



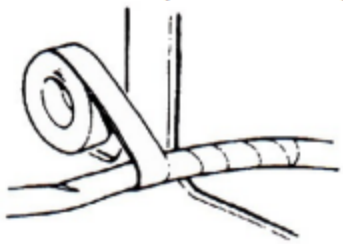
- Route wire harnesses to avoid sharp edges or corners and also avoid the projected ends of bolts and screws.



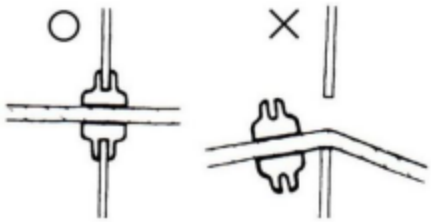
- Route harnesses so that they neither pull too tight nor have excessive slack.



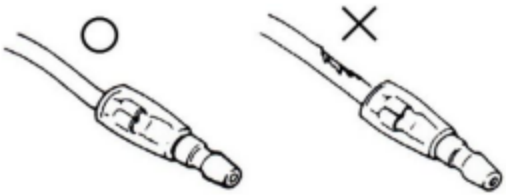
- Protect wires or wire harnesses with electrical tape or tube if they contact a sharp edge or corner. Thoroughly clean the surface where tape is to be applied.



- Secure the rubber boot firmly as applying it on wire harness.

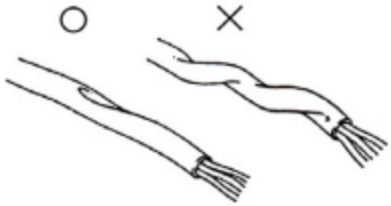


- Never use wires or harnesses which insulation has been broken.Wrap electrical tape around the damaged parts or replace them.



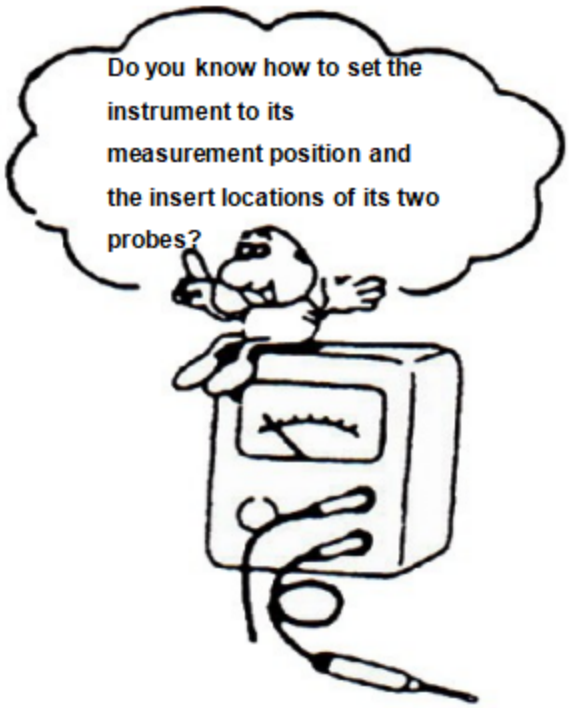
- Never clamp or squeeze the wire harness as installing other components.

- Do not let the wire harness been twisted as installation.



- Wire harnesses routed along the handlebar should not be pulled too tight or have excessive slack, be rubbed against or interfere with adjacent or surrounding parts in all steering positions.

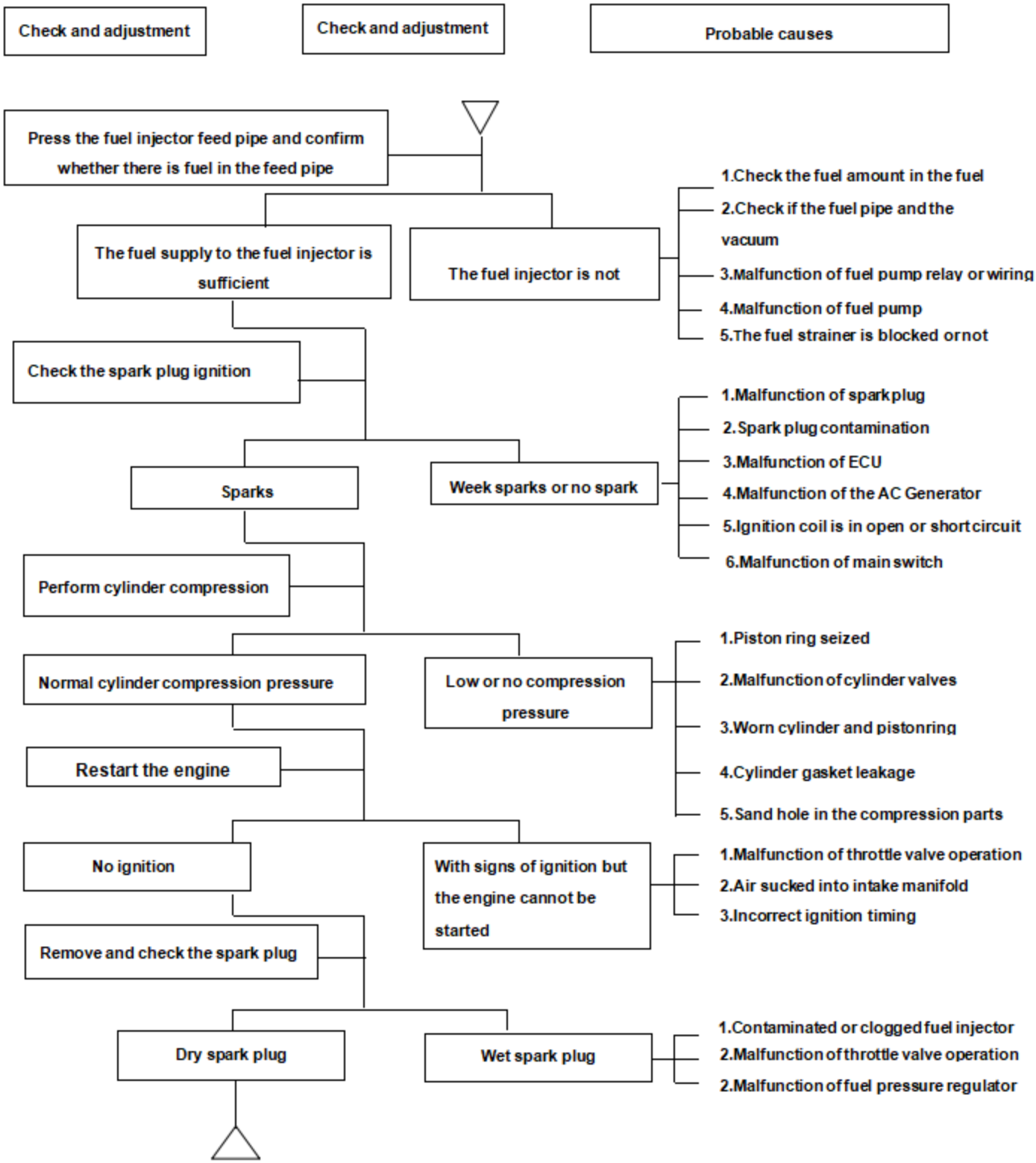
- Before operating a test instrument, operator should read the operation manual of the instrument. And then, conduct test in accordance with the instruction.



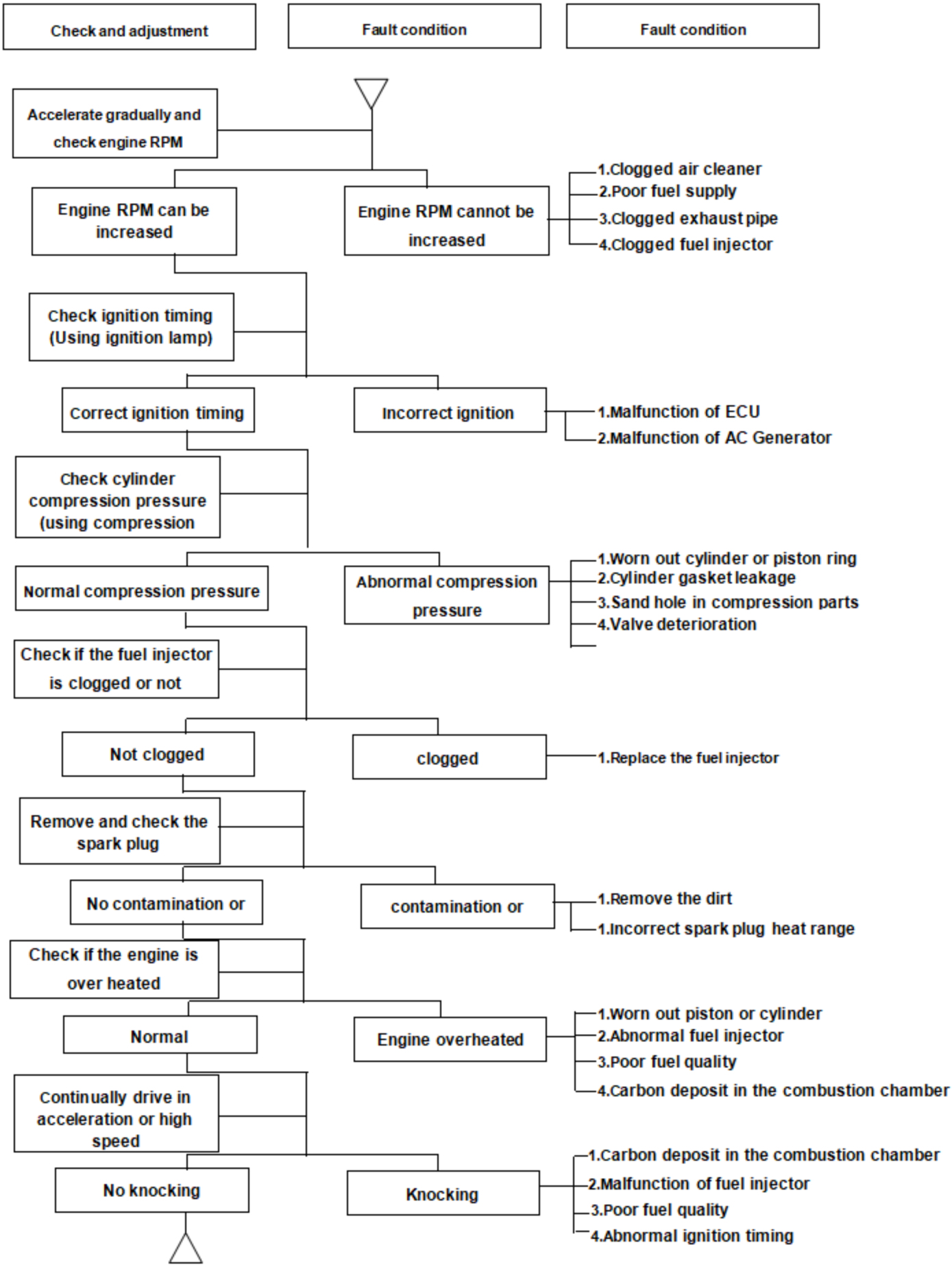
- With sand paper to clean rust on connector pins/terminals if found. And then conduct connection operation later.

07-Troubleshooting:

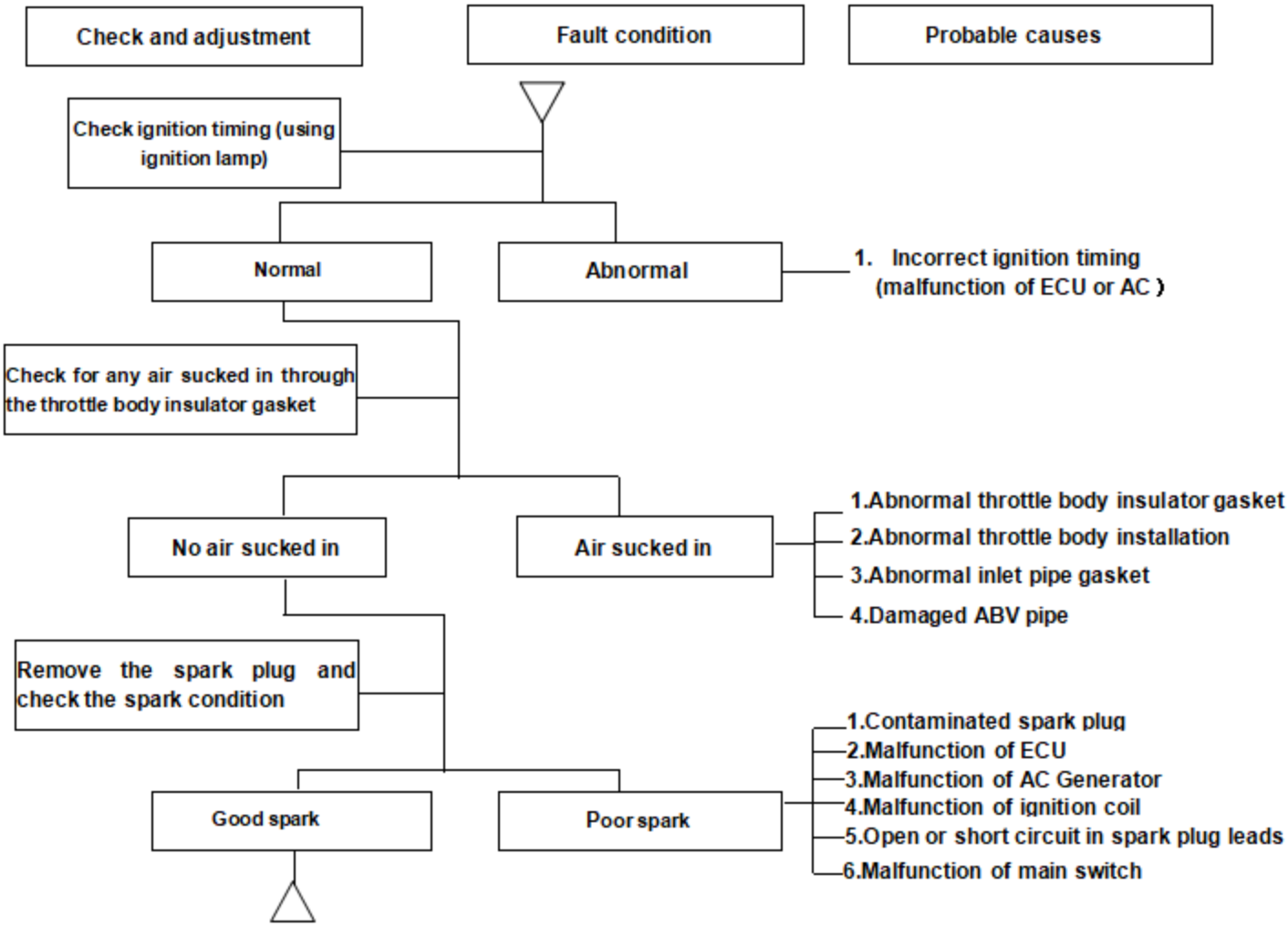
A. Engine cannot be started or difficult to be started



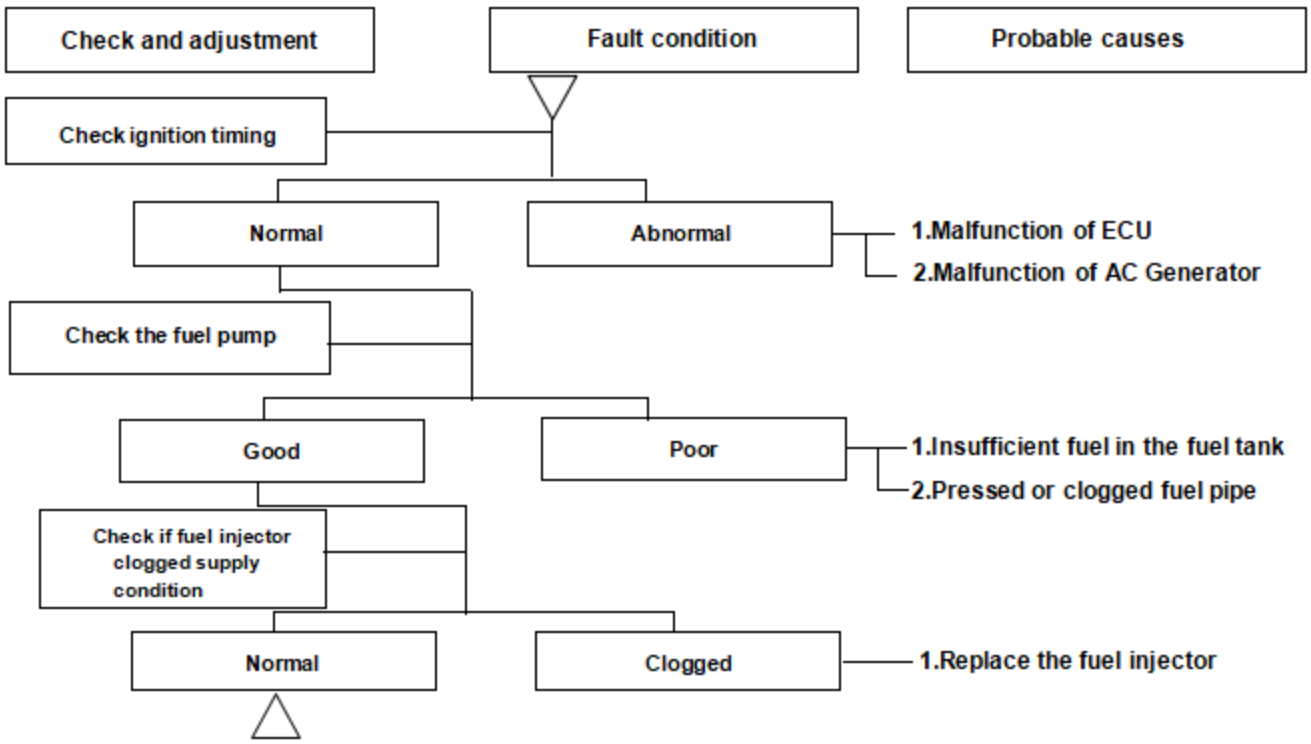
B. Engine runs sluggish (Speed does not pick up, lack of power)



C. Engine runs sluggish (especially in low speed and idling)



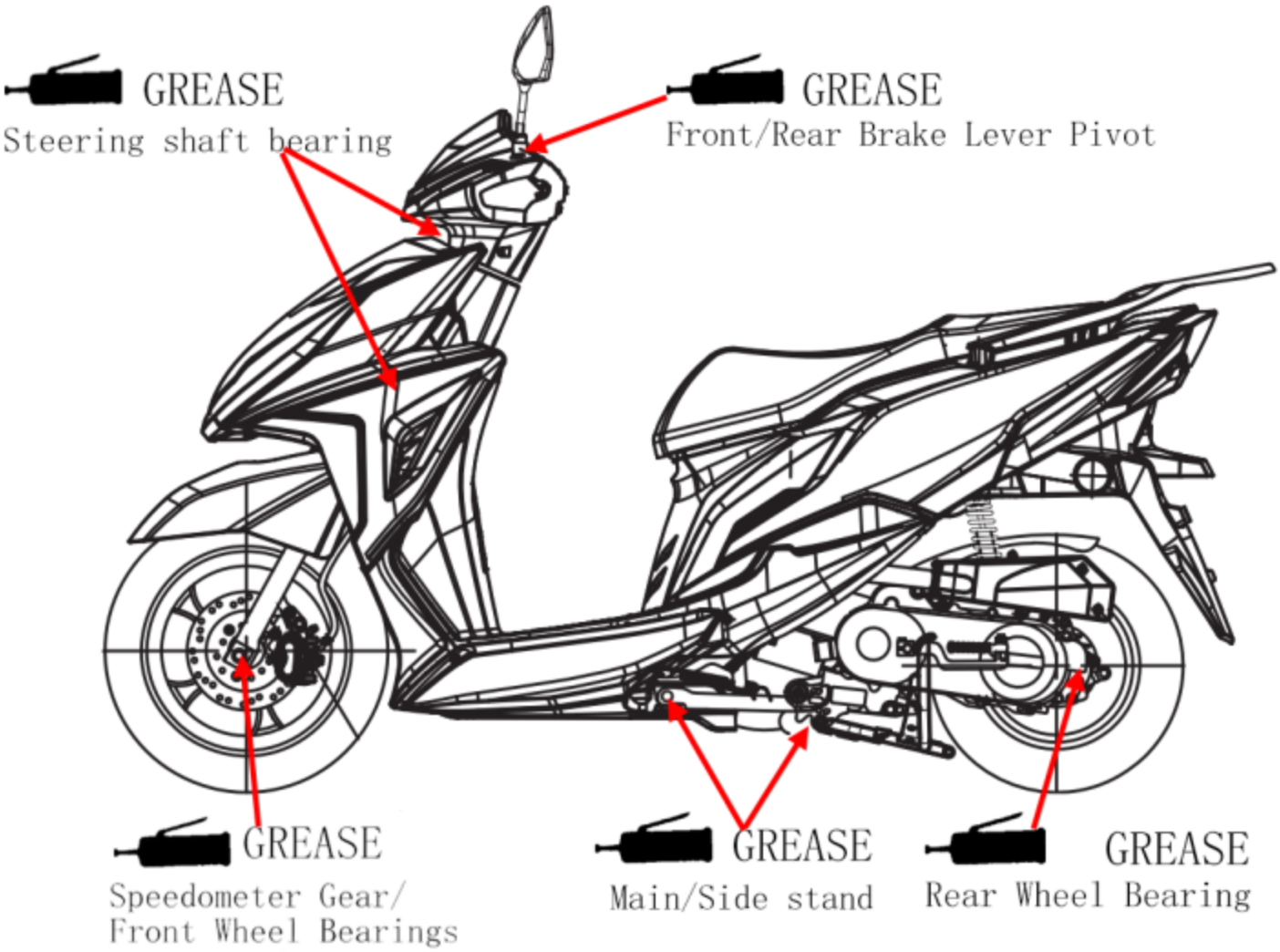
D. Engine runs sluggish (High speed)



E. CLUTCH AND DRIVING PULLEY

FAULT CONDITION	PROBABLE CAUSES
Engine can be started but the vehicle cannot run	1.Worn out or damaged drive belt 2.Damaged movable drive face 3.Damaged driven face spring 4.Broken clutch weight 5.Broken drive shaft groove 6.Worn out or damaged transmission gear
Engine shuts down or trembles when the vehicle is running (rear wheel rotates during engine idling)	1.Broken clutch spring 2.Clutch outer stuck with clutch weights 3.Connection parts between clutch and shaft worn out or burned
Poor initial driving (poor climbing performance)	1.Worn or deformed drive belt 2.Worn weight roller 3.Worn driven face 4.Deformed driven face spring 5.Grease on drive belt or drive / driven

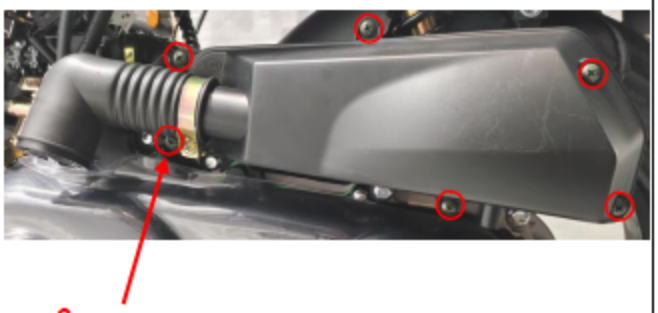
08-Lubrication points:



II. Maintenance Information

9-Air Cleaner:

1. Remove 6 screws from the air cleaner cover and then remove the cover;



2. Remove the air cleaner element;

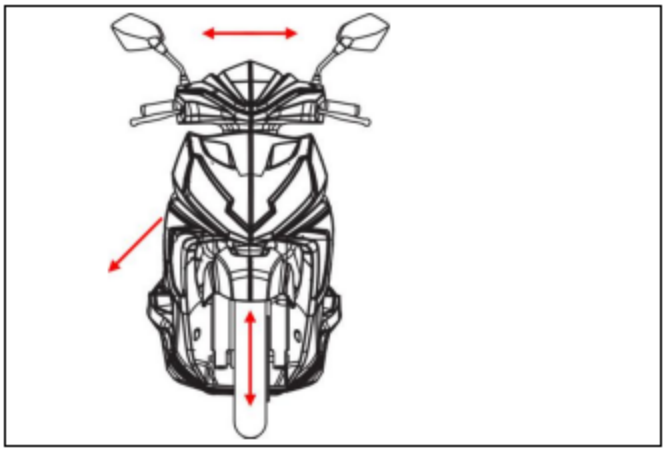
3. Clean air cleaner element:

   Use compressed air to remove the adhesion of dirt,if too much dirt , please new replacement.

Caution

- The air filter element is made of paper products, must not soak or cleaning by water.

10-Steering handle top bearing:

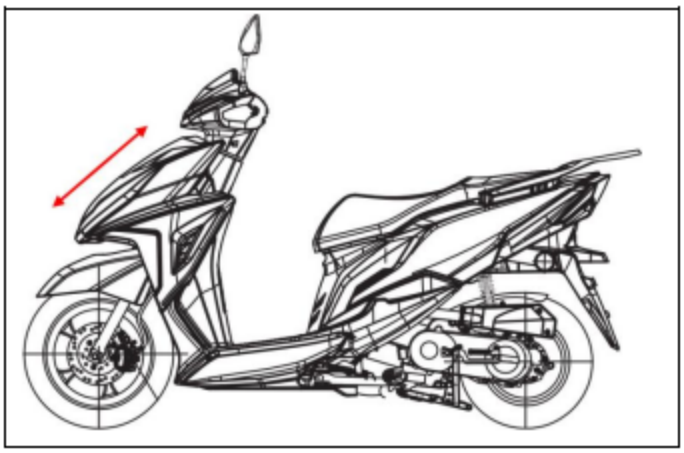


⚠ **Caution**

- Check all wires and cables if they are interfered with the rotation of steering handle bar.

- Lift the front wheel out of ground;
- Turn handle from right to left alternative and check if turning is smoothly;
- If handle turning is uneven and bending, or the handle can be operated in vertical direction, then adjust the handle top bearing.

11-Cushion:

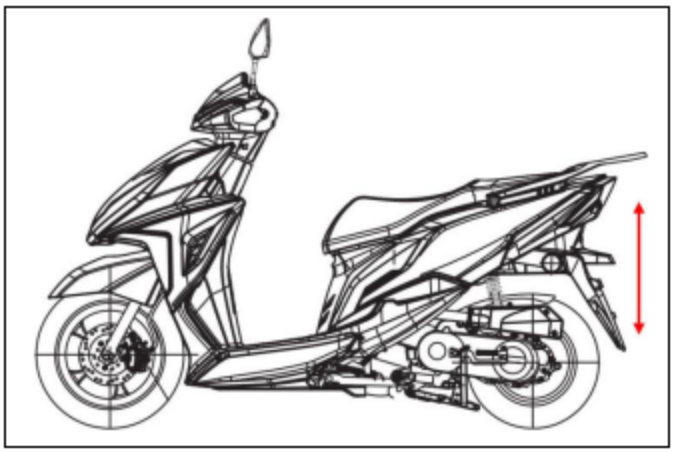


⚠ **Caution**

- Do not ride the motorcycle with poor cushion.
- Looseness, wear or damage cushion will make poor stability and drive-ability.

Front cushion:

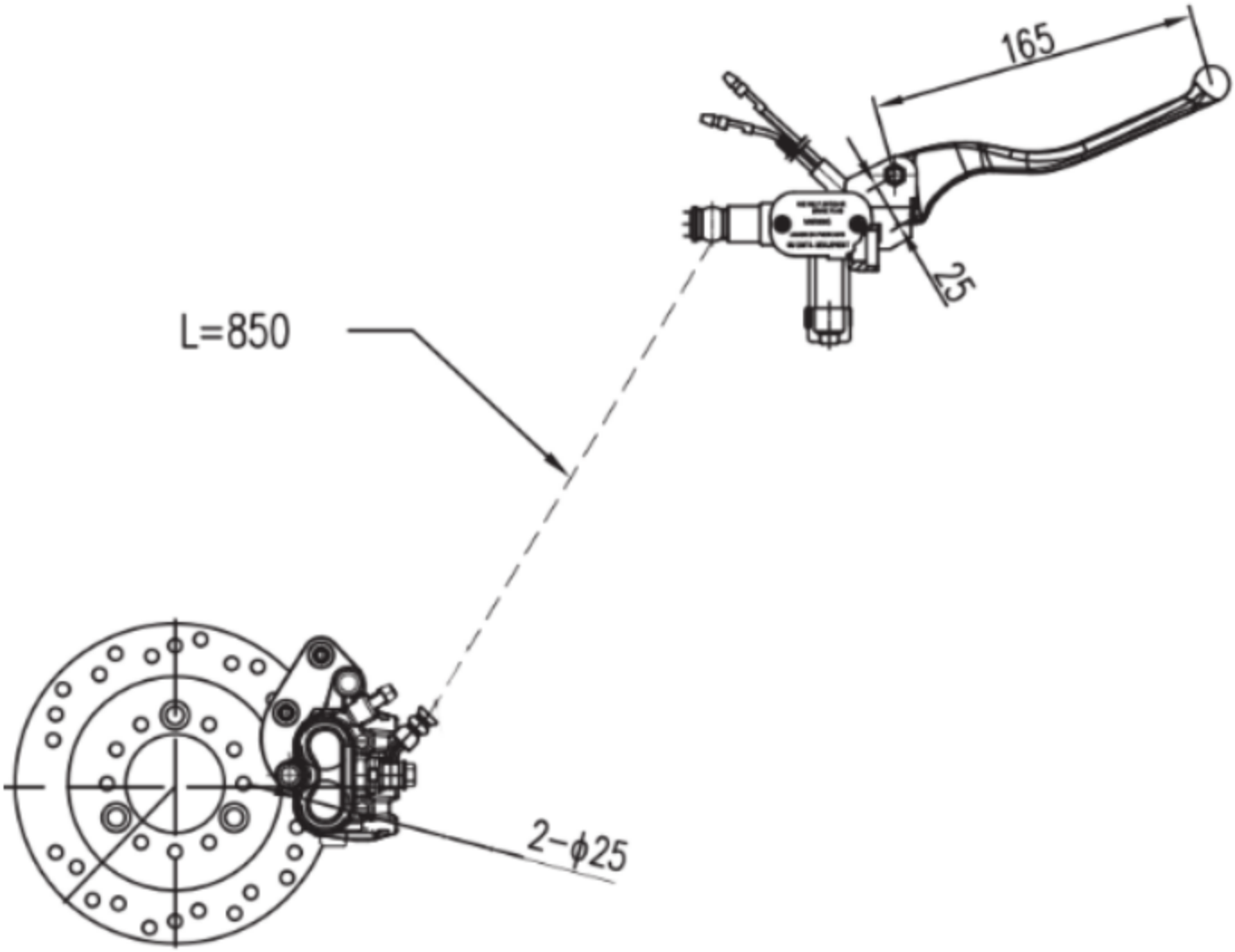
- Press down the front cushion for several times to check it operation;
- Check if it is damage Replace relative parts if damage found;
- Tighten all nuts and bolts



Rear Cushion:

- Press down the front cushion for several times to check it operation;
- Check if it is damage Replace relative parts if damage found;
- Park motorcycle with main stand;
- Turn the rear wheel forcefully and check if engine bracket bushing worn out Replace the bushing if looseness found;
- Tighten all nuts and bolts.

12-Schematic diagram of the braking system:



12.1-Precautions in operation:

- Inhaling asbestos may cause disorders of respiration system or cancer, therefore, never use air hose or dry brush to clean brake parts. Use vacuum cleaner or other authorized tool instead.

⚠ **Caution**

- The brake caliper can be removed without removing the hydraulic system;
- After the hydraulic system is removed, or the brake system is felt to be too soft, bleed the hydraulic system;
- While refilling brake fluid, care should be taken not to let the foreign material entering into the brake system;
- Do not spill brake fluid on the painted surfaces, plastic or rubber parts to avoid damage;
- Check the operation of the brake system before riding.

Specifications

unit: mm

Item	Standard	Limit
The thickness of front brake disk	4.000	2.500
The thickness of rear brake disk	/	/
Front and rear brake disk eccentricity	< 0.100	0.300
Front brake master cylinder inner diameter	$12.7^{+0.055}_{0}$	12.765
Front brake master cylinder piston outer diameter	$12.7^{+0.055}_{0}$	12.765
Rear brake master cylinder inner diameter	/	/
Rear brake master cylinder piston outer diameter	/	/
Thickness of front brake lining	5.000	2.000
Thickness of rear brake lining	/	/

Torque values:

Brake hose bolts:	3.0~4.0kgf.m
Bolt for front brake caliper:	2.9~3.5kgf.m
Brake lever nut:	0.8~1.0kgf.m
Air-bleed valve:	0.8~1.0kgf.m

12.2-Troubleshooting:

Soft brake lever:

1. Air inside the hydraulic system
2. Hydraulic system leaking
3. Worn master piston
4. Worn brake pad
5. Poor brake caliper
6. Worn brake lining/disk
7. Low brake fluid
8. Blocked brake hose
9. Warp/bent brake disk
10. Bent brake lever

Hard operation of brake lever:

11. Blocked brake system
12. Poor brake caliper
13. Blocked brake pipe
14. Seized/worn master cylinder piston
15. Bent brake lever

Uneven brake:

16. Dirty brake lining/disk
17. Poor wheel alignment
18. Clogged brake hose
19. Deformed or warped brake disk
20. Restricted brake hose and fittings

Tight brake:

21. Dirty brake lining/disk
22. Poor wheel alignment
23. Deformed or warped brake disk

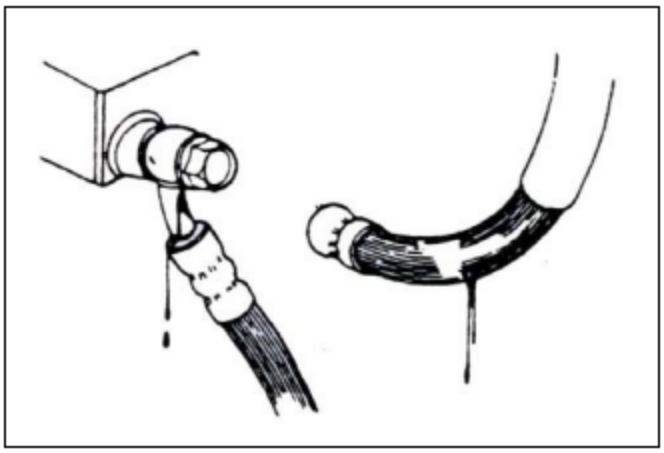
Brake noise:

24. Dirty lining
25. Deformed brake disk
26. Poor brake caliper installation
27. Imbalance brake disk or wheel

12.3-Disk brake system inspection:

Inspection:

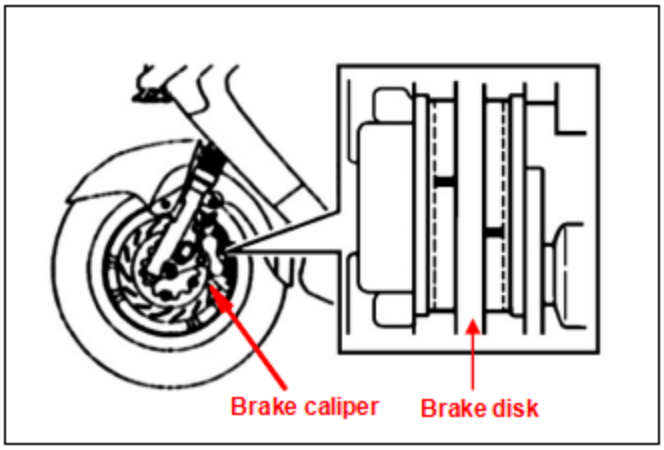
- By visual examination whether divulges or the damage, with spanner inspection brake tube seam whether becomes less crowded, and the inspection handle bar turn right or turn left, or pressure the cushion, whether besides the pipeline protection department, whether there is interferes, contacts other parts of；



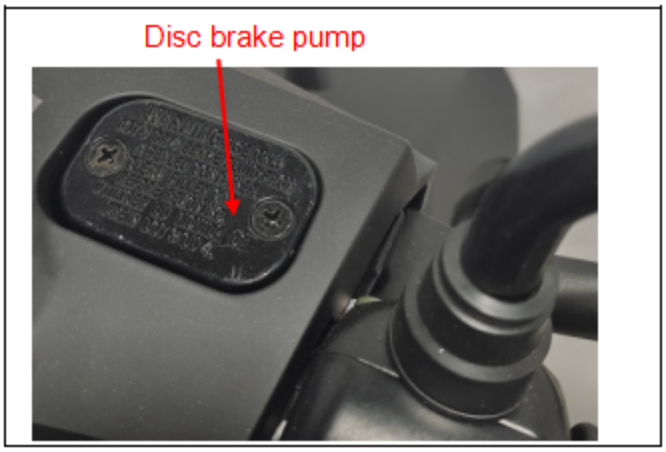
- Remove the front brake pad cap；

- Check the brake from behind the brake caliper；

- The brake pad must be replaced with new lining when the brake pad wear limit reaches the brake disk；



- Park the motorcycle on a level ground, and check if fluid level is under the “LOWER” mark；
- Recommended Brake Fluid:
  WELL RUN BRAKE OIL (DOT 3)



⚠ Caution

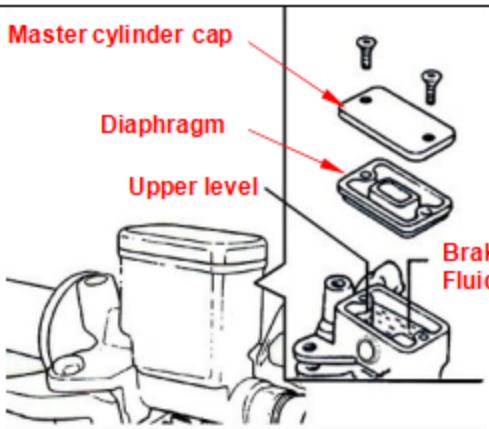
- The vehicles inclined or just stop, the survey oil level could not be accurate, had to settle the 3~5 minute；
- In order to prevent has the chemical change, please do not use counterfeiting or other unclear trade marks brake fluid；
- Standard brake fluid must be used to ensure the efficiency of braking.

12.4-Add brake fluid:

- Before the brake fluid reservoir is removed, turn the handle so that the brake fluid reservoir becomes horizontal, and then remove the brake fluid reservoir.
- When maintenance brake system, will be supposed to paint the surface or the rubber parts catches up by the rags.

Caution

- Supplement brake fluid please do not surpass the upper limit, spilled brake fluid on painted surfaces, plastic or rubber components may result in their damages.

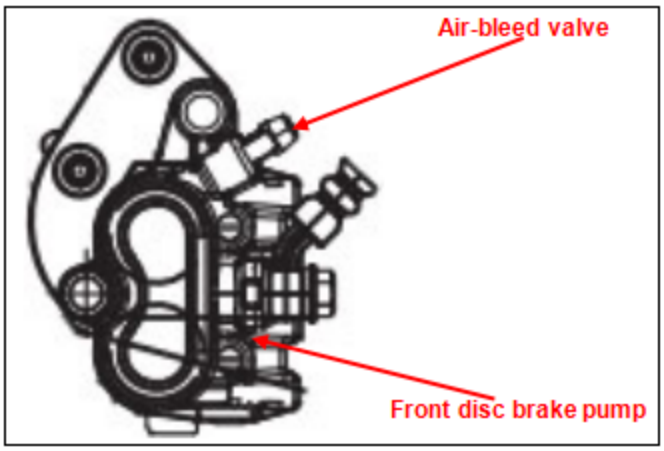


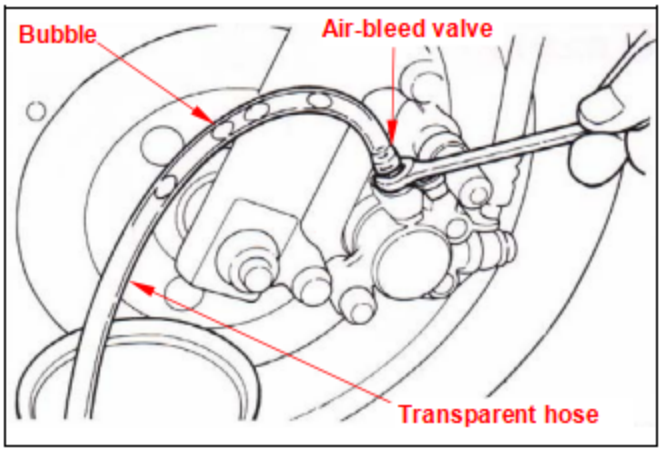
- Remove the master cylinder cap and diaphragm;
- Increases the high quality brake fluid, uses by all means must with the trade mark brake fluid joins in the master cylinder;
- Clean the dirty brake disk.

Caution

- Dirty brake fluid will reduce braking performance.
- To mixed non-compatible brake fluid will reduce brake performance.
- Foreign materials will block the system causing brake performance to be reduced or totally lost.

12.5-Brake fluid replacement/Air-bleed:





1. Connect drain hose to air-bleed valve;
2. Open the drain valve on the calipers and delay valve the brake lever until the old brake fluid is entirely drained out;
3. Close the drain valve and add specified brake fluid into the brake master cylinder.
   Recommended brake fluid:
   WELLRUN DOT 3 brake fluid
4. Connect one end of transparent hose to the drain valve, and put the other end into a container;
5. Open the drain valve around 1/4 turns, and at the same time hold the brake lever until the there is no air bubble in the drain hose and also feeling resistance on the brake lever;
6. Close the drain valve when finishing the brake system refilling fluid procedure, and operate the brake lever to check whether air bubble is in brake system or not;
7. If brake is still soft, please bleed the system as described below:
   7.1. Tightly hold the brake lever and open the drain valve around 1/4 turns, and then close the valve;
   7.2. Slowly release the brake lever, and wait for a few seconds until it reaches its top position;
   7.3. Repeat the steps 1 and 2 until there is no air bubble at the end of the hose;
   7.4. Tightly close the drain valve;
   7.5. Make sure the brake fluid is in the UPPER level of the master cylinder, and refill the fluid if necessary;
   7.6. Cover the cap.

Caution

- Discharge air from the lower pump;
- The brake fluid can be replaced by machine, with shorter time and less bubbles.

Caution

- Do not release the brake lever before the drain valve is closed.
- Always check the brake fluid level when carrying out the air bleeding procedure to avoid air enter into the system.

12.6-Front brake caliper:

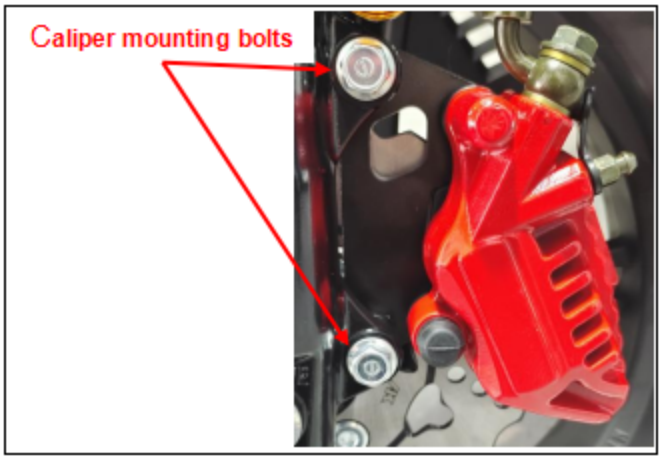
Removal:

- Remove two mounting bolts and caliper.

Installation:

- Install the brake caliper and tighten the mounting bolts.

Torque: 2.9~3.5kgf.m

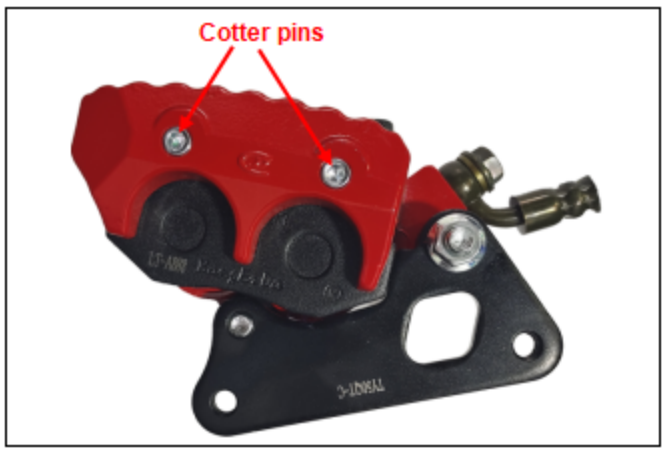


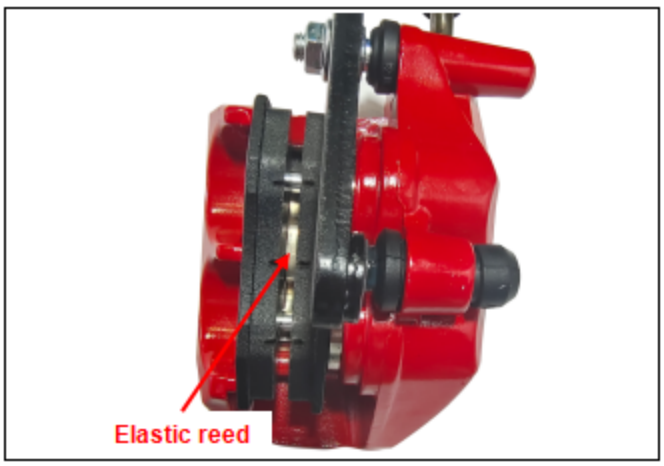
⚠ **Caution**

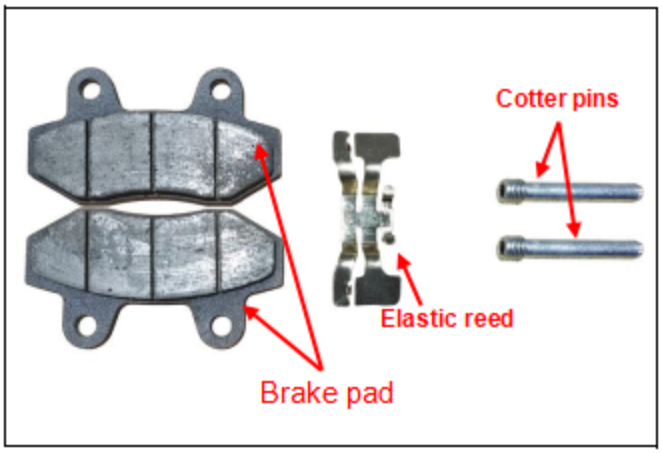
- Use M8 x 35 mm flange bolt only.
- Long bolt will impair the operation of brake disk.

Brake pad replacement:

- Remove brake caliper;
- Remove Cotter pins;
- Remove brake pads;
- Install the Elastic reed;
- Install the new Brake pad;
- Tighten the Cotter pins.



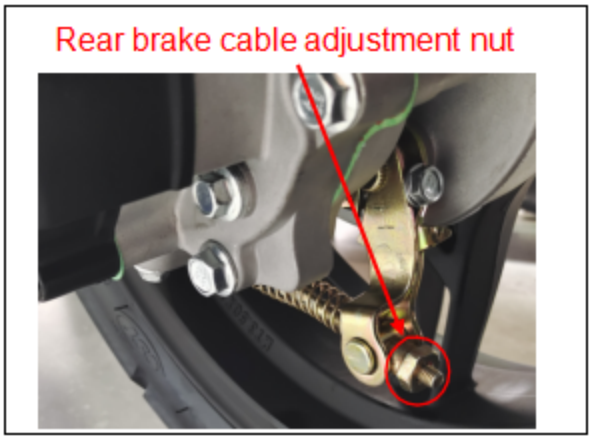




12.7-Rear drum brake:

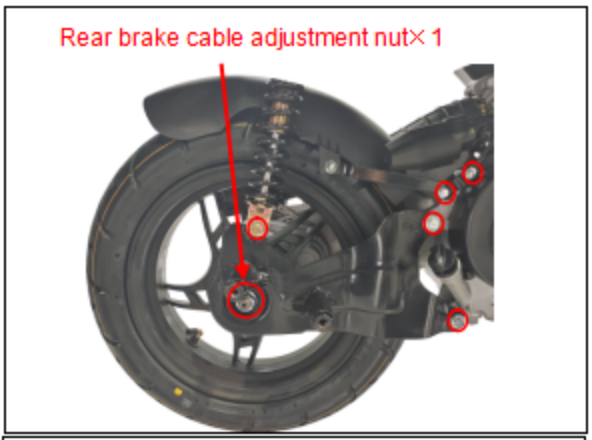
Removal:

- Release the rear brake cable adjusting nut, so that the brake rocker arm is in a relaxed state;



- Remove the rear wheel nut and Bolts shown, Then remove the rear wheel;

- Remove the rear brake shoe assembly.



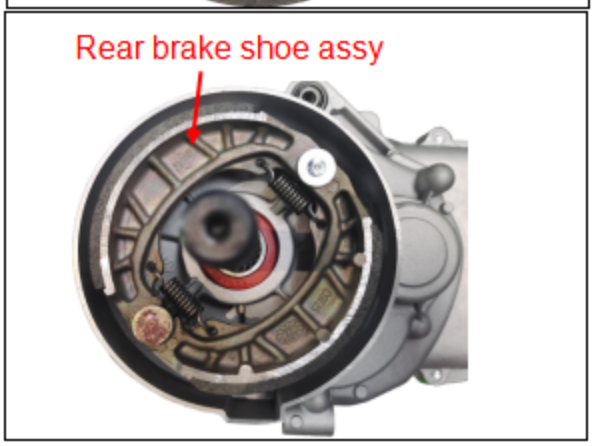
Installation:

- Install the rear brake shoe block assembly;

- Install the rear wheel and rear wheel nuts;

  Torque: 10.2-13.8kgf.m

- Install the rear brake cable adjusting nut and adjust the brake rocker arm to proper position.

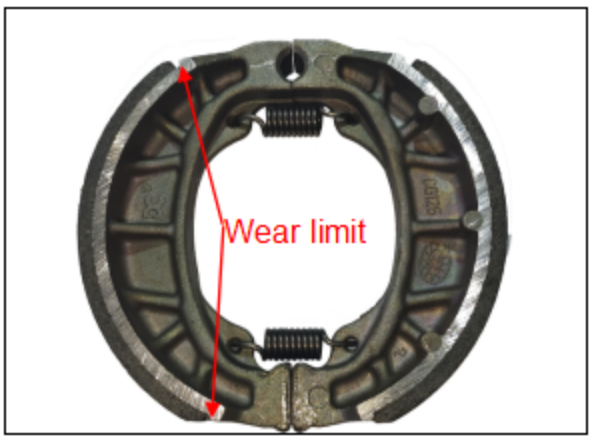


⚠ **Caution**

- When the brake rocker arm is adjusted to the limit position, the rear wheel brake is weak or the braking distance increases, please replace the rear brake shoe。

Rear brake shoe assembly replacement:

- Check the friction plate. If it exceeds the wear limit, replace it with a new rear brake shoe assembly.

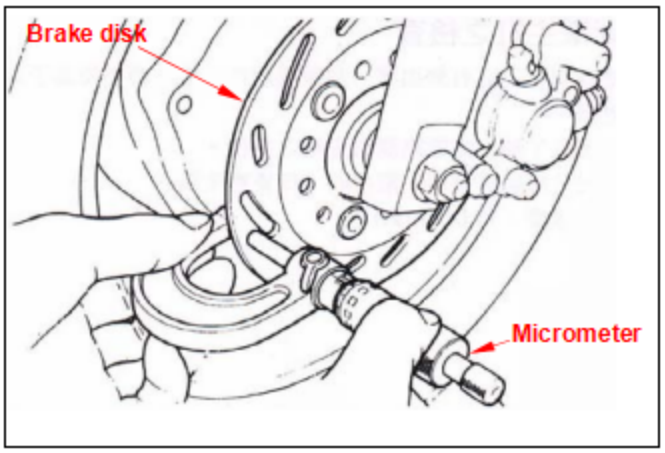


12.8-Brake Disk:

Inspection:

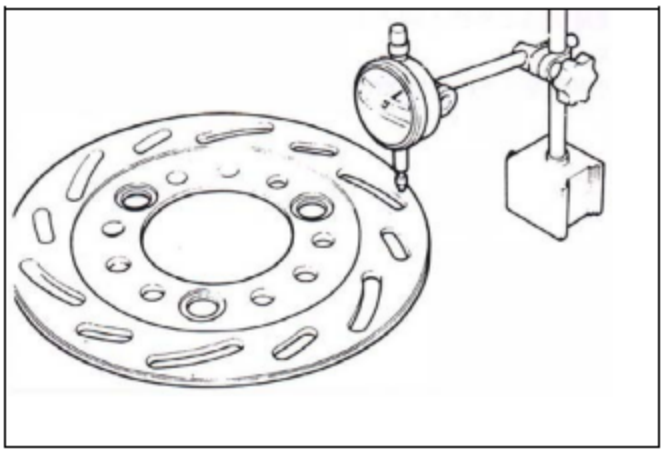
- Visually check the brake disk for wear or break.
- Measure the thickness of the disk at several places.
- Replace the disk if it has exceeded the service limit.
- **Allowable limit:**

  Front brake disk:2.5mm



- Remove the brake disk from wheel.
- Check the disk for deformation and bend.

  Allowable limit:0.30 mm

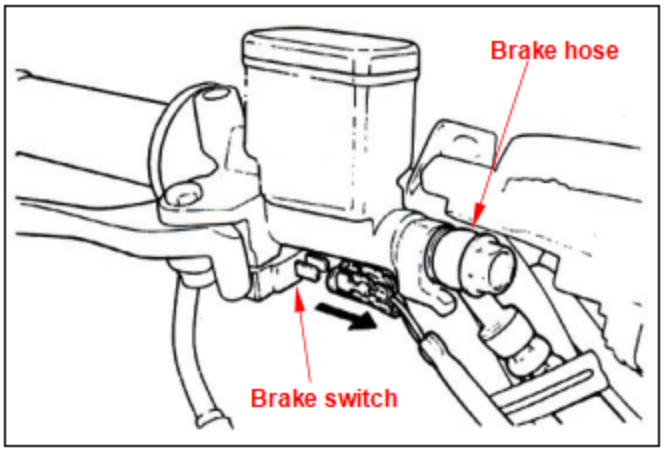


⚠ **Caution**

- The dirty brake lining or disk will reduce the brake performance.
- Brake lining includes the asbestos ingredient, cannot use the air-gun to be clean, the operator should dress the mouthpiece and the glove, use vacuum cleaner clean it.

12.9-Master Cylinder：

Master Cylinder Removal:



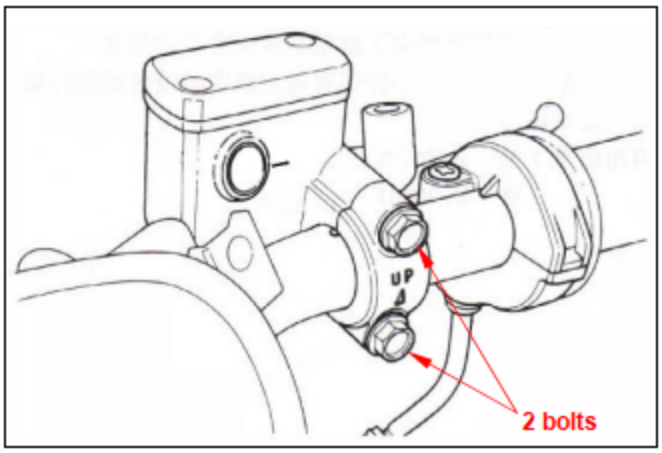
⚠ **Caution**

- Do not let foreign materials enter into the cylinder.

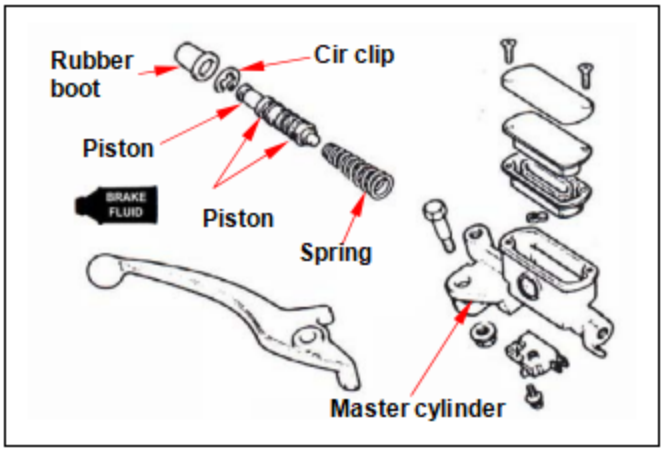
⚠ **Caution**

- The whole set of master cylinder, piston, spring, diaphragm and cir clip should be replaced as a set.

- Remove the handlebar covers；
- Remove the leads of brake light switch；



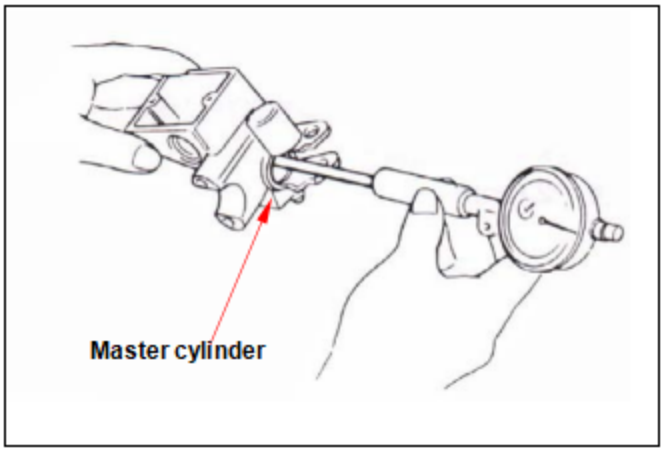
- Drain out the brake fluid;
- Remove the brake lever from the brake master cylinder;
- Remove the brake hose;
- Remove the master cylinder bolts and the master cylinder.
- Remove the rubber pad;
- Remove the cir clip;
- Remove the piston and the spring;
- Clean the master cylinder with recommended brake fluid.



Master Cylinder Inspection:

- Check the master cylinder for damage or scratch, Replace it if necessary;
- Measure the cylinder inner diameter at several points along both X and Y directions;
- Replace the cylinder if the measured values exceed allowable limit.
- **Allowable limit:**

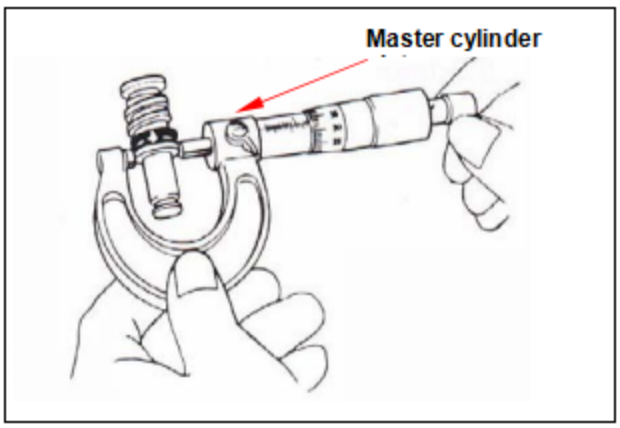
  Front brake:12.755 mm



Measure the outer diameter of the piston:

- Replace the piston if its measured value exceeds allowable limit.
- **Allowable limit:**

  Front brake: 12.645 mm



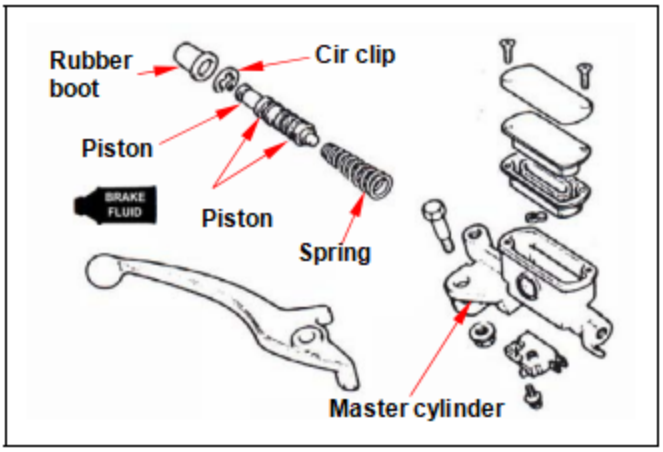
Master Cylinder Assembly:

⚠ Caution

- It is necessary to replace the whole set comprising piston, spring, piston cup, and cir clip.
- Make sure there is no dust on all

components before assembling.

- Apply clean brake fluid to the piston cup, and then install the cup onto the piston;
- Install the larger end of the spring onto the master cylinder;
- The master cup's cavity should be face inside of master cylinder when installing the master cup;
- Install the cir clip.

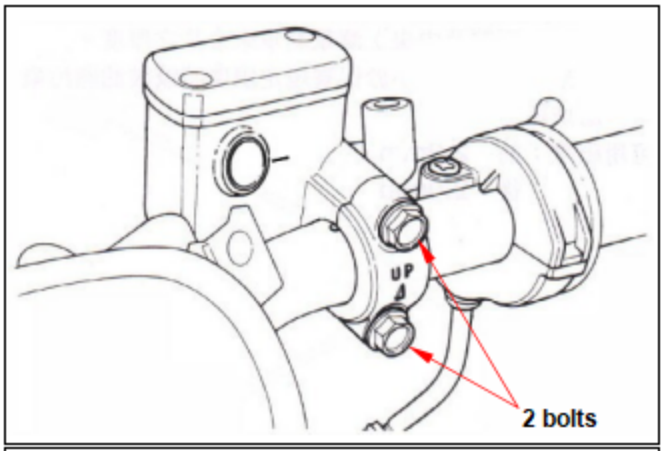


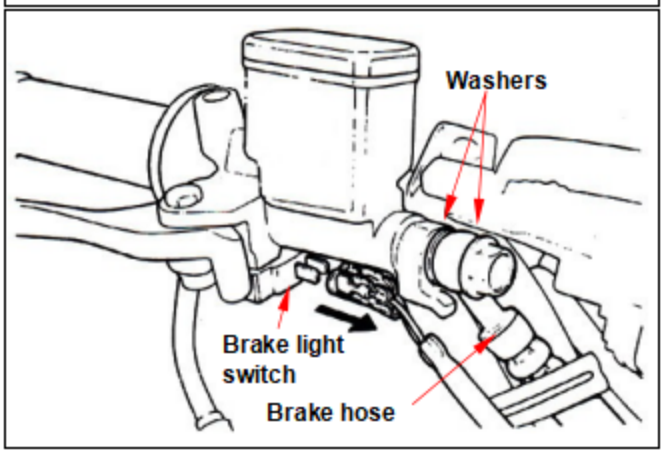
⚠ **Caution**

- Never install cup lip in the opposite direction.
- Make sure the cir clip is seated securely in the groove.

Master Cylinder Install:

- Install the rubber pad into the groove correctly;
- Place the master cylinder onto handlebar, and install the bolts;
- Install the brake lever, and connect leads to brake light switch.
- Connect brake hoses with 2 new washers;
- Tighten the brake hose bolt to the specified torque value;
- Make sure the hose is installed correctly;
- Install all wires, hoses, and components carefully so avoid to twisting them together.





⚠ **Caution**

- Kink of brake leads, hose or pipe may reduce brake performance.
- Improper routing may damage leads, hoses or pipes.

Add specified brake fluid and bleed the system

III. Engine maintenance

13-Main characteristics:

1.Using dry type, shoe type clutch and automatic centrifugal V-belt, automatic stepless transmission system, the operation is simple and reliable.

2.Cam mechanism is used to control air intake and exhaust to give full play to mechanical properties.

3.Using trigger CDI contactless electronic ignition device, has good starting performance.

4.The vacuum diaphragm flat-suction carburetor is adopted, which has good atomization, low fuel consumption and lower emission than Euro V standard.

5.Large power, torque, stable power operation, low noise.

6.Easy maintenance, safe and reliable work.

7.The engine factory number is printed on the lower left of the left crankcase.

14-Precautions for use:

1.For electric starting, press the start button for no more than 15S each time, and the interval should be more than 10S. After the engine starts, release the starting button immediately to prevent damage to the engine.

2.In order to extend the service life of the engine, it must be preheated for 1-3 minutes after each start.

3.Before starting, check whether the parts are loose or defective, and whether the throttle handle, brake and other control mechanisms are flexible and reliable.

4.The running-in mileage of the new machine is 300km, the speed during the running-in period should not be more than 35km / h, and the engine oil should be replaced in time. After the engine is running-in well, it is conducive to the performance of the engine and the extension of its service life.

5.Addition and replacement of lubricating oil:

5.1.Add: The user should often check the amount of crankcase oil, the oil scale is inserted into the oil inspection hole, the oil level should be between the upper and lower scale, lower than the bottom line or close to the bottom line should be timely added oil.

5.2.Replacement: Idle the engine for 3 to 5 minutes, so that the engine heating, oil temperature rise easy to flow. After stopping, remove the oil bolt under the right crankcase cover (hexahexagonal width is 17㎜), the dirty oil is discharged, the oil filter net is cleaned and installed back, the new oil is re-added from the oil scale hole, and the oil scale is tightened after confirming the oil capacity.

6.Air filter cleaning:

Remove the filter element, first pat the dust on the outside of the paper filter element, and then use the air gun to blow the filter element clean. The dusty filter element must be replaced. Motorcycles driving on dusty roads should increase the frequency of cleaning and replacement of air filter elements.

7.Adjustment of valve clearance:

7.1.The valve clearance (hot state) of the 1P39QMB engine is specified as follows:

Valve clearance: 0.06～0.08㎜.

7.2.Adjustment steps:

7.2.1.First, find the top dead center of piston compression stroke, remove the rubber plug on the fan cover, and observe the scale line on the magneto;

7.2.2.Then remove the spark plug on the cylinder head (using a special sleeve), turn the fan impeller clockwise with the sleeve, and observe that when the top dead center mark is aligned with the marking of the magneto flywheel shell, the piston is in the top dead center position;

7.2.3.At this time, there should be valve clearance, and the piston is in the compression top dead center position. Otherwise, you need to rotate the crankshaft for another week, and then adjust the valve clearance as required, and lock the valve clearance adjustment nut. The valve clearance should be detected by a gauge, and it cannot be detected by hand.

15-Regular maintenance project and schedule:

Project	Driving distance（KM）							Often
	300	1000	3000	6000	9000	12000	15000	
Crankcase oil	□	□	2000Km/time					☆
Gearbox oil		□		□		□		
Air filter element			△	△	△	△/□	△	In dusty areas, clean once every 1000km
Valve clearance		☆		☆		☆		
Spark plug			☆	☆/□	☆	☆/□	☆	
Carbon deposition						△		
V-belt cavity				△		△		

☆:Inspect △:Clean □:Replace