PREFACE

This manual offers all service specialists with the technological procedures of maintenance, repairing for LIGERO-50 detailedly show those whom may concern how to maintain, repair, change parts, troubleshoot and reassemble, etc.

At every important section we illustrate by assembly, explosion diagrams and photographs, if necessary, please check the diagrams already shown.

Though we have tried our best, please kindly instruct us any faults found in this manual.

MOTIVE POWER INDUSTRY CO., LTD.

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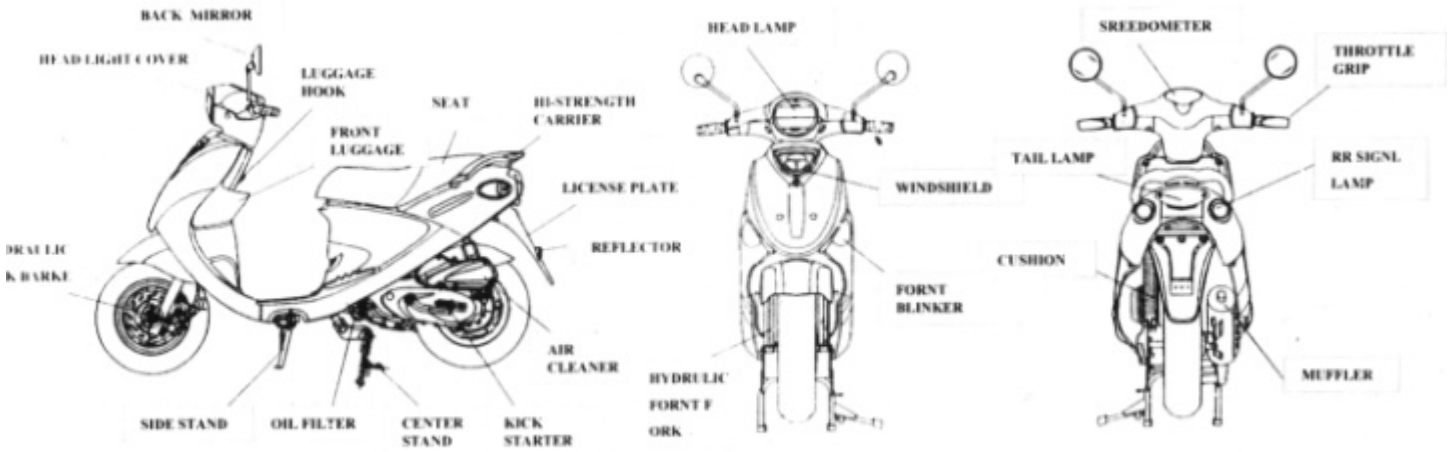
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SPECIFICATIONS

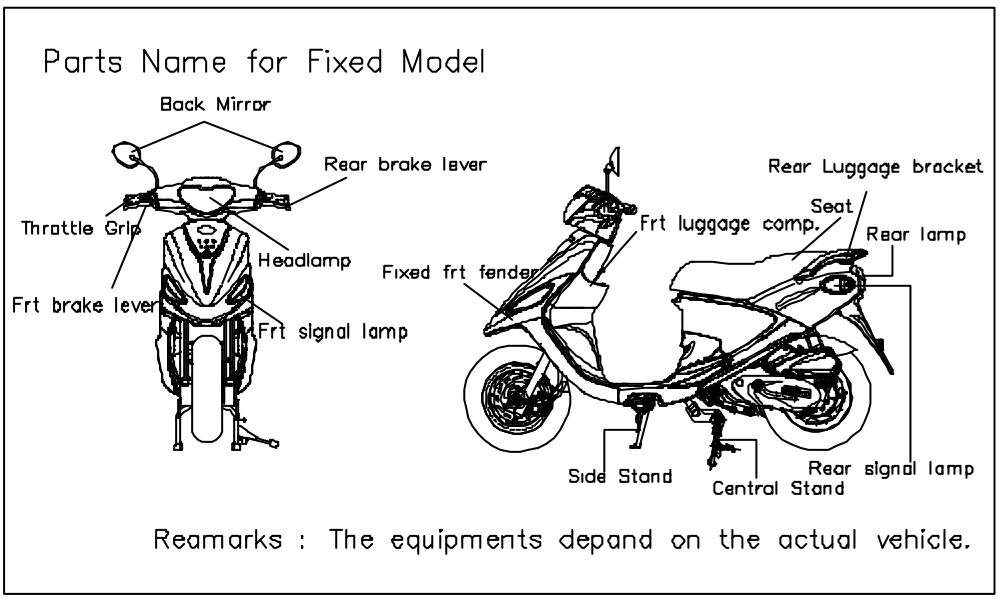
Model	**LIGERO-50**	Transmission	
Overall Length	1780mm	Primary reduction	Direct
Overall width	645mm	Secondary ratio	52/13*44/13
Overall height	1060mm		110CC
Seat height	770mm	Reverse differential	**NA**
Wheelbase	1210mm		
Dry weight	99kgs	**Frame**	Steel pipe
Engine Model	P2	Front fork	Telescopic
Piston displacement	49CC	Rear cushion	Uni-absorber
Bore	40.0mm	Front tire	3. 50- 10*1
Stroke	39.2mm	Rear tire	3. 50- 10*1
Compression ratio	6.8:1	Fuel	Unleaded gas
Ignition	CDI	Capacity	6.3L
Clutch	Centrifugal / CVT	Front brake	Hydraulic disk brake
Shifting	Drive	Rear brake	Durm brake
Lubricant	Auto seperated	Head light	12V-35W*1
Steering angel Left Right	、 41 41	Tail light	12V-21W/5W

Vehicle model reorganization:

1. Movable model



2. Fixed model



2. Service information:

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b. For chassis
c. Others
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a. For engine
b. For chassis
c. Wheel bearing ----------12
(4)Wiring diagram----------13
(5)Troubleshooting
1. Hard starting or no starting
2. Not smooth rotation(weak acceleration; inefficient horse)
3. Engine running not smoothly(low speed)
4. Engine running not smoothly(high speed)
5. Charging abnormal(battery over charging or over discharging)
6. No Sparking, spark plug

(1) The operation notice:

1. Always replace gasket, O ring, cotter, pins and clip whenever reassembled.
2. When tighten screws or nuts, lock tightly as per specified locking torque, and in the sequence of cross direction.
3. Use PGO, or PGO Recommended parts.
4. After dismantling please wash all parts necessary for checking and grease all contact surface when reassembling.
5. Use grease recommended by P.G.O.
6. When removing battery, please dismantle the negative pole (-) first, when assembling please connect positive pole (+) first.
6. Before installing a new fuse, confirm the specification is correct or not.
7. After reassembling, please re-check that all connecting point, locking parts, circuits, polar characteristics are good, before selling out.

(2) TORQUE VALUE

1. Engine:

No	Locking location	Thread Dia (mm)	Locking torque kg-m	Remarks
1	Cylinder head	7	1.0~1.4	When the engine is cold
2	Flywheel outer	10	3.2~4.0	
3	Rear brake lever	6	1.0~1.2	
4	Driving pulley	10	3.2~4.0	
5	Clutch outer	10	3.5~4.0	
6	Right crankcase	6	1.0~1.2	
7	Drive gear box cover	6	1.0~1.2	
8	Left crankcase	6	1.0~1.2	
9	Draining and filler bolt	8	1.8	When the engine is cold
10	Inlet pipe	6	1.0~1.2	
11	Flywheel magneto stator	6	1.0~1.2	
12	Cooling fan	6	1.0~1.2	
13	Muffler nut on cylinder head	6	1.0~1.2	When the engine is cold
14	Starting motor	6	1.0~1.4	When the engine is cold
15	Bracket between eng. and Rubber pad of central stand	6	1.0~1.2	
16	Spark plug	14	2.5~3.0	
17	Fan cover	6	1.0~1.2	
18	Fixed plate, drive clutch	6	1.0~1.4	
19	Nut of rear wheel axle	14	11~13	U TYPE NUT
20	Kick starter	6	1.0~1.2	

2. Chassis:

NO	Locking location	Q'TY	Thread dia. (mm)	Locking torque (kg-m)	Remark
1	Locking nut, steering stem	1	10	4.5	
2	Front axle nut	1	12	4.5 ~ 5.5	U type nut
3	Rear axle nut	1	16	11~ 13	U type nut
4	Rear shock absorber bolt(upper)	1	10	4.0	
5	Rear shock absorber bolt(lower)	1	8	2.4 ~ 3.0	
6	Front brake caliper bolt	2	8	2.0 ~ 3.0	
7	Chassis bolt, engine hanger bracket	2	10	3.5 ~ 4.5	
8	Engine bolt, engine hanger bracket	1	10	3.0 ~ 4.0	
9	Brake hose bolt	2	10	3.0 ~ 3.5	
10	Air release valve	1	6	0.6	
11	Front drum brake arm bolt	1	6	1.0	
12	Rear drum brake arm bolt	1	6	1.0	

3.Other parts please refer the following table:

Standard torque values:

NO	Item	Torque (kgf-m)
1	5mm bolt and nut	0.45-0.6
2	6mm bolt and nut	0.8-1.2
3	8mm bolt and nut	1.8-2.5
4	10mm bolt and nut	3.4-4.0
5	12mm bolt and nut	5.0-6.0
6	5mm screw	0.35-0.5
7	6mm screw	0.7-1.1
8	6mm flange bolt and screw	1.0-1.4
9	7mm flange bolt and screw	1.0-1.4
10	8mm flange bolt and screw	2.0-3.0
11	10mm flange bolt and screw	3.0-4.0

(3)Lubrication instruction:

A. Engine

NO	Lubrication location	Oil type	Remarks
1	Crankcase: rotating part, Sliding part	Premium 2 stroke Motorcycle oil Or SAE#30	Auto-separated Lubrication
2	Cylinder: rotating part, Sliding part.		
3	Drive gear box	SAE85-140	Total 110 c.c. Replacement 90c.c
4	Gasket of starter shaft	Clean grease	(#3)
5	Start idle gear sliding parts	Clean grease	(#3)

B.CHASSIS

Steel ball, steering

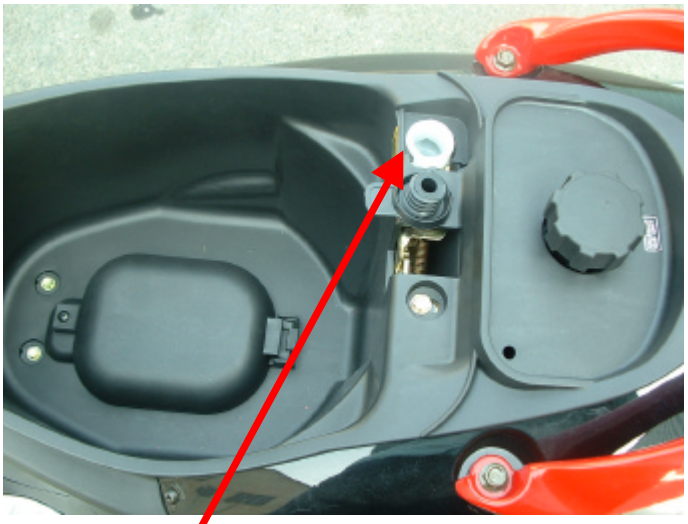




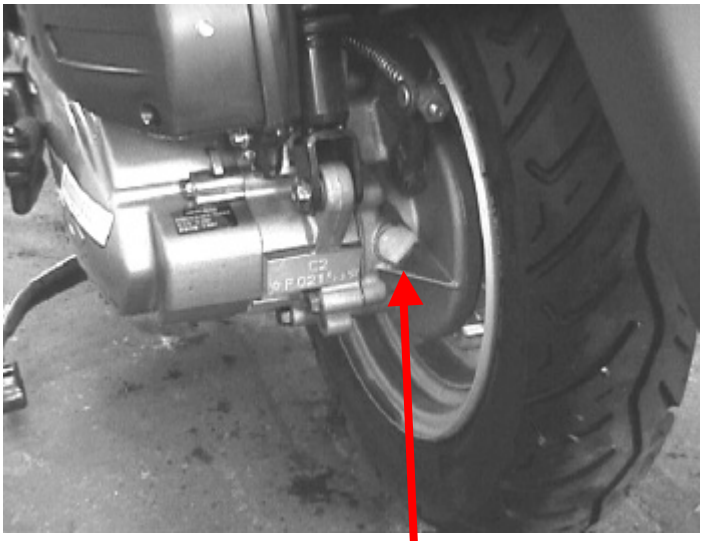
Front brake fluid

Front brake cam

C.WHEEL BEARING



Motor oil



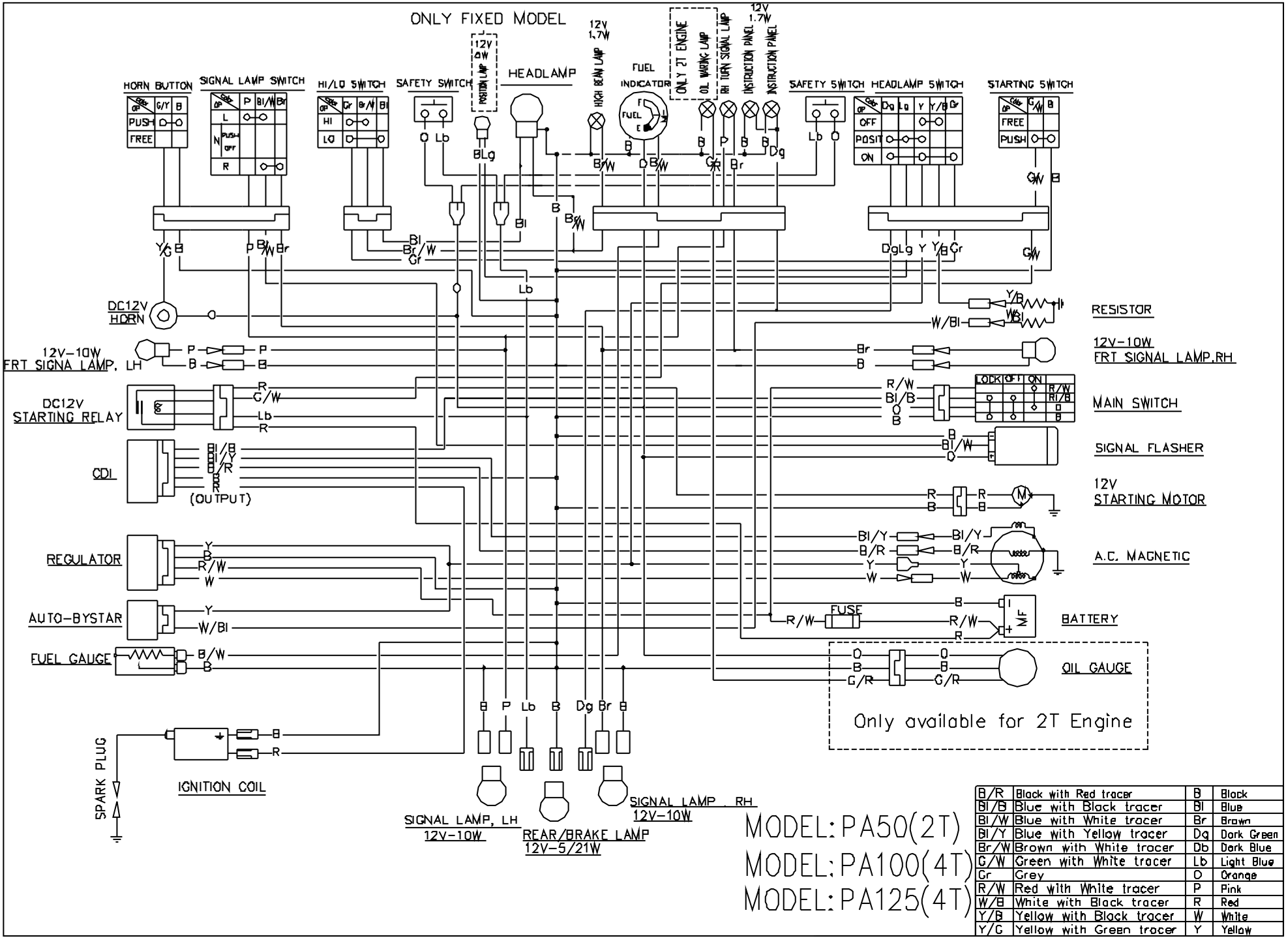
Final transmission mechanism

gear oil



Speedometer gear-clean grease

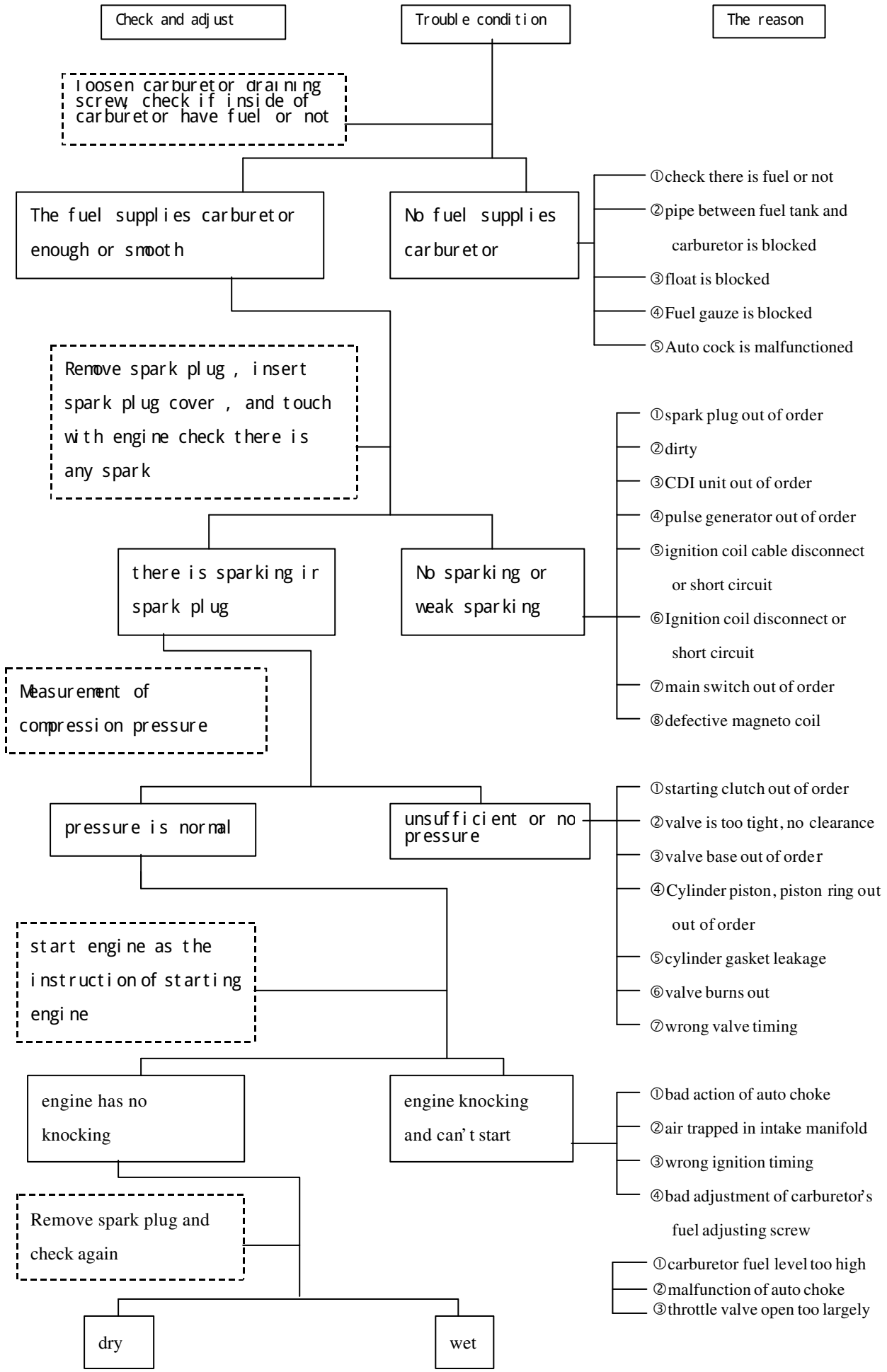
Front wheel bearing-clean grease



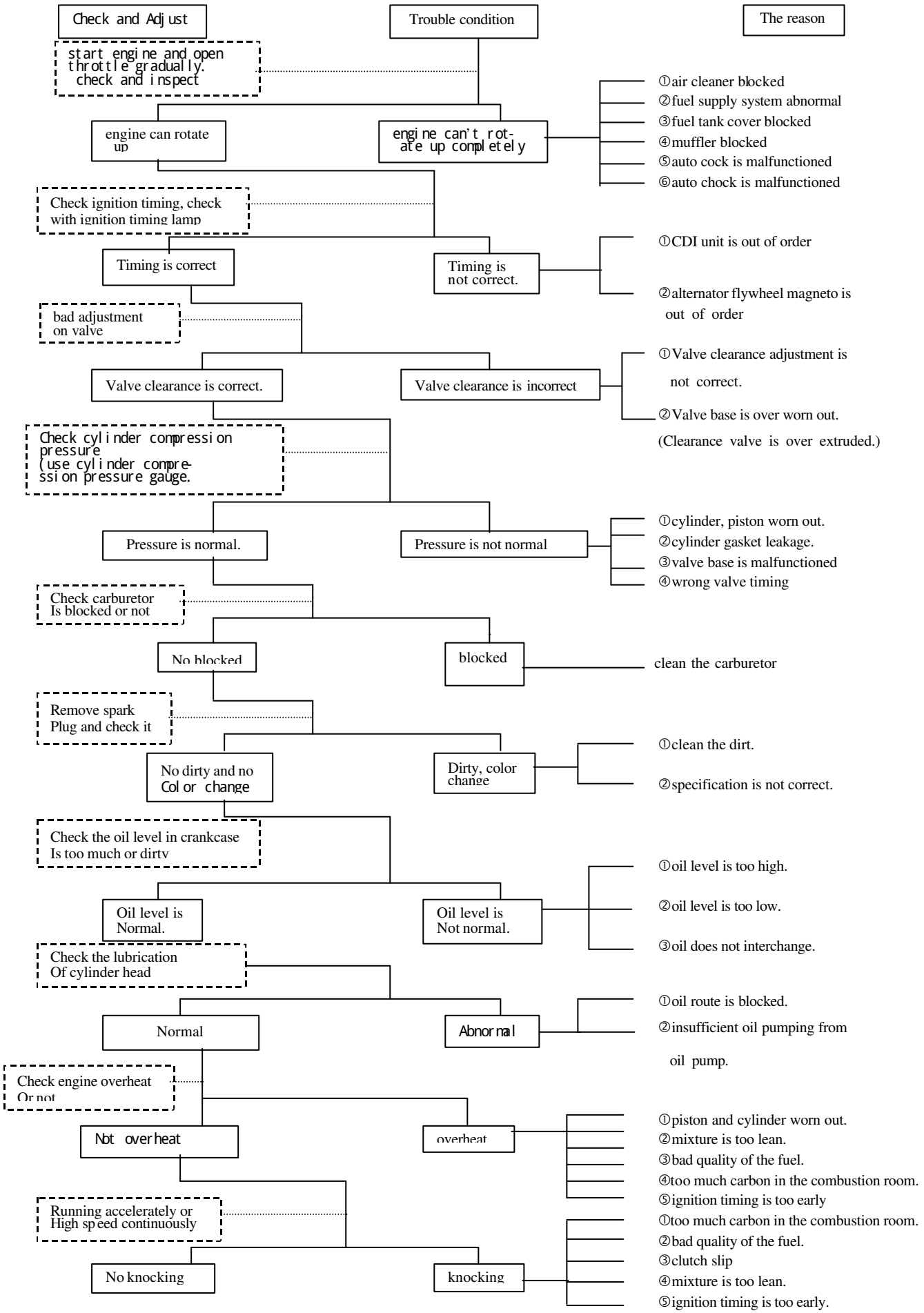
B/R	Black with Red tracer	B	Black
Bl/B	Blue with Black tracer	Bl	Blue
Bl/W	Blue with White tracer	Br	Brown
Bl/Y	Blue with Yellow tracer	Dg	Dark Green
Br/W	Brown with White tracer	Db	Dark Blue
G/W	Green with White tracer	Lb	Light Blue
Gr	Grey	O	Orange
R/W	Red with White tracer	P	Pink
W/Bl	White with Black tracer	R	Red
Y/B	Yellow with Black tracer	W	White
Y/G	Yellow with Green tracer	Y	Yellow

(5)Trouble shooting:

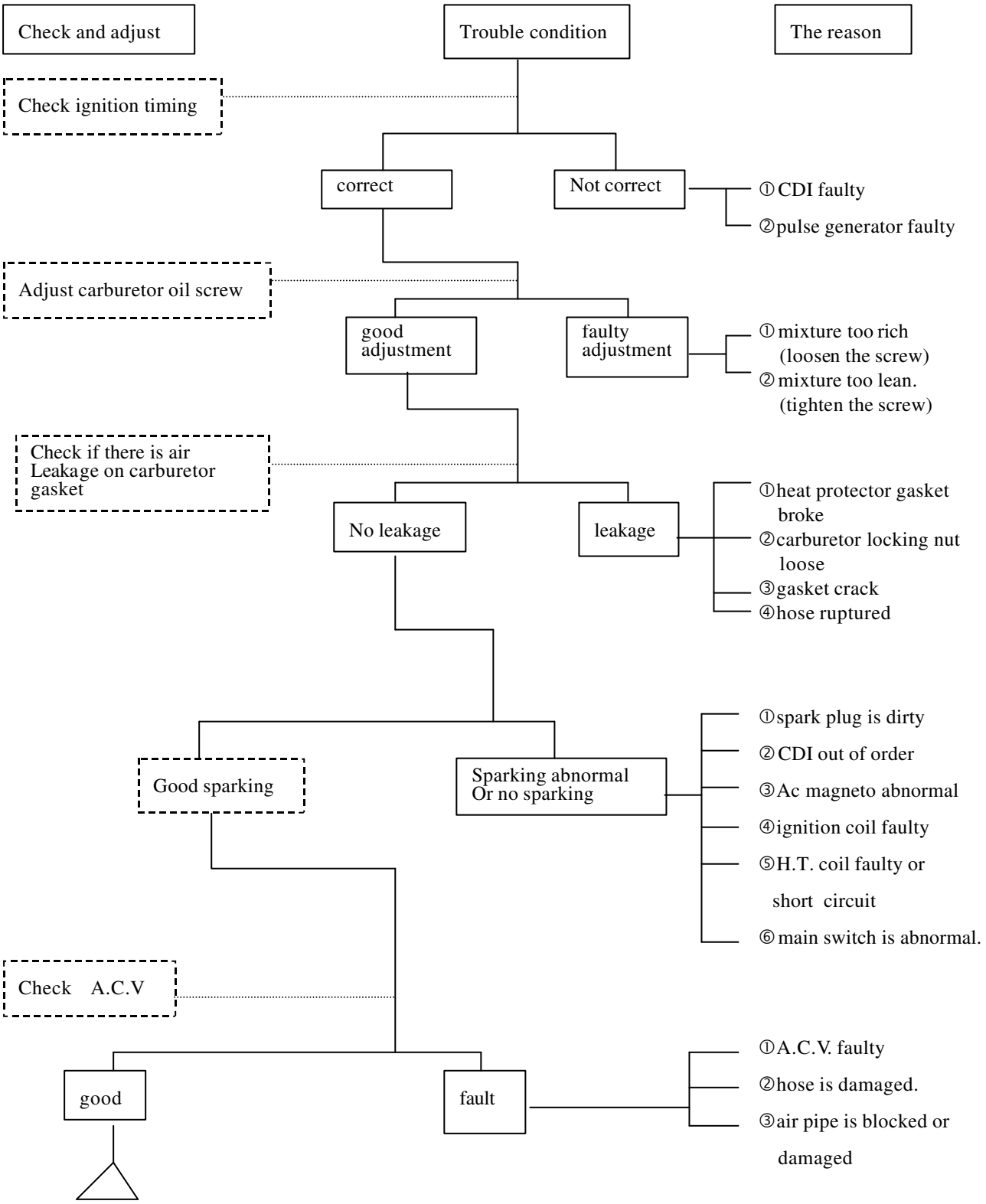
1.Hard starting or can't start:



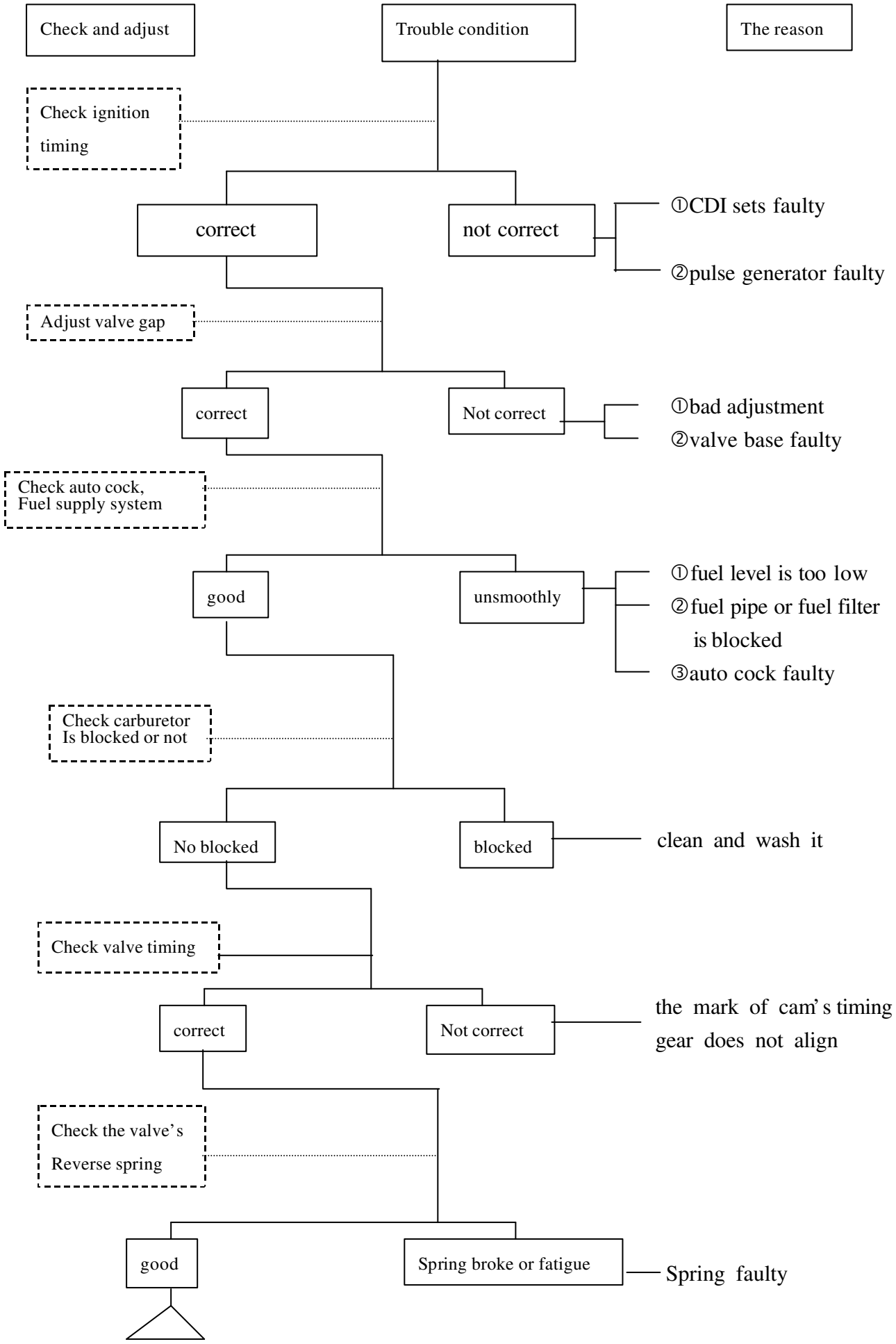
2.Unsmooth rotation(Weak acceleration ; inefficient horsepower)



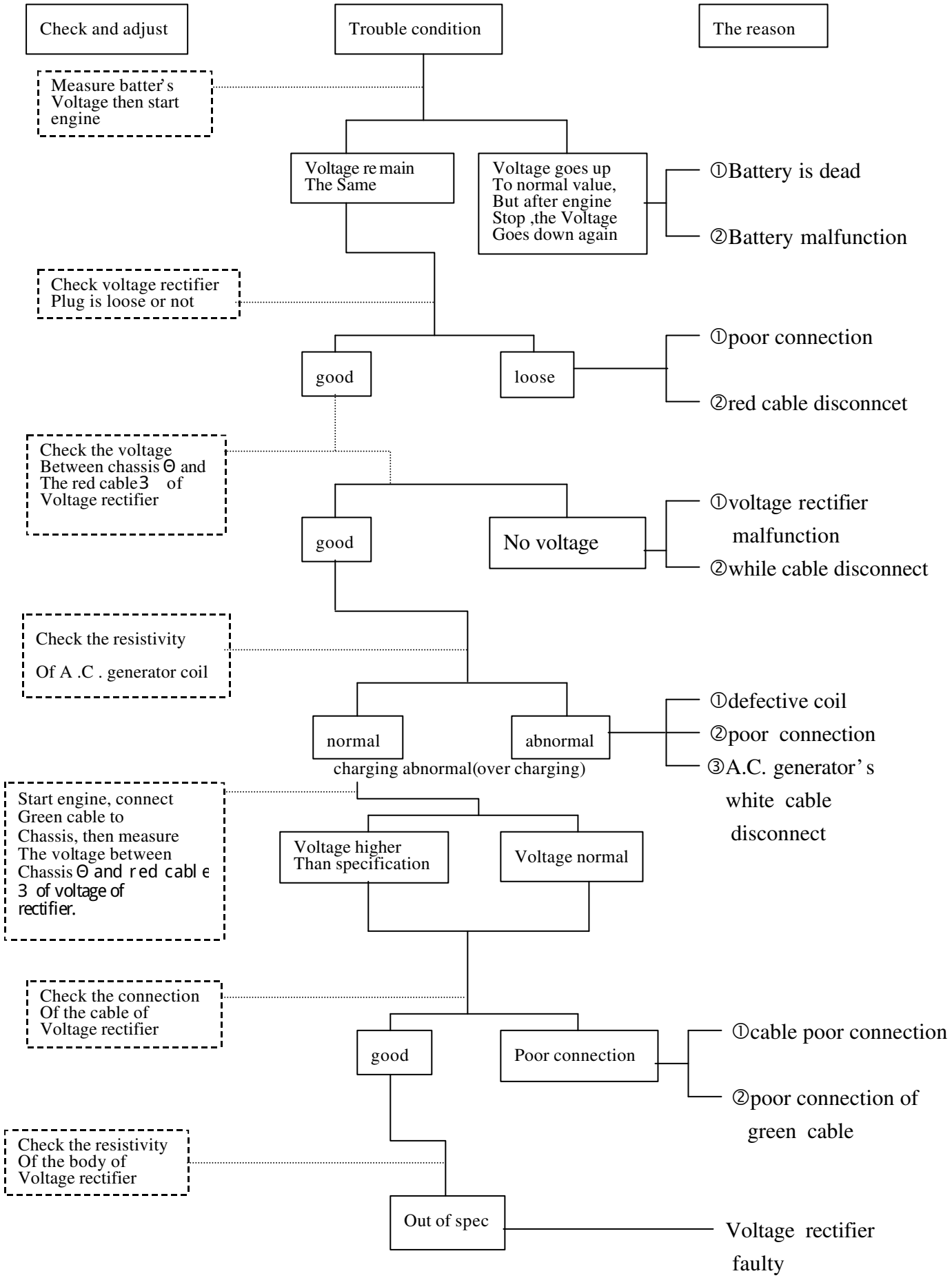
3.Engine running not smoothly(low speed and idling):



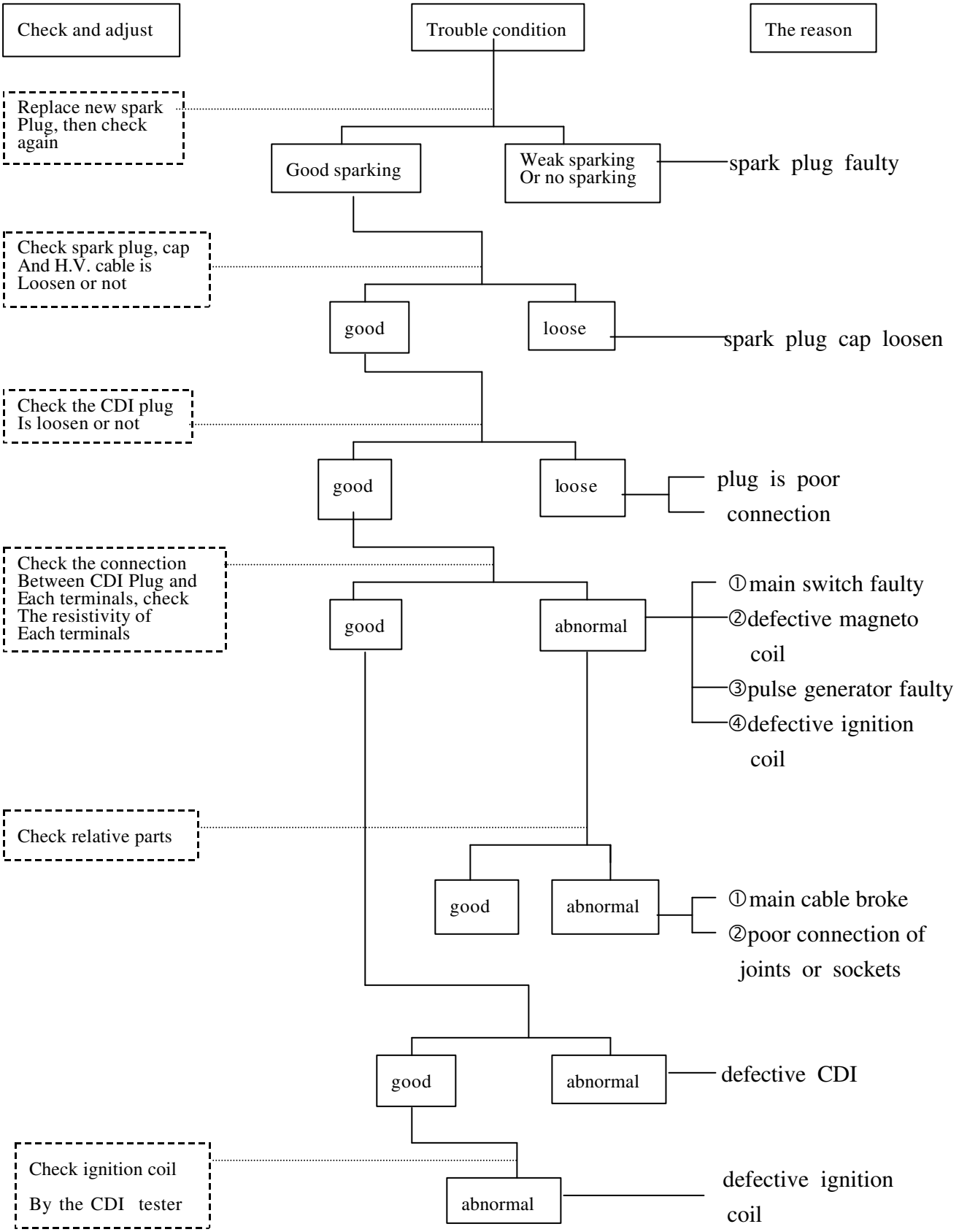
4.Engine running unsmoothly(high speed)



5.Charging abnormal(battery over charing, or over discharging)



6.No sparking, spark plug



3.Checking and Adjustment:

(1)Periodical checking table
(2)Battery
(3)Clean air cleaner
(4)Oil screen
(5)The final reduction mechanism oil
(6)Spark plug
(7)Cylinder pressure
(8)Valve clearance
(9)Ignition timing
(10)Idle adjustment
(11)Front brake adjustment
(12)Rear brake adjustment
(13)Tire
(14)Throttle cable adjustment

(1) Periodical checking table:

1.[○] mark indicates periodical checking

2.[*] indicates changing the parts

Check item		Checking period							Judgement standard	Remark
		Gen-eral che-cking	First Month Or Initial 500km	Home		Office				
				Per 6 Months Or 5000km	per12 months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
A Suspension Steering Handlebar	Loose,swing	○		○	○	○	○	○		
	performance	○		○	○	○	○	○		
Suspension: turning angle					○			○		
Front fork	a.cracked			○	○	○	○	○		
	b.shaft fixed condition			○	○	○	○	○		From steering column
	c.shaft:loose				○	○		○		
B: Brake									Clearance:	Check from Steering column
Brake lever	a.clearance	○		○	○	○	○	○	Front:10-20mm Rear : 10-20mm	
	b.movement of brake	○	○	○	○	○	○	○		
brake	Loose or damage		○	○	○	○	○	○		
	Brake cables change								※ per 2 years	
Brake cam	Worn out							○		
Brake drum And brake shoe	a.clearance between drum and plate			○	○	○	○	○		
	b.brake shoe and brake plate worn out				○		○	○		
	c.brake drum worn and damage				○			○	Standard dia: Rear:130.0mm Limit of use: Rear:131mm	mark type
wheel	front axle:damage or cracked							○		
	rear axle:worn or damage							○		Check rear Axle
	Wheel pressure	○	○	○	○	○	○	○	Unit:kg/c m:Idriver U 1.5 1.75	
	Wheel cracked Or damage	○		○	○	○	○	○		
	Wheel gap and worn	○		○	○	○	○	○	Gaplimit:front wheel: 0.8mm rear wheel0.8mm	
	Wheel surface Or other metals	○		○	○	○	○	○		
	Axle nut screw Pin tightness			○	○	○	○	○	Front axle screw torque 5.0-6.0kg-m rear axle torque 11..0-13.0kg-m	Nut location
	Wheel rim swi-Ngness and da-Mage condition			○	○	○	○	○	Swingness ofr front Rear wheel rim. Vertical swing:2mmbelow Horizpmta;":2mm b;epw	

Check item			Checking period							Judgement standard	Remark
			General checking	First Month Or Initial 500km	Home		Office				
					Per6 Months Or 5000km	per12 months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
Wheel	Front Bearing of axle, Looseness			○	○	○	○	○	○		
	Rear				○				○		
Damper	Rear damper spring cracked		○		○	○	○	○	○		
	ass' part loose or damage				○	○	○	○	○		
	Connecting part Loose					○			○		
	Bracket loose or Damage					○			○		
	Suspen-sion	Connecting Part loose				○			○		
	damper	Oil leakage				○		○	○		
		Cracked				○		○	○		
		assy's part, Loose				○		○	○		
Power Transmi-Ssion	Clutch and Change Speed mechanism				○	○	○	○	○		
					○	○	○	○	○		
	Supply grease				○	○	○	○	○	※ per 2 year	
Electric Install-Ment	Ignition				○	○	○	○	○	Clearance: 0.6~0.7mm NGK:BP7HSA OR SAME SPEC	
	Start mechanism	Starting Motorpinion Meshing				○		○	○		
	wiring	Recharge Effect			○	○	○	○	○		
	battery	Electroly-Te quantit			○	○	○	○	○	Level between "UPPER' AND "LOWER'	
		Electroly-Te s. gra-vity				○		○	○	WHEN 20℃ SPECIFIC GRAVITY: 1.270-1.290	
	wire circuit	Wire conn-ecting Loose or cracked			○	○	○	○	○		

Check item			Checking period							Judgement standard	Remark
			General checking	First Month Or Initial 500km	Home		Office				
					Per6 Months Or 5000km	per12 months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
Engine	Engine parts	Performance, noise			○	○	○	○	○		
		Low speed, Accleration			○	○	○	○	○	Idling:1900± 100rpm	
		Exhaustion	○		○	○	○	○	○		Check the cloir Or exhausting -air
		Air cleaner			○	○	○	○	○		
		Cylinder, cylinder head inlet Pipe, locking Condition							○	Locking torque Cylinder head: (cold) 1.0-1.2kg/m	
		Compression pressure				○			○	Using stating Motor. 6.0kg/c ㎡ (750rpm)	
	Lubricat-Ion Syst-em	Oil leakage			○	○	○	○	○		
		Oil quantity, Dirty			○	○	○	○	○	Add if necessary	
		Oil quantity,	○	○							
		Oil filter			○	○		○	○	Change every 5000km	
	fuel syst-em	Fuel quantity	○								
		Fuel leakage			○	○	○	○	○		
		Carburetor Parts dirty			○	○	○	○	○		
		Carburetor throttle and choke Performance			○	○	○	○	○		
		Carburetor Float height			○	○	○	○	○		
		Carburetor Adjustment			○	○	○	○	○		
		Fuel pipe Changing								※ per 4 years	

Check item		Checking period							Judgement standard	Remark
		General checking	First Month Or Initial 500km	Home		Office				
				Per6 Months Or 5000km	per12 months or 1000km	Per1 Months Or 1000km	per3 months or 2500km	per12 months or 10000km		
Lamp system	Performance	○		○	○	○	○	○		
	Dirty, cracked	○		○	○	○	○	○		
Horn turn Signal Reflector	Performance	○		○	○	○	○	○		Horn Turn signal
lock	Performance			○	○	○	○	○		
Rear view mirror	Check the illumination	○		○	○	○	○	○		
Blinker linc-Nese plate nu-Mber&mark	Dirty cracked	○								
Instrument board	performance	○		○	○	○	○	○		
Muffler silencer	Ass' y part Loose cracked			○	○	○	○	○		
	performance				○		○	○		
chassis	loose or cracked				○		○	○		
The earlier Abnormal condition	Confirm it does Not happen again	○								
others	Chassis Lubrication			○	○	○	○	○		
	Decoking mixer ,muffler, silencer				○			○		

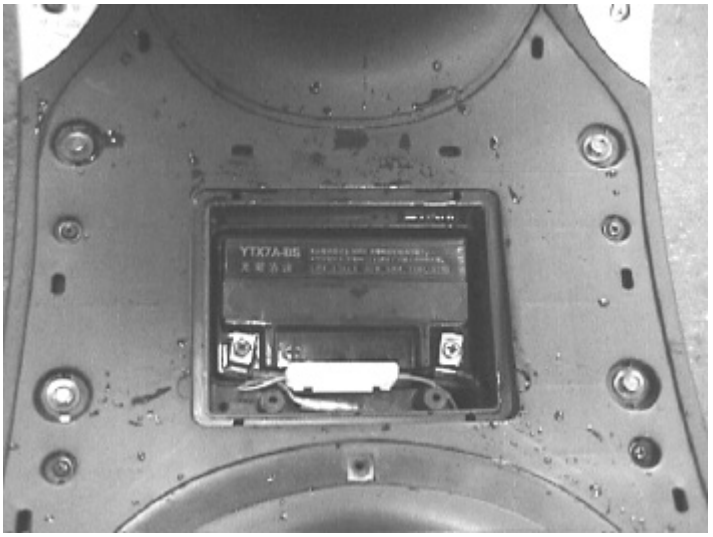
(2) Battery: Recharge when run out of it

1.Remove the floor mat.

2.Screwing out the two screws on the battery cover; remove the battery cover.

3.Remove the negative cable and then the positive cable, take out the battery to recharge.

4.Re-assembling the battery as the opposite procedure of disassembling after recharging.





Note:

A. Do not take out the sealed bolt when recharging.

B. Without refilling water for the battery.

Please recharging (12V) as the following current.

Time standard: 0.3A*5~10Hr or Rapid: 3A*1Hr

(3) Clean air cleaner

1. Remove air cleaner cover.
2. Take out the air cleaner filter.
3. Clean the filter by compressed air.
4. Assemble the air cleaner by the opposite proce

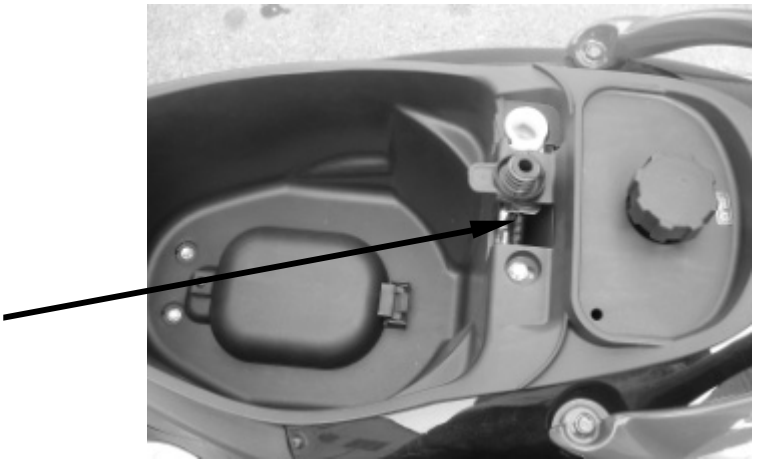


Attn: Do not start engine when air cleaner is not installed.

(4)MOTOR lubricant oil

- take off the cap of oil tank
- check the level of oil.

.





(5) The final reducing mechanism oil

1.Change the oil in the gear box:

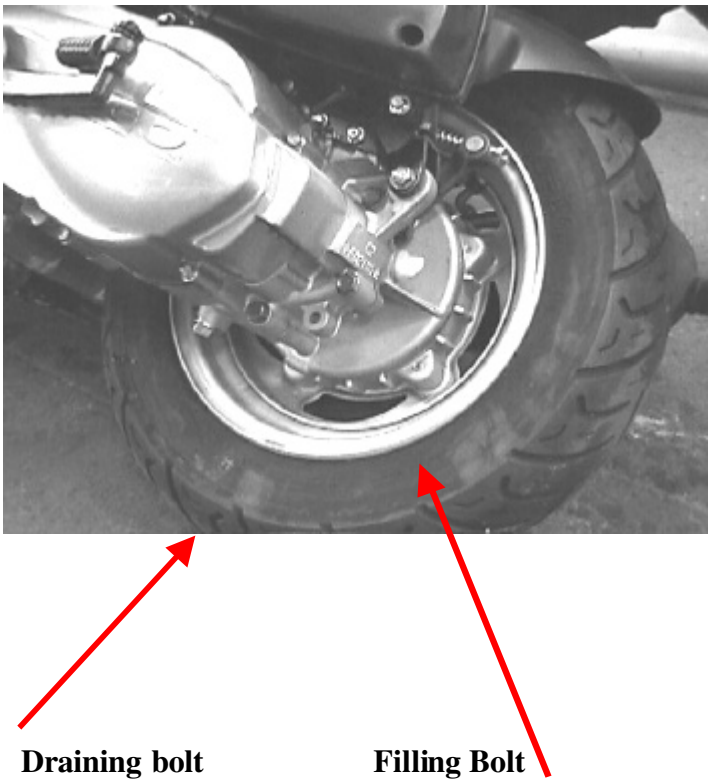
a. Turn off the engine after warm up.

b. Put a bowl under the engine.

c. Remove the draining bolt and filling bolt to drain the gear oil off.

d. Lock the draining bolt before refill 110c.c. gear oil and then lock the filling bolt.

e. Locking torque:1.8kg.m



Draining bolt **Filling Bolt**

(6)Spark plug

1.Remove spark plug.

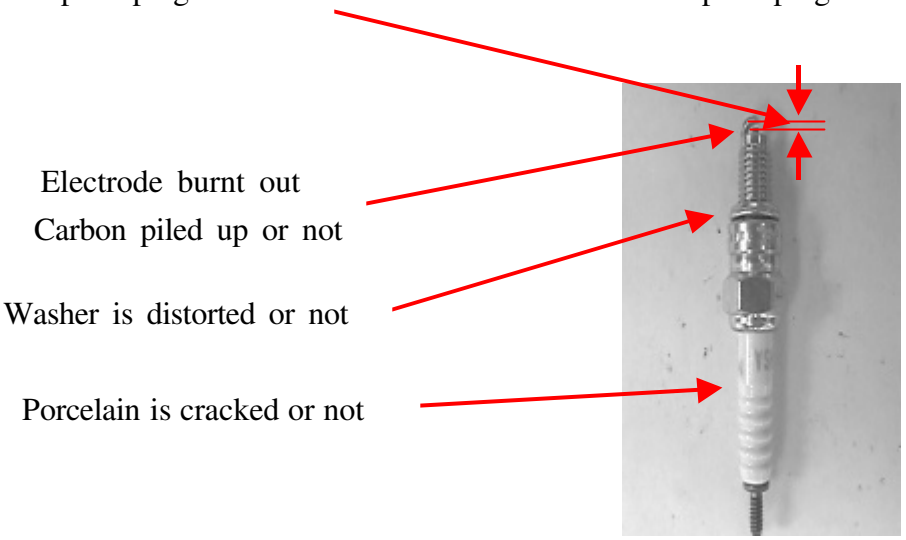
2.Check the spark plug electrode and see whether it is burnt out/ carbonized or not.

3.Clean the electrode, if it is dirty.

●Spark plug specification

NGK: BP7HS or BPR7HS equivalent

Gap of spark plug:0.6~0.7mm



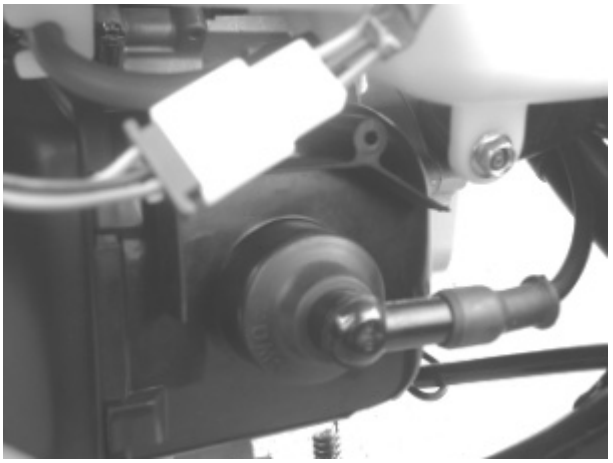
(7) Cylinder Pressure

1.Measure it when the engine is warm.

2.Remove the cover at the right hand of the step floor.

3.Remove the spark plug then place cylinder pressure gauge. Then fully open the throttle and act on the starter motor to measure the compression pressure.

Compression pressure: 6.0kg/cm^2 at 750 rpm



* When the compression pressure is too low, check the following:

a. Gasket of the cylinder head is damaged.

b. Piston ring worn-out

c. Piston or cylinder worn-out

* The cylinder compression pressure is usually too high when there is too much carbonization in the combustion chamber and the piston tip.

(8) Ignition Timing

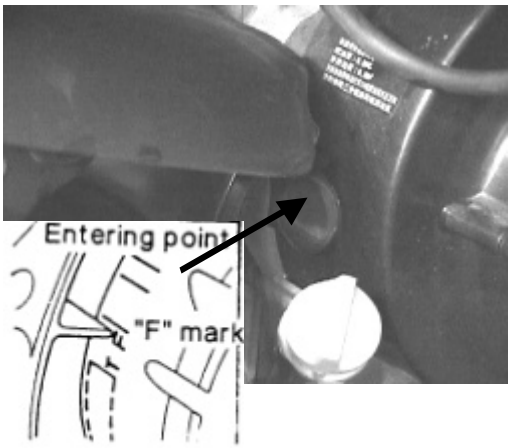
Note: It is no need to adjust ignition timing and CDI set. When ignition timing is not correct, just check the ignition system.

1.Remove the checking hole cover of ignition timing.

2.Using the ignition timing light to assure the ignition timing is correct.

3.Under idling, it means in good function when crankcase' s mark matches to the "F" on the flywheel.

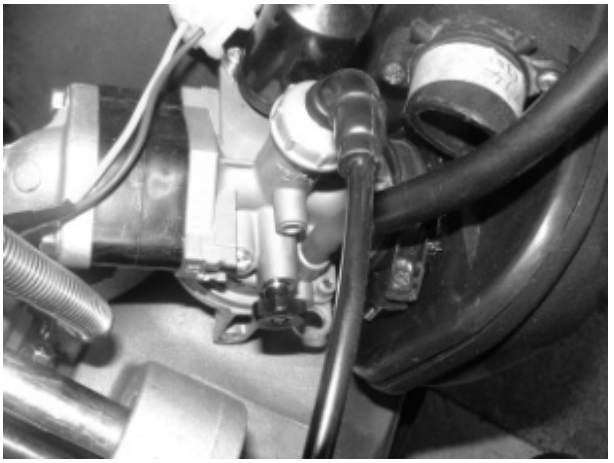
4.Raise the engine revolution to 5000 rpm slowly, it means in good function, if the crankcase's mark matches with Entering point of the flywheel.



(9) Idling Adjustment

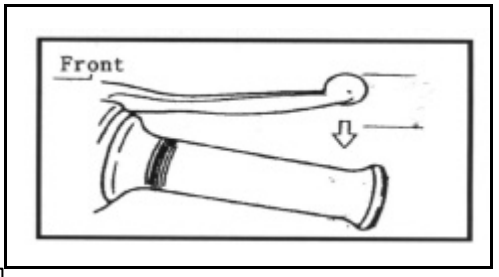
Note: Adjust idling only when the engine is warm.

1.Remove the checking hole cover of carburetor.
2.Start the engine and connect the tachometer.
3.Adjust the throttle valve screw to the specified revolution.
4.Specified idling revolution: 1900 ± 100rpm
- If rpm is still unsteady or fuel up is not smooth, please re-adjust the fuel intake screw.



(10) Front Brake Adjustment

1.Check the clearance of front brake lever
Clearance: 10-20mm.
2.If the clearance is beyond standard, check whether:
a. The air mix into the pipe/caliper.
b. The oil brake system is leaking.



Note: Try brake lever to see if it's loose. Check the brake oil.once air mixed in the oil pipe, which will reduce or damage the brake efficiency or even its function.

3.Check the oil level:
a. Refill the brake oil when the level is under the LOWER line.
b. Oil specification: SAE J-1703 or DOT3 orDOT4.

Note:
a. To prevent the oil splitting onto the parts or clothes, put a piece of cloth on the bottom when refilling.
b. Be caution not to mix water or particles into the master cylinder when refilling.
c. Never use the oil that is not complied with spec.
d. In case the oil stains on the eyes, wash with water at once and then ask for medical care immediately.

(11) Rear Brake Adjustment

1.Check the clearance of rear brake lever.

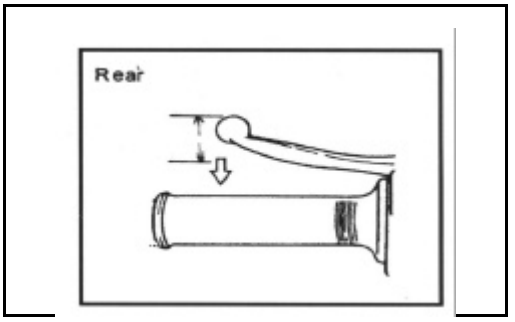
Clearance: 10~20mm

2.If the clearance is beyond the above

Standard, adjust it by rotation the screw.

a. Left-handed rotation-Enlarge the clearance.

b. Right-handed rotation-Reduce the clearance.



Note: When the arrow of rear brake indicator align with the arrow of left crankcase, change the brake lining.

(12) Tire:

1.Check Tire air pressure.

2.Tire pressure:

Front tire: 1.50kg/cm^2

Rear tire:1.75kg/cm^2



3.Tire specification:

Front tire: 3.5-10

Rear tire: 3.5-10

Note:

1.Check and adjust the tire pressure when it is too low.

The pressure is according to the carrier, driver, passenger, accessories and cruise speed

2.Proper loading is very important for steering, riding, braking, performance and safety.

Never carry any parcel unfastened.

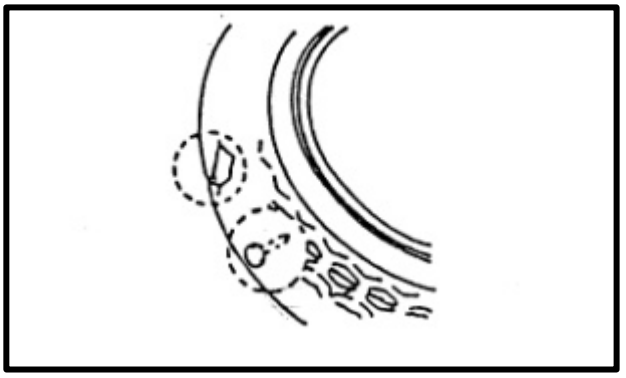
Load the heaviest parcel on the center of vehicle, balancing the weight on both sides.

Beware of the weight loaded properly and check the tire pressure. The total weight of carrier, driver, passenger, and accessories cannot exceed the approved limit. An overload vehicle is easy to cause tire damage and accident for rider

3.Check if there is any sharp object piece the tire.

4.Check the depth of wheel stripe.

●Depth (front and rear): According to the mark of tire" " indicating the necessity to change a new tire.



(13) Throttle cables Adjustment

1.Check the clearance of throttle

2.Normal clearance: 1.5-3.5mm

Adjust it by rotating the adjust nut. Change it if the throttle cables can' t be adjusted.



4. Dismantling, Maintaining, Repairing and assembling operation

(1) Lubrication system
(2) Plastic parts of Chassis
(3) Engine dismantling
(4) Drive pulley, starter, clutch, driven pulley
(5) Cylinder head and valve
(6) Cylinder and piston
(7) AC generator
(8) Final transmission mechanism
(9) Crankcase, crank shaft
(10) Carburetor
(11) Steering stem, front wheel, frt brake comp., frt fork
(12) Rear wheel, rear brake, rear damper
(13) Fuel tank

(3)Engine Dismantling

A. Dismantling engine.

1.Take off the luggage compartment.

2.Take off the left and right body covers.

3.Take off the lower mudguard fender.



4.Remove vacuum pipe, fuel pipe, auto choke, cap of spark plug, rear Brake cable carburetor pipe, engine flywheel shelf' s nut, starter Motor cable plate and rear damper bolt.

5.Remove the engine.

B. Installing Engine.

1.To install engine, please reverse the above procedures.

2.Locking torque:

M8: 2.0~3.0kg-m

M10: 3.0~4.0kg-m

M12: 5.0~6.0kg-m

3.After installing, please do the following checking and adjustment:

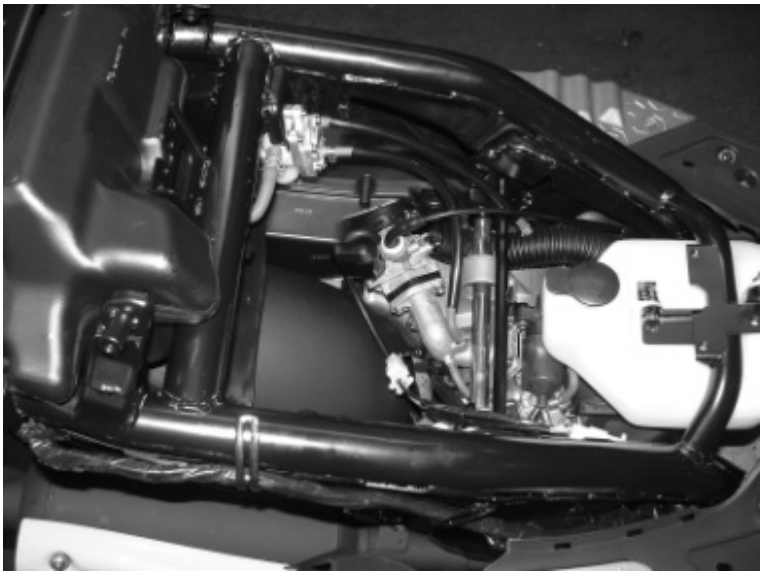
Checking and adjustment:

a. Wiring connection.

b. Throttle cable and oil control cable.

c. Rear brake adjustment.

d. Fuel and oil route.



(4)Drive pulley, starter & clutch

A. Troubleshooting:

a. Engine starts, but vehicle does not move.

1.driving belt worn out

2.driven plate worn out

3.clutch lining worn out

4.driving plate' s spring broken

b. The vehicle stops or trembles when running,

1.clutch lining spring cracked or broken.

c. Can' t reach high speed, no pick-up

1.driving belt worn out.

2.Driving plate spring distortion.

3.Weight roller worn out.

4.Driving plate abnormal.

Note:

No grease and oil allowed to stain on driving belt and driven plate.

B. CVT parts measurement data

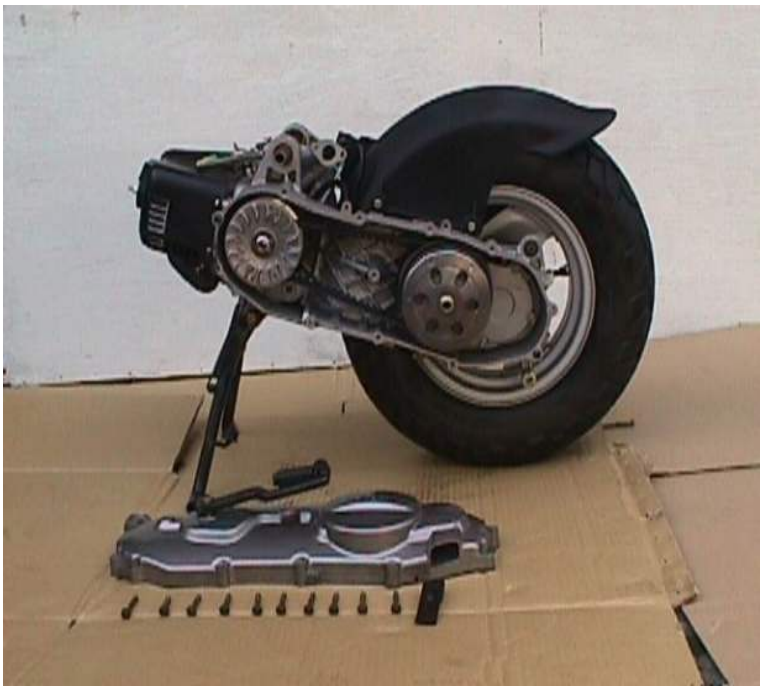
Item	Standard value(mm)	Limit of use(mm)
Model	50cc	50cc
The inner dia. of Slide driving plate	20.035-20.085	20.123
The outer dia..of boss, movable Driving plate	19.960-19.974	19.911
Belt width	18.0-19.0	17.0
Clutch lining thickness	3	1.5
Clutch outer diameter	117.0~117.2	117.5
Driving plate spring, free length	87.9	82.5
The outer diameter of driven plate sets	33.965~34.025	33.95
The inner diameter of slide Driven plate	34.000~34.025	34.070
The outer diameter of weight Roller set	15.992~16.008	15.50

C. Driving pulley.

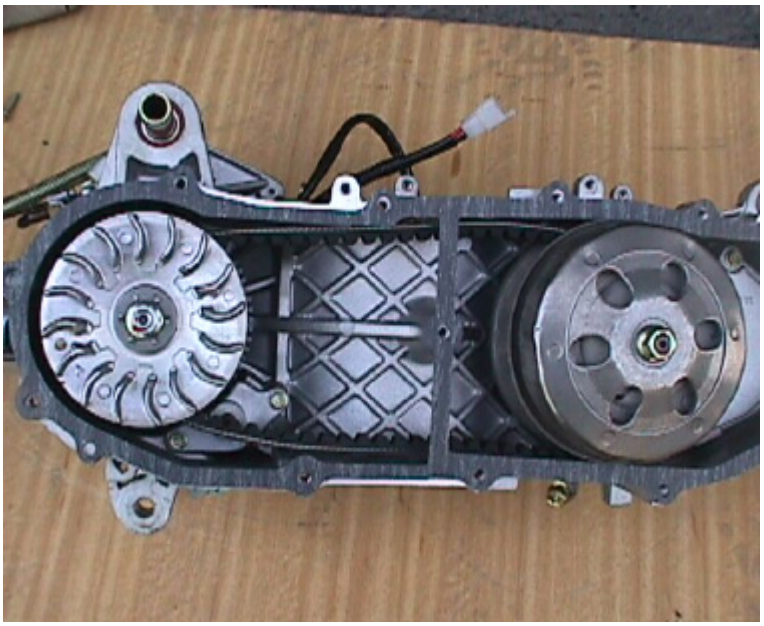
1.Take off the 8 screws of left Cover, remove the left cover.



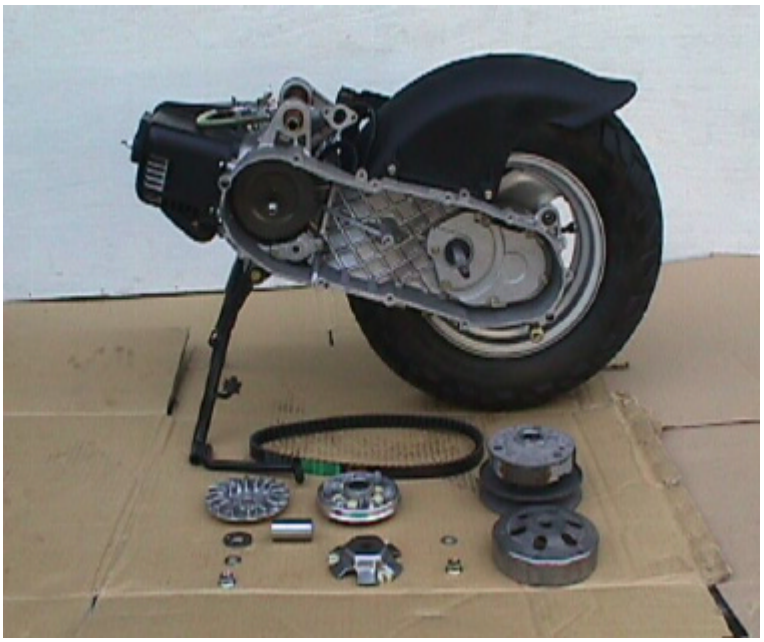
2.Take off the left cover.



3.Remove the fixing nut of the clutch.



4.Take off the ramp plate.

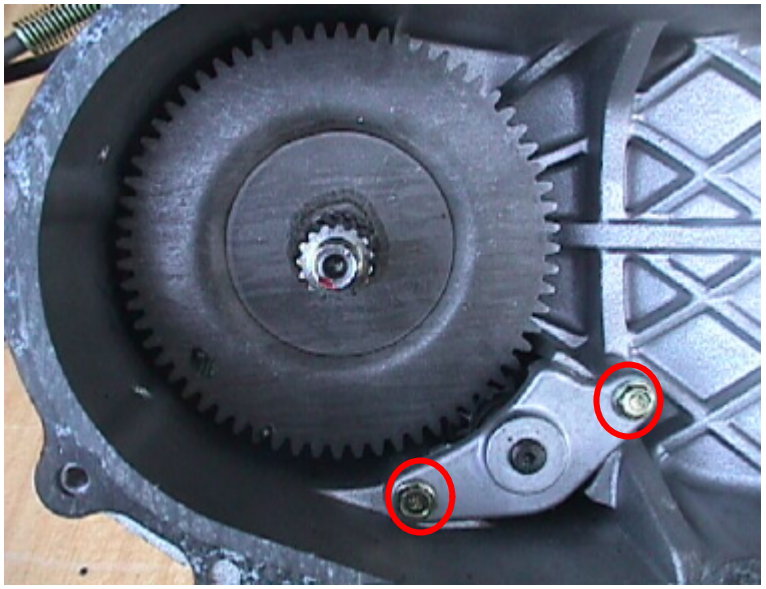


5.Take off the belt and the rear clutch.

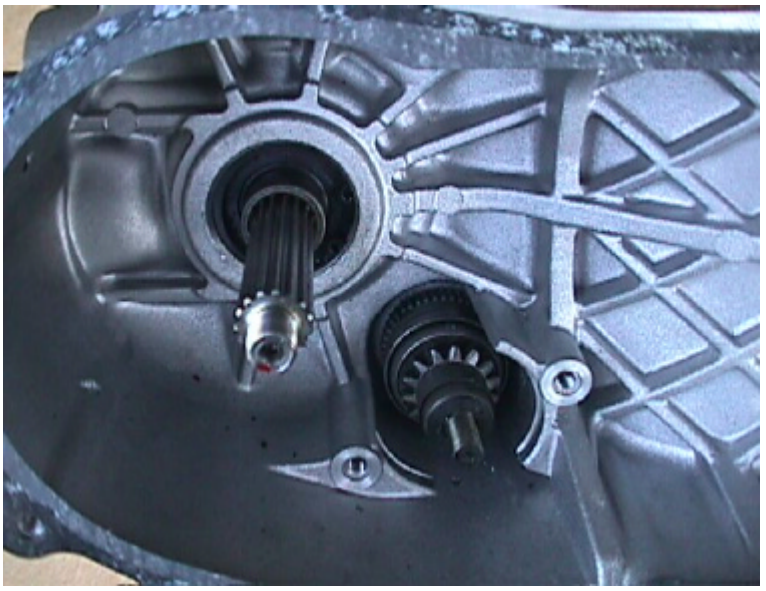
6.Take off the driving plate.

- Take off the driving gear start set.

7.Remove the start idle gear fixing plate.



8.Take off the idle gear.



9.To assemble the driving pulley, please reverse above procedure.

Locking torque: 1.Nut of driving pulley:M10: 3.2~4.0kg-m 2.Locking nut of clutch:M10: 3.5~4.0kg-m

10.Checking the driving belt

(1)check whether it is cracked or not or its rubber and fiber are loose or not check also if they are extraordinarily worn out.

(2)driving belt width:

limit of use : change it below 17.0mm.

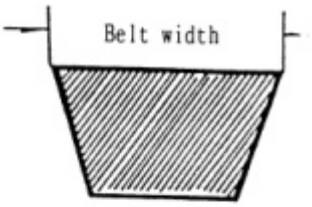
11. Disassemble the slide driving plate set

(1)Remove the bush of slide driving plate

(2)Remove the screw, and disassemble the cover of slide driving plate.

(3)Remove RAMP plate.

(4)Remove weight roller.



12.Checking list:

(1)Check the wearing condition of the weight roller.

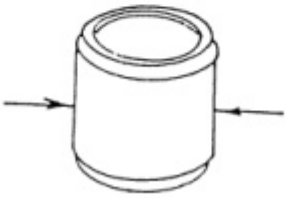
limit of use: change it when below 15.5mm.

(2)Check inner dia of slide driving plate's gasket.

Limit of use: 50cc:Change it when above 20.123 mm

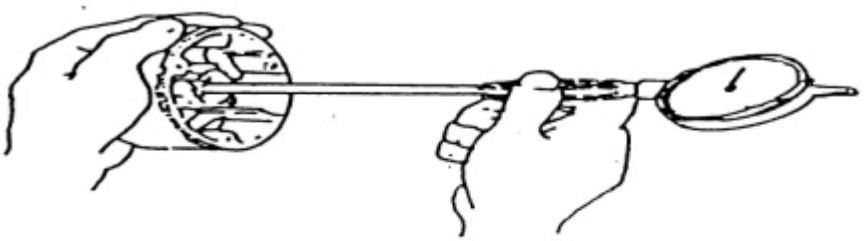
(3)Check the wearing condition for driving pulley surface.

(4)Check the outer diameter of the driving plate's boss.



Check the wearing condition

Limit of use: change it when below 19.911mm





13.Assemble the slide driving plate.

(1)Clean the inner surface of slide driving plate, then assemble the roller.

(2)Assemble the ramp plate.

(3)Please reverse the procedures of disassembling to finish assembling.

D. Starter dismantling

1.Dismantle the left crankcase cover

2.Remove the hexagon nut, then remove the starter lever.

3.Remove five screws of isolating plate.

4.Remove the starter spring from the start returning positioner.

5.Remove the driven gear comp of kick starter.

6.Remove the retaining c-type clip

7.Remove the spindle comp.

Of kick starter.

8.Checking the starter

a. Check the wearing condition of the outer diameter of the spindle comp and the inner diameter of bush and gear.

b. Check the wearing condition of the shaft of driven gear comp, gear sets and ratchet.

9.Assembling the starter

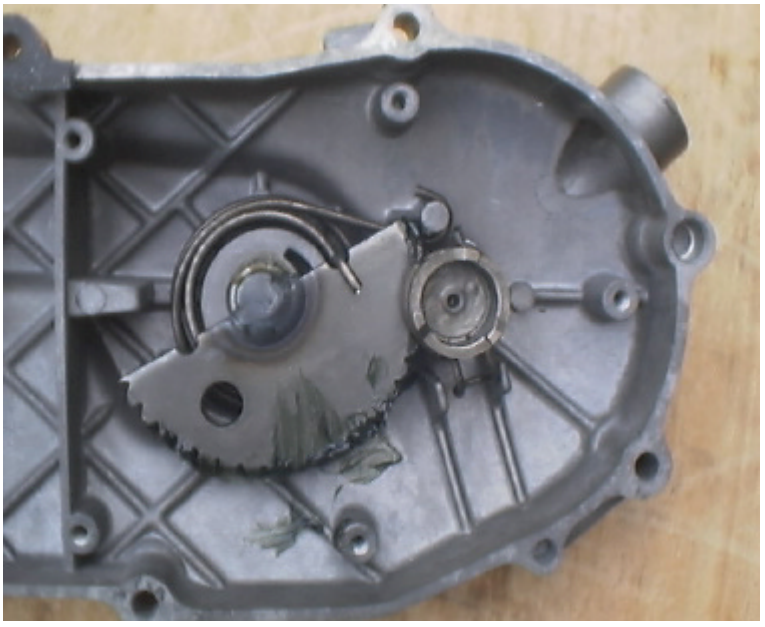
To assemble the starter, please follow the opposite procedures of dismantling.

Locking torque: M6:1.0~1.2kg-m

Note:

①Make sure that on end of the torsion spring is hooked on the groove of driven gear, and another end of the torsion spring is hooked on the poled inside the left crankcase.

②Put some grease on shaft and gear sets before assembling.



E. Clutch driven pulley

1.Dismantle the clutch

a. Remove left crankcase cover.

b. Remove driving plate.

c. Remove driving belt.

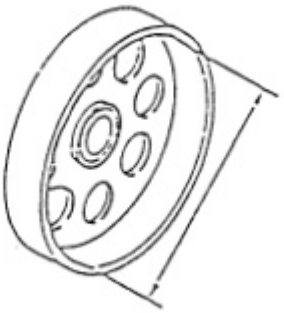
d. Remove the M10 locking nut, then the clutch.

2.Assembling the clutch: please follow the opposite procedure of dismantling.

Locking torque: M10: 3.5~4.0kg-m

3.Checking the clutch:

Dismantling the clutch needs the special Tool. please contact your dealers.



a. Check the clutch driven face.

Check the clutch cover about its wearing

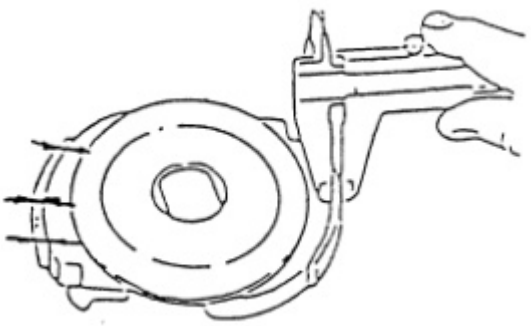
Condition and inner diameter measurement.

Limit of use: 50cc:Change it when above 117.5mm

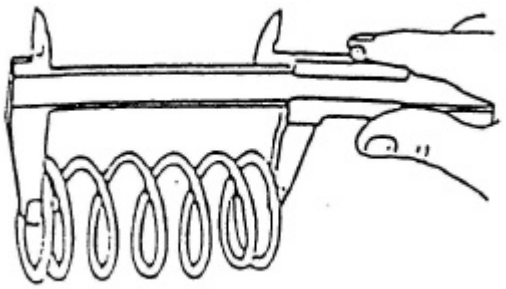
b. Check the clutch lining wearing condition

and measure the lining thickness

limit of use: change it below 2.5mm.



c. Check driven spring free
length: standard: 87.9mm
Limit of use: change it as it
Is below 82.5mm(50cc)



d. Check wearing condition of
driving plate set.
Outer diameter measurement:
Limit of use: change it as it
Is above 33.950mm

e. Check wearing condition of
slide driven plate.
Inner diameter measurement:
Limit of use: change it as it
Is above 34.070mm

f. Check is there any wearing
occur to the ditch.

g. Check wearing condition of
seal location, if necessary
change a new one.

(5)Cylinder and piston:

A. Troubleshooting.

a. compression pressure is too low, difficult to start engine and running unsmoothly.

1. Cylinder head gasket cracked.
2. Spark plug is not well-locked.
3. Piston ring worn out or cracked.
4. Cylinder, piston worn out.
5. Reed valve is defective.

b. compression pressure is too high, engine overheating or abnormal noise.

1.piston tip has too much carbon piled up.

c. Abnormal piston noise

1. cylinder and piston worn out.
2. Piston pin hole or piston pin worn out.
3. Connecting rod small-end or bearing worn out.

d. Abnormal piston or cylinder noise

1.piston ring worn out or cracked.
2.Cylinder worn out or cracked.

B. The operation notice:

1.clean before operation to avoid particles dropping into engine.
2.The connect surface of gasket must be clean.
3.Dismantle the cylinder and the cylinder head by screw driver.
Do not scratch the contact surface.
4.Cylinder inner surface and piston outer surface can't be scratched.
The contact surface should be lubricated by specified oil.

C. PISTON & CYLINDER DATAS:

Part name/description			Standard Value (mm)	Limit of use (mm)
Cylinder head	Flatness			0.100
cylinder	Bore		39.995~40.015	40.050
Piston/ Piston ring	Clearance b/w Piston ring piston and	Lst ring	0.05~0.06	0.10
		2nd ring	0.05~0.06	0.10
	Piston outer diameter		39.950~39.970	39.895
	Measuring location of piston outer dia. (12mm from the lower end of skirt)			
	Clearance b/w piston and cylinder		0.045~0.065	0.10
	Piston pin hole inner dia		13.022~13.013	13.045
Piston pin hole inner diameter			10.002~10.008	10.025
Piston pin outer diamerer			9.994~10.000	9.970
Clearance between piston and piston pin			0.004~0.018	0.030
Connecting rod small end inner dia			13.996~14.007	14.025

D. cylinder head, cylinder, and piston dismantling.

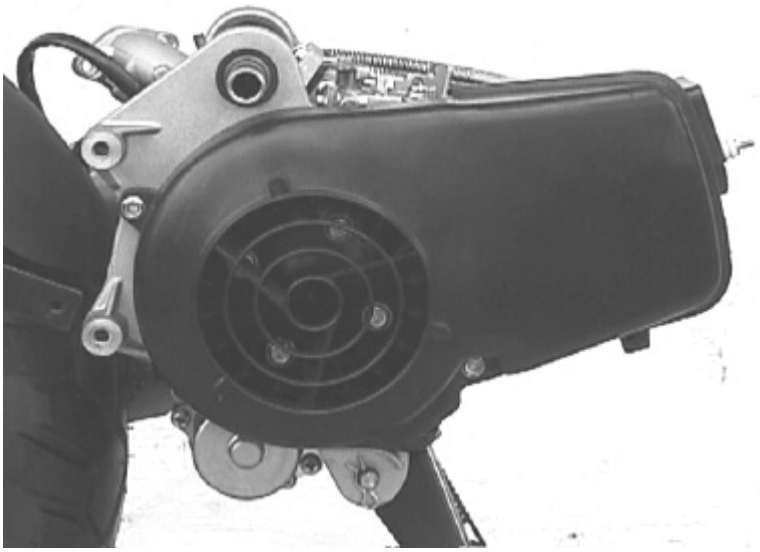
1.Remove the engine.

2.Screwing out the two M6-bolt of cooling cowl.

3.Screwing out the two M6-blot of fan cover.



4.Remove the cooling cowl and fan cover.



5.Remove the spark plug.

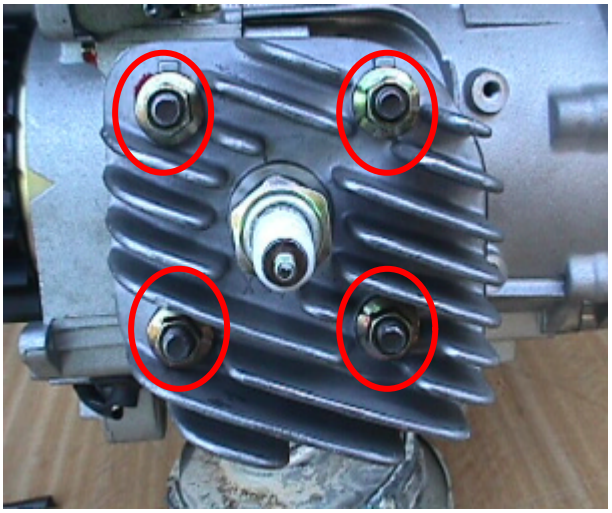
6.Remove the two M6 nuts on the muffler and cylinder.
Also remove the two M8-bolt of crankcase.

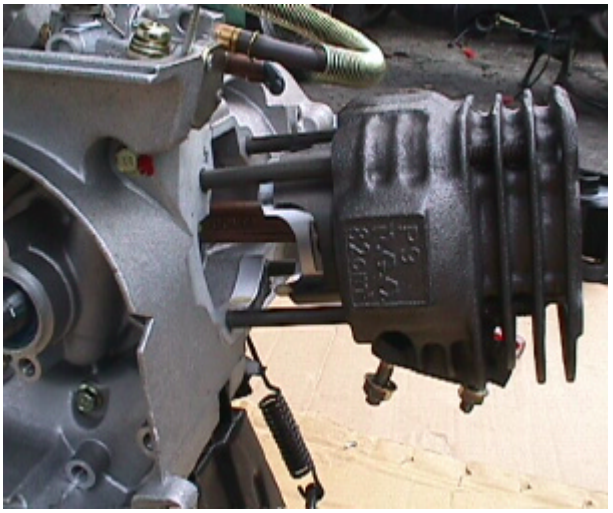
7.Remove muffler.



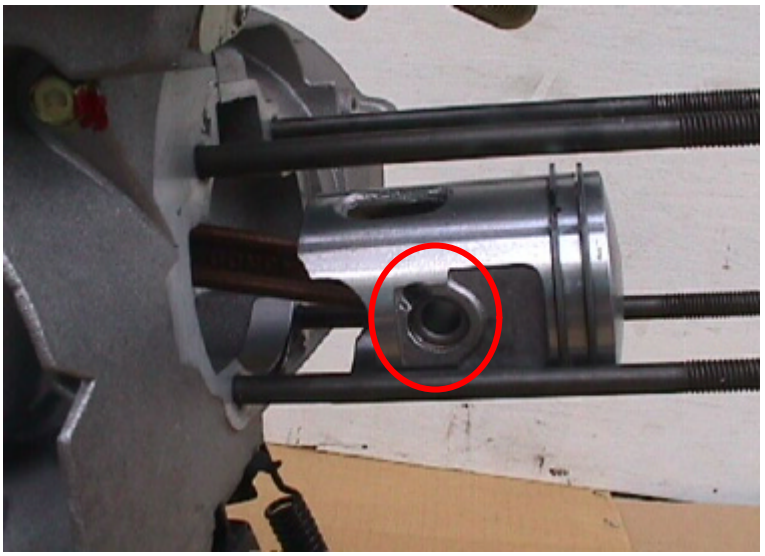


8.Remove the four M7-nut on the cylinder head, then remove the cylinder head and cylinder head gasket.





9.Remove the Cylinder and the gasket.



10.Remove the c type clip on the piston and piston pins by the nipper.

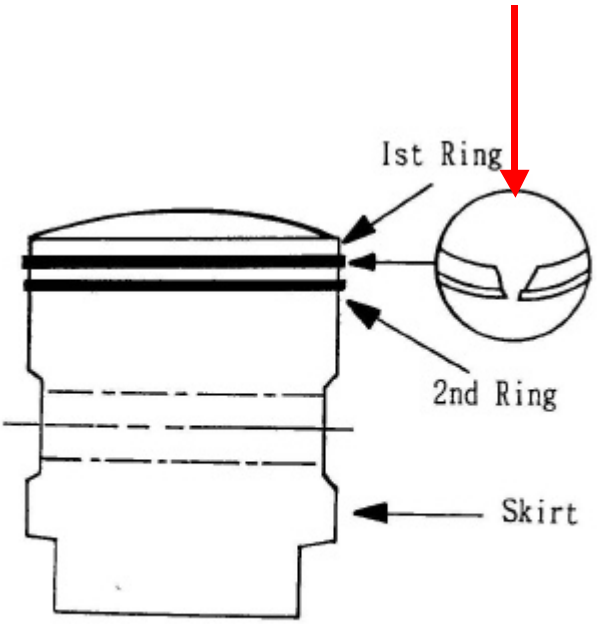
- Take off piston.

11.Dismatling of the piston ring Take off the first piston ring then the second ring.

12.When assembling please reverse the procedures of dismantling.

Locking torque:
M7:1.0-1.4kg-m
M6:1.0-1.2kg-m

Opening end of piston ring



(6)A.C. Generator, Flyweel

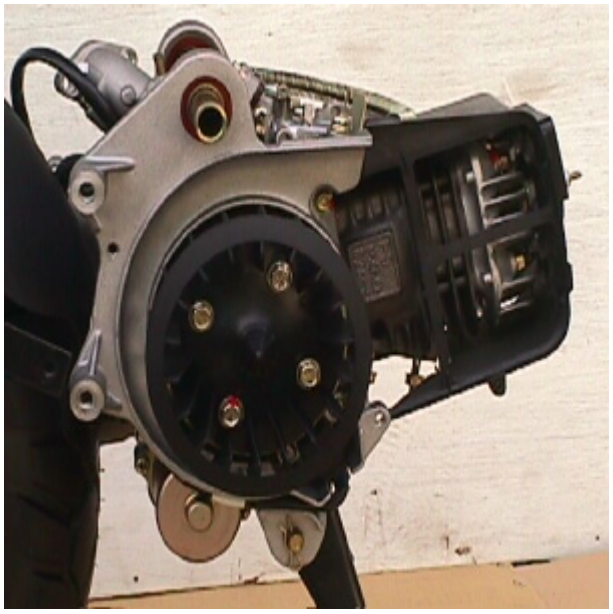
A. Dismantling AC generator

1.Remove fan cowl.

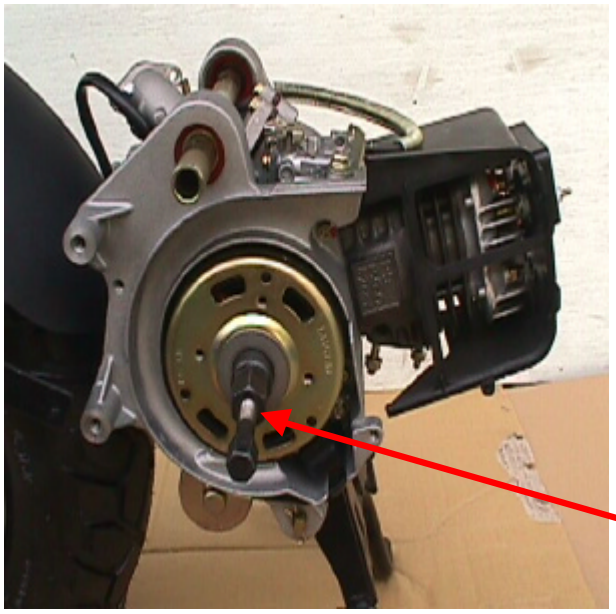
2.Remove the M6 screws(4)

3.Remove Screws of flywheel magneto

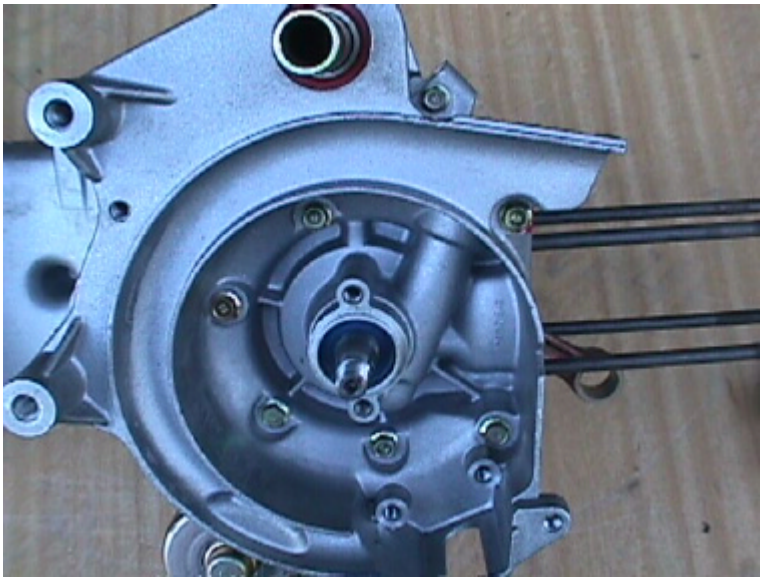
4.Remove the AC flywheel magneto by special tool.







5.Remove the flywheel.



6.Remove the electric plug of AC Flywheel magneto.
Take out the magneto.

B. Install AC generator

To install, please reverse the dismantling procedures.

Locking torgue:
M6: 1.0~1.2kg-m
M10: 3.2~4.0kg-m



(7)Final Transmission Mechanism

A. Trouble shooting

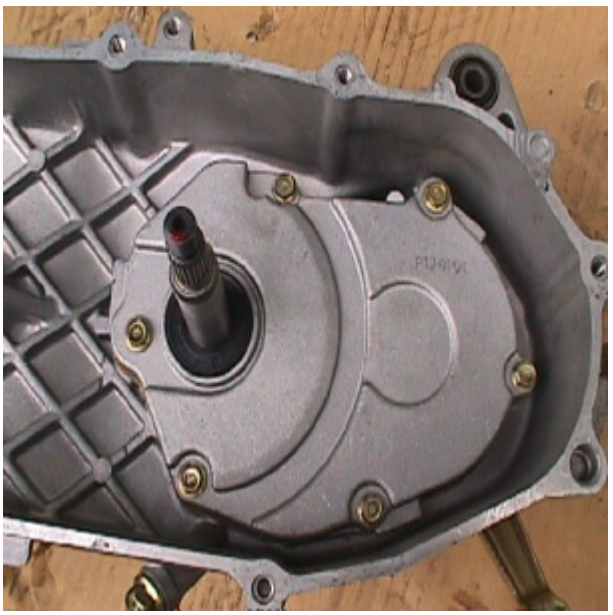
- ●Engine can be started, but vehicle doesn' t move.
  1.Gear worn-out or cracked.
  2.Gear burnt out.
- ●Noise occurs when running.
  1.Gear worn out, burnt or gear surface damaged.
  2.Bearing worn out or loosen.
- ●Oil leakage
  1.Too much oil.
  2.Seal worn out or damaged.

B. Disassemble the final transmission mechanism.

1.Remove the rear wheel.



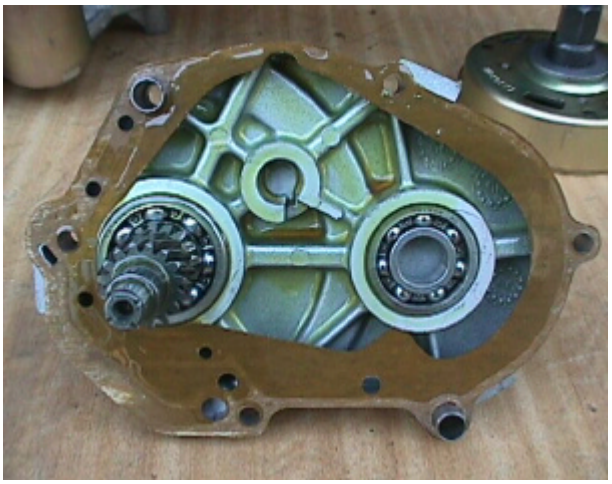
2.Drain off the oil in the gear box.

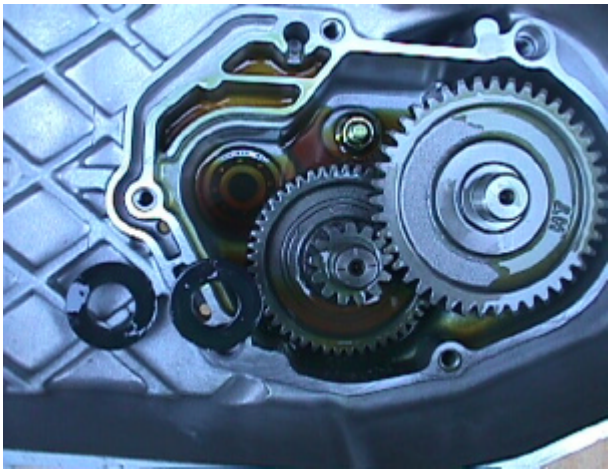


3.Remove the 6 bolt in gear box cover

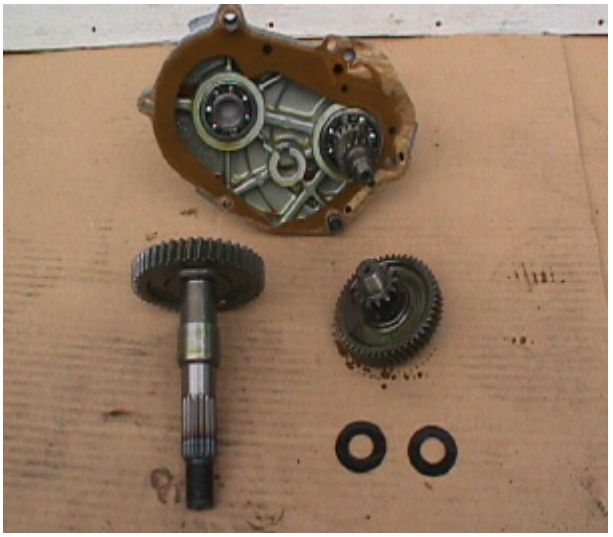
4.Take off the gear box.

5.Take out the final reduction gear and idle gear shaft.



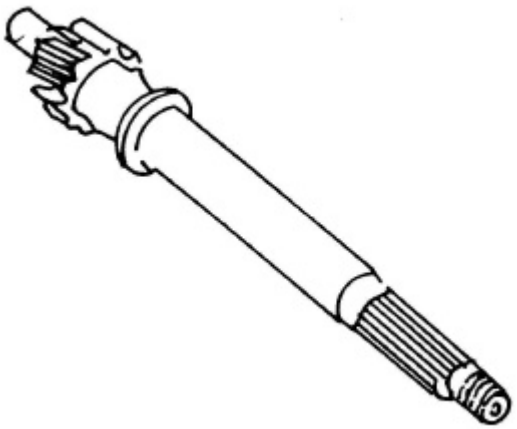


6.Clean up the gear box



C. Check the final transmission mechanism

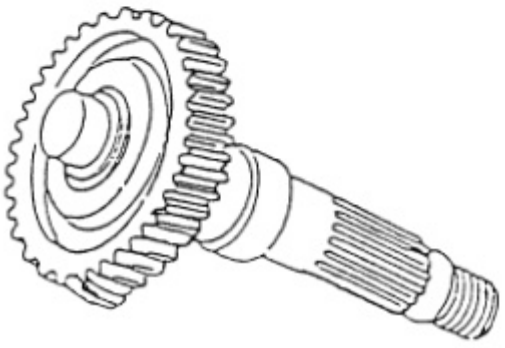
1.Check the wearing condition of the driving shaft and gears.



2.Check the wearing condition of the idle gear shaft and idle gears.



3.Check the wearing condition of the final reduction gear.



4.Check the wearing condition of the oil seal and bearing.

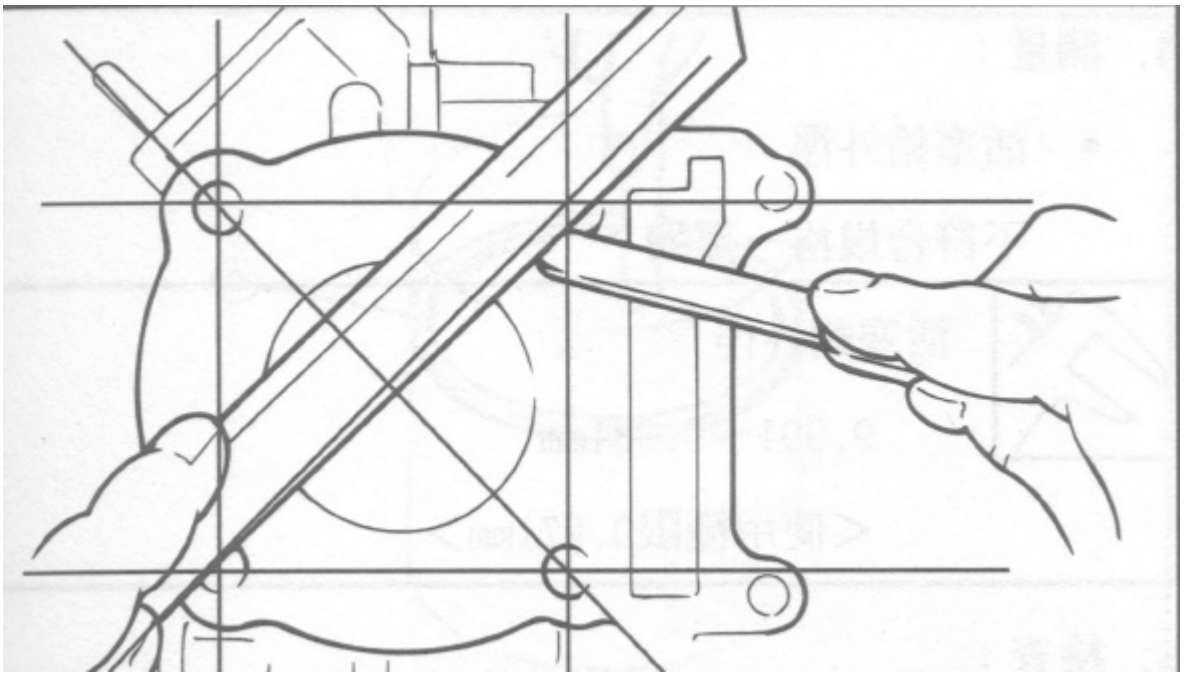
D. Assemble the final transmission mechanism:please follow the opposite procedures Of disassembling. After locking the drain bolt, refill 90c.c of gear oil, SAE 85W/140.

Locking torque:	M6: 1.0~1.2 kg-m
	M10: 3.5~4.0 kg-m
Drain bolt:	M8: 1.8 kg-m

E. Check for the flatness of cylinder head & cylinder.

Check the flatness of contact surface of cylinder head & cylinder.

Limit of use: If it exceeds 0.1mm Change a new one.



F. Combustion chamber cleaning

●Clean out the carbon piled up in combustion chamber.

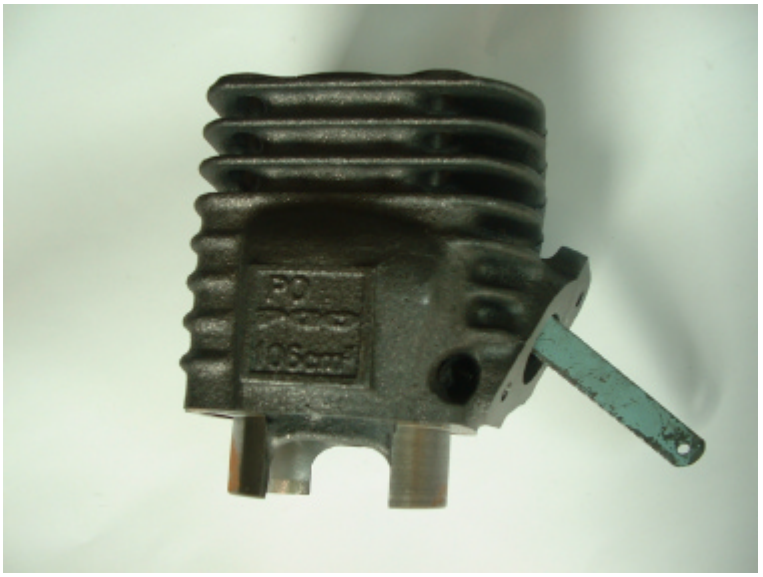
●Do not scratch the combustion chamber and contact surface of the cylinder during cleaning operation

G. Check cylinder and piston:

1.Check the wearing and damage condition on the contact surface of the cylinder and piston.

2.Clean out the carbon on the cylinder exhausting port.

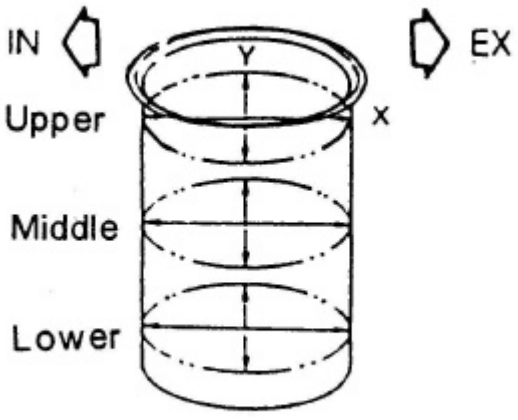
Be careful not to scratch the inner Surface of cylinder.

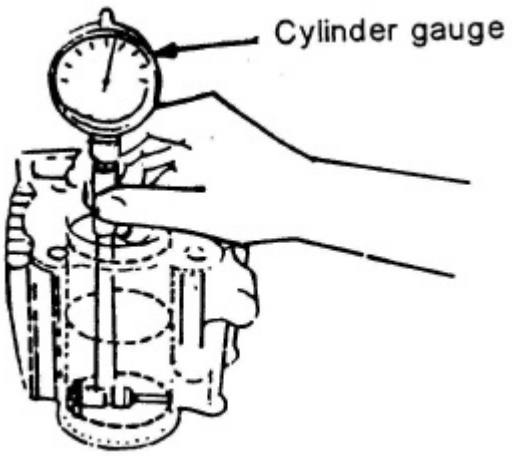


3.Cylinder bore measurement:

(1)Measure each point (A)(B)(C) orderly, and in X.Y. axis to find the smallest value.

(2)Limit of use: 50cc-change it when over 40.050mm

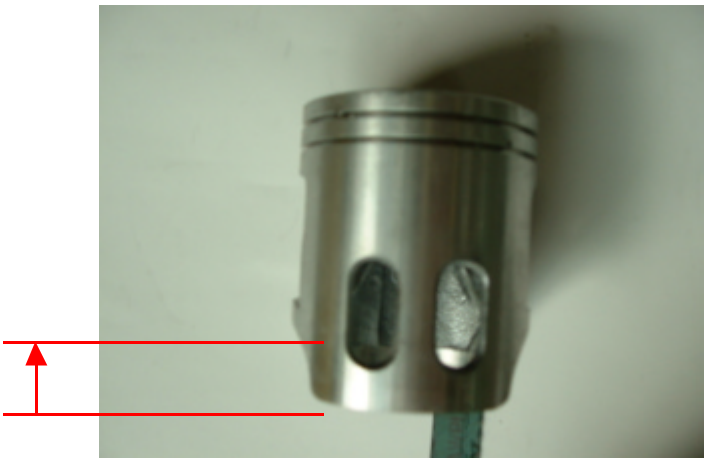




4.Piston outer diameter measurement:

(1)Measure at the skirt area where is 12 mm from the skirt lower end of skirt.

(2)Limit of use: 50cc-change if when below 39.895mm

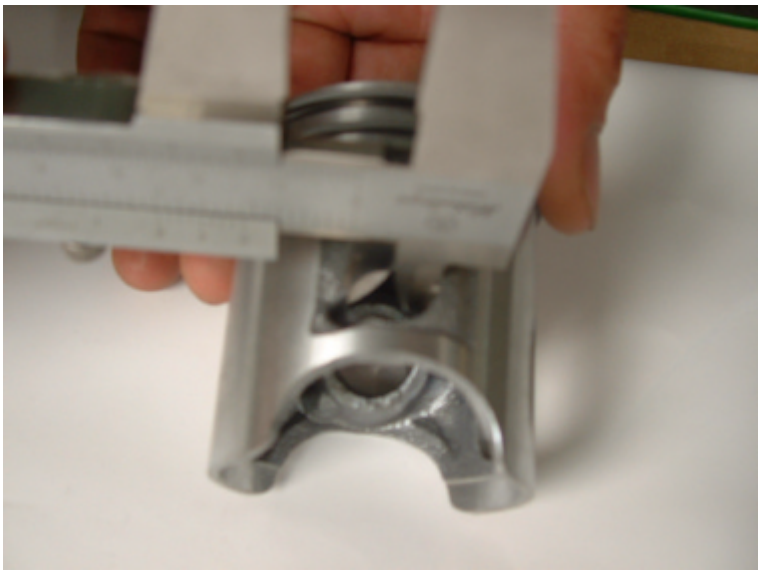


(3)Calculate the clearance between the cylinder and piston.

Limit of use: change it when over 0.100mm

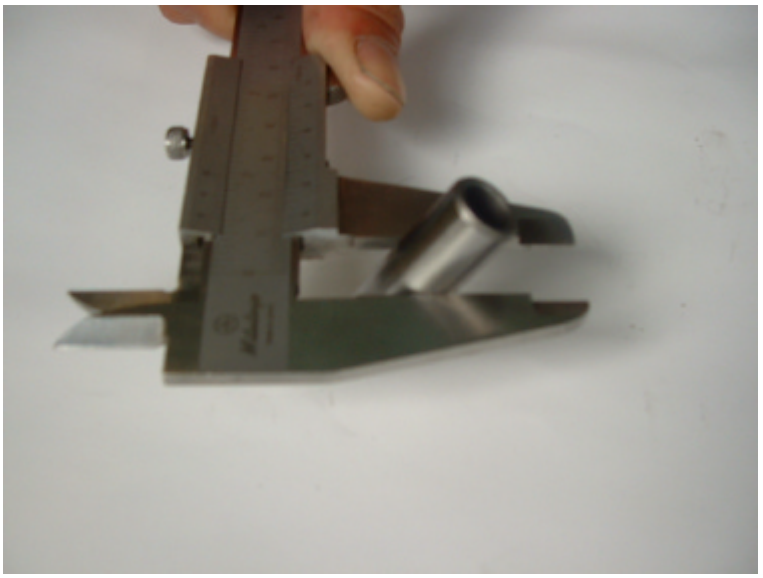
5.Inner diameter measurement of the piston pin hole

Limit of use: change it when over 14.032mm



6.Outer diameter measurement of the piston pin

limit of use: change it when under 9.970mm(50cc ENGINE)

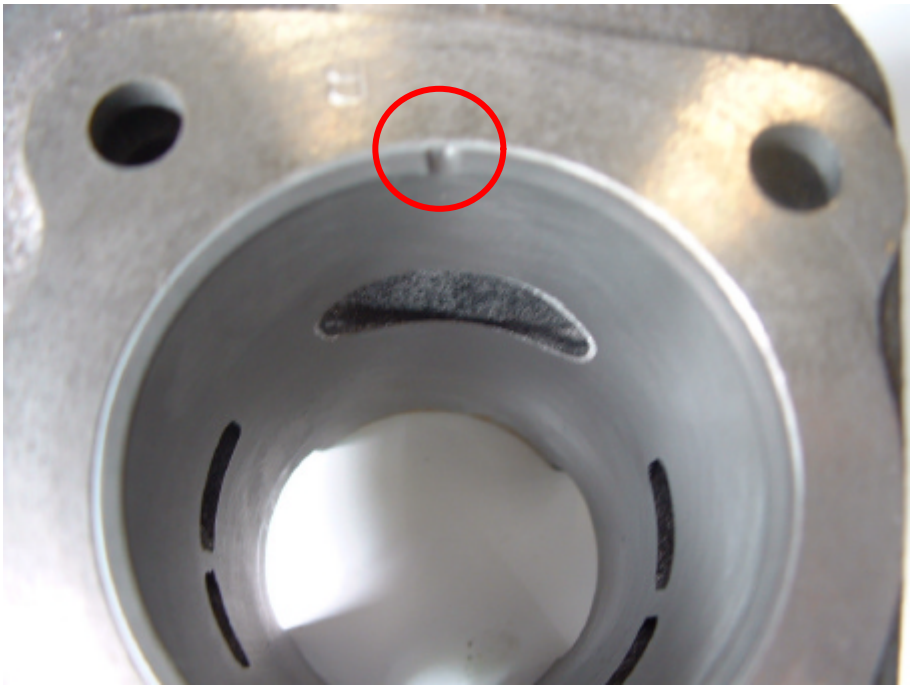


7.Check piston ring:

Measure piston ring gap:

Limit of use: change new ones when the first ring and second ring are over 0.4mm

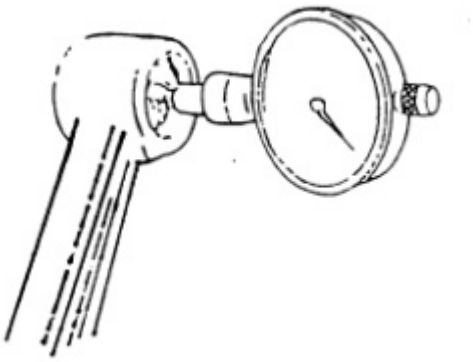
Push the piston ring into the cylinder By piston, the measure the gap



8.Check connecting rod small end

(1)lnstall piston pin, bearing onto the connecting rod small end, then check the looseness of the piston pin.

(2)Measure the inner diameter of the connecting rod small end.



Limit of use: replace a new one when over 14.025mm.(50cc ENGINE)

H. Installing cylinder and piston

1.Place the piston ring into the second ring ditch first, then install the piston ring into the first ditch.

2

a. Piston ring should be installed into piston ring ditch by even force

b. After assembling, be sure that the piston ring sliding surface is at the same height as the piston outer surface.

c. If the piston ring can not fit into the ditch, please clean up the carbon in the piston ring ditch or piston ring itself.

3.

a. Piston ring must be installed in the correct location.

b. After installing the piston ring, it should be able to rotate freely.

c. If it is necessary to change the new piston ring, it must change the whole set.

4.

a. The location of the piston ring gap and the lock pin must be in opposite side.

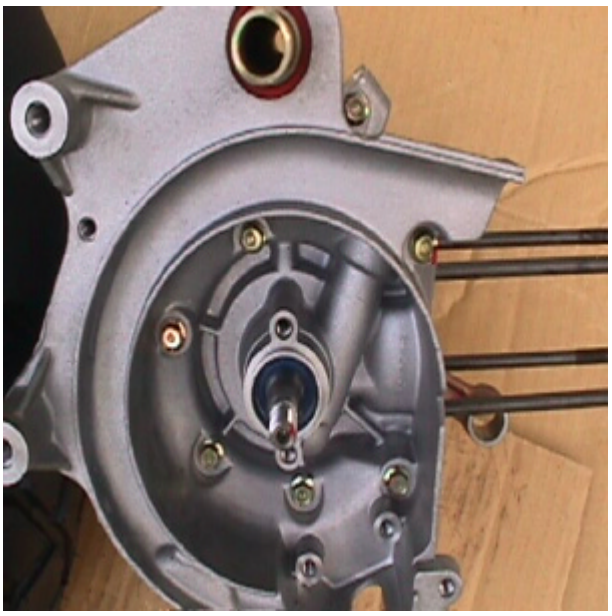
b. The mark"→" on the piston tip must be pointing to the exhaus ting port.

c. Lubricate the piston pin before installation.

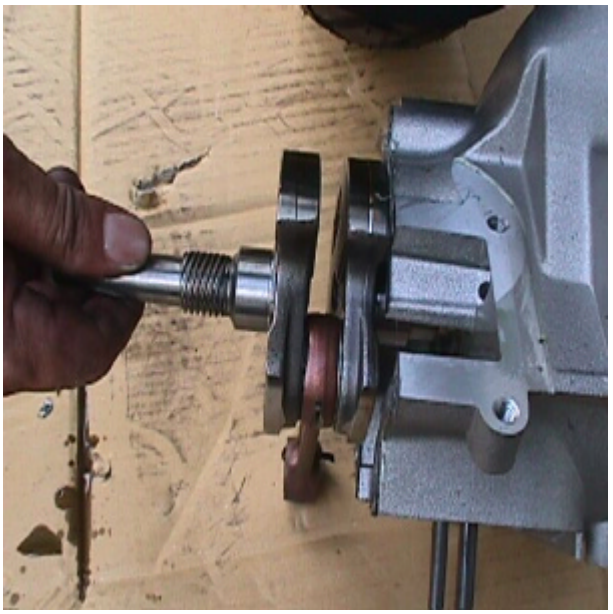
5.Please follow the opposite procedure of dismantling to install cylinder and cylinder head.

(8)Crankcase, Crankshaft:

A. Disassembling diagram







B. Troubleshooting.

Engine noise:

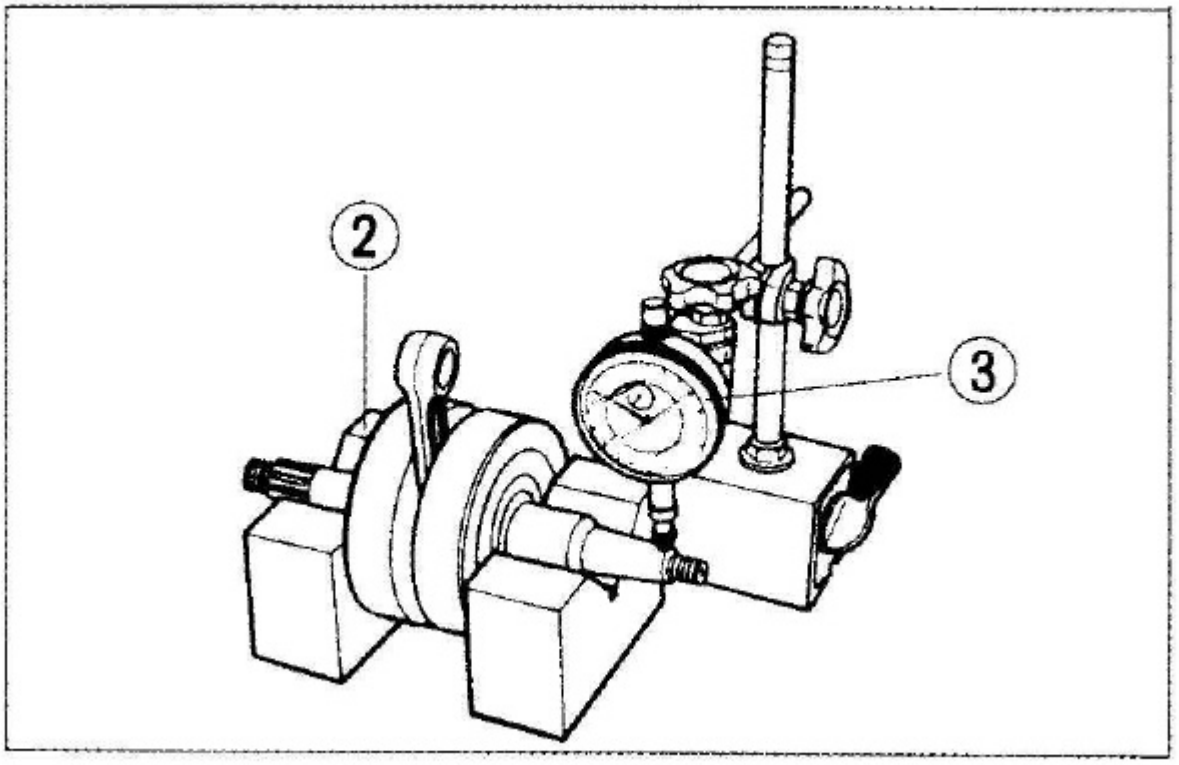
1.The bearing of final transmission mechanism is loose.

2.Crank pin bearing is loose.

3.The bearing of gear box is loose.

C. Data

Measuring Item	Standard value	Limit of use.(mm)
Clearance of connecting rod big end (Parallel direction to rod)	0.20-0.50	0.71(50cc)
Clearance of connecting rod big end (Perpendicular direction to rod)	-	0.04
Swingness of the crank shaft neck	0.03	0.10



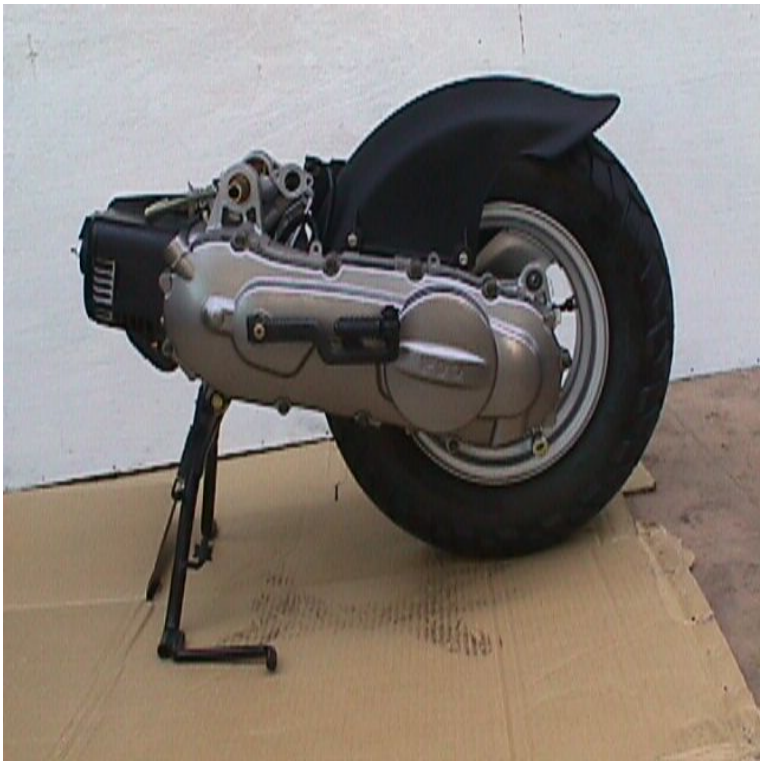
D. Dismantle the crankcase and crankshaft please follow the following procedures:

1.Remove the engine.

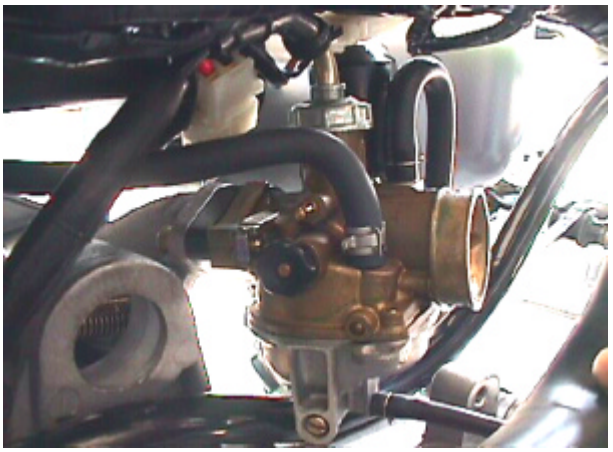


2.Remove the left crank case, the driving pulley (driving plate) clutch and belt.

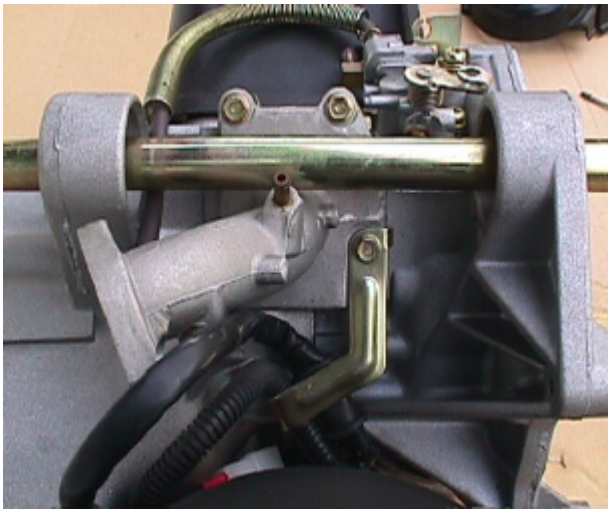
3.Remove the air cleaner.



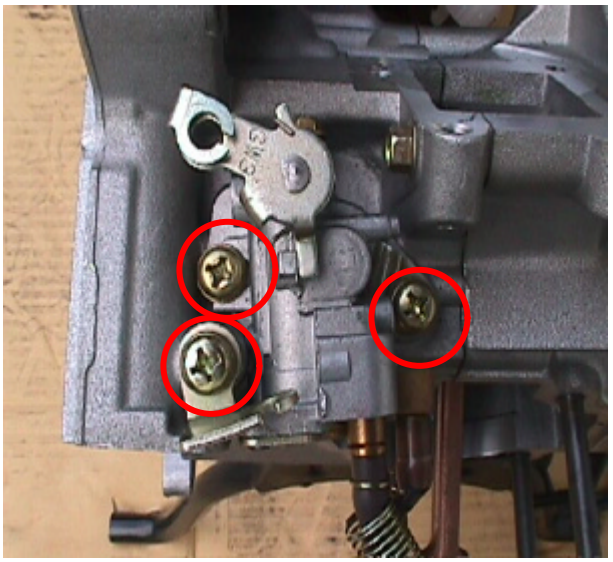
4.Remove the carburetor.



5.Remove the intake manifold and reed valve.



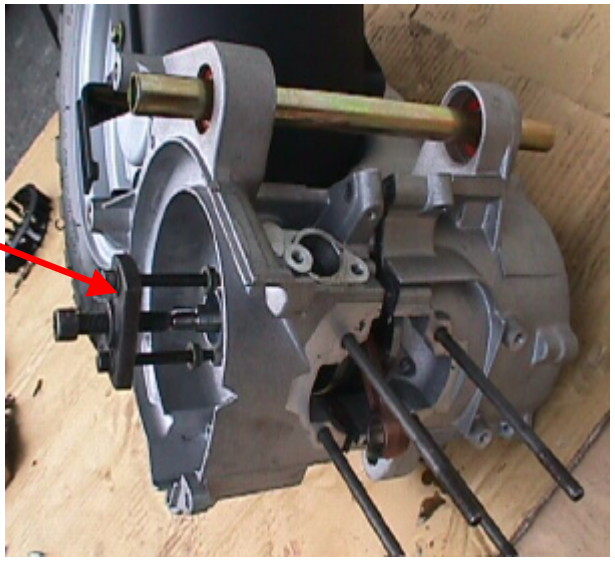
6.Remove the oil pump, fan cowl and fan itself.



7.Remove the AC flywheel magneto.



8.Dismantle the right and left crankcase.
There are all together 7 bolts.



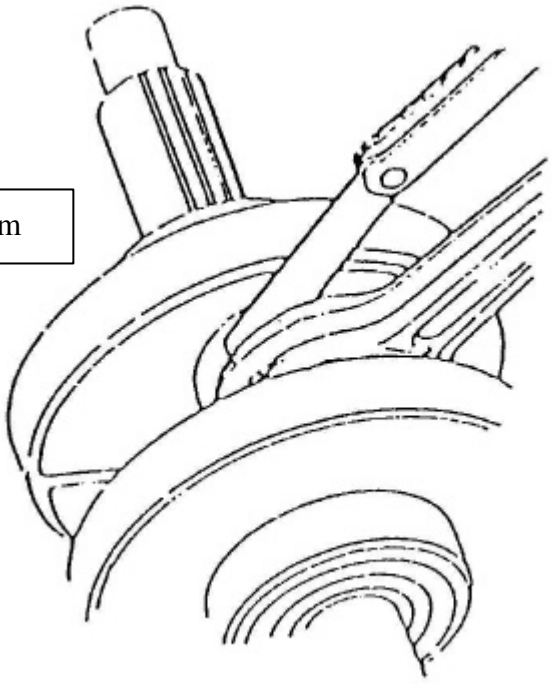
9.Remove center stand, left and right crankcase and take out the crankshaft.





E. Check the crankshaft:

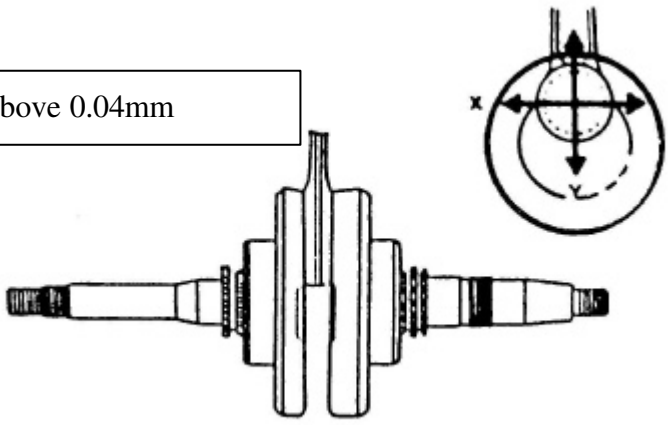
1.measure the clearance between crank shaft and co-rod big end.(Parallel direction to rod)



Limit of use: Replace a new when above 0.71mm

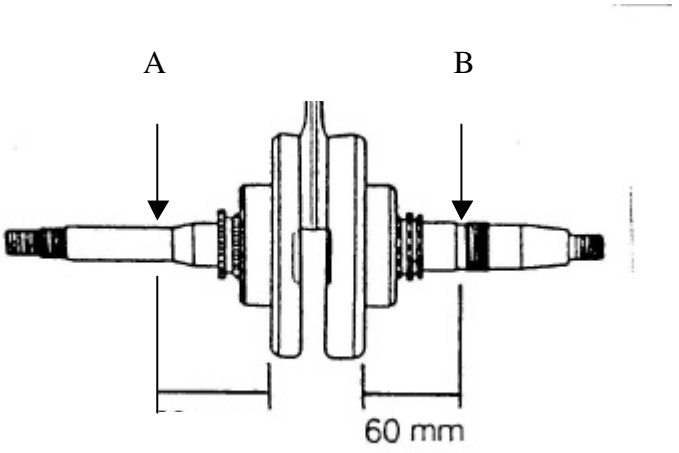
2.check the looseness on X.Y. axis of the connecting rod big end(Perpendicular directions to rod)

Limit of use: Replace a new one when above 0.04mm

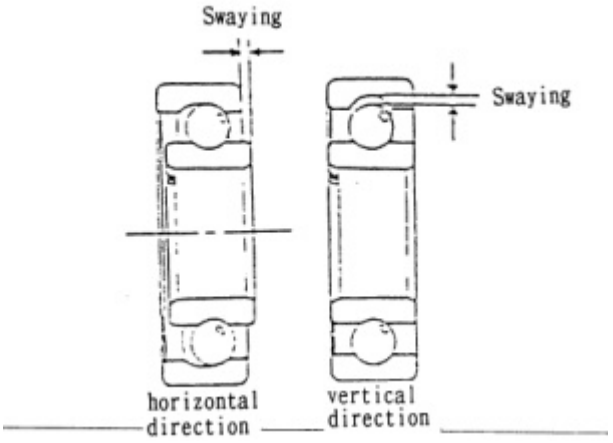


3.measure the swingness of crank shaft neck.

Limit of use	
A	B
Change it when Above 0.1mm	Change it when Above 0.1mm



4.check the slackness of crankshaft bearing,
if it is slack, change a new one.



F. Assemble the crankcase.

1.To assemble the crankcase, please reverse the procedures of disaseembling.

2.The locking torque value for bolts and nuts are all described in the previous chapters Please refer.

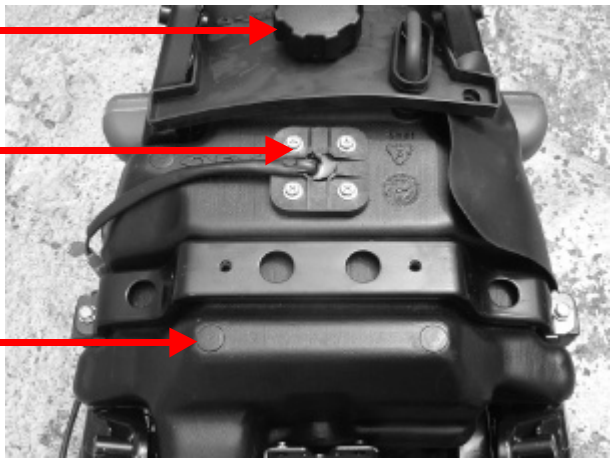
(9)Carburetor, Reed Valve and Auto cock

A. Fuel system diagram

Fuel Cap

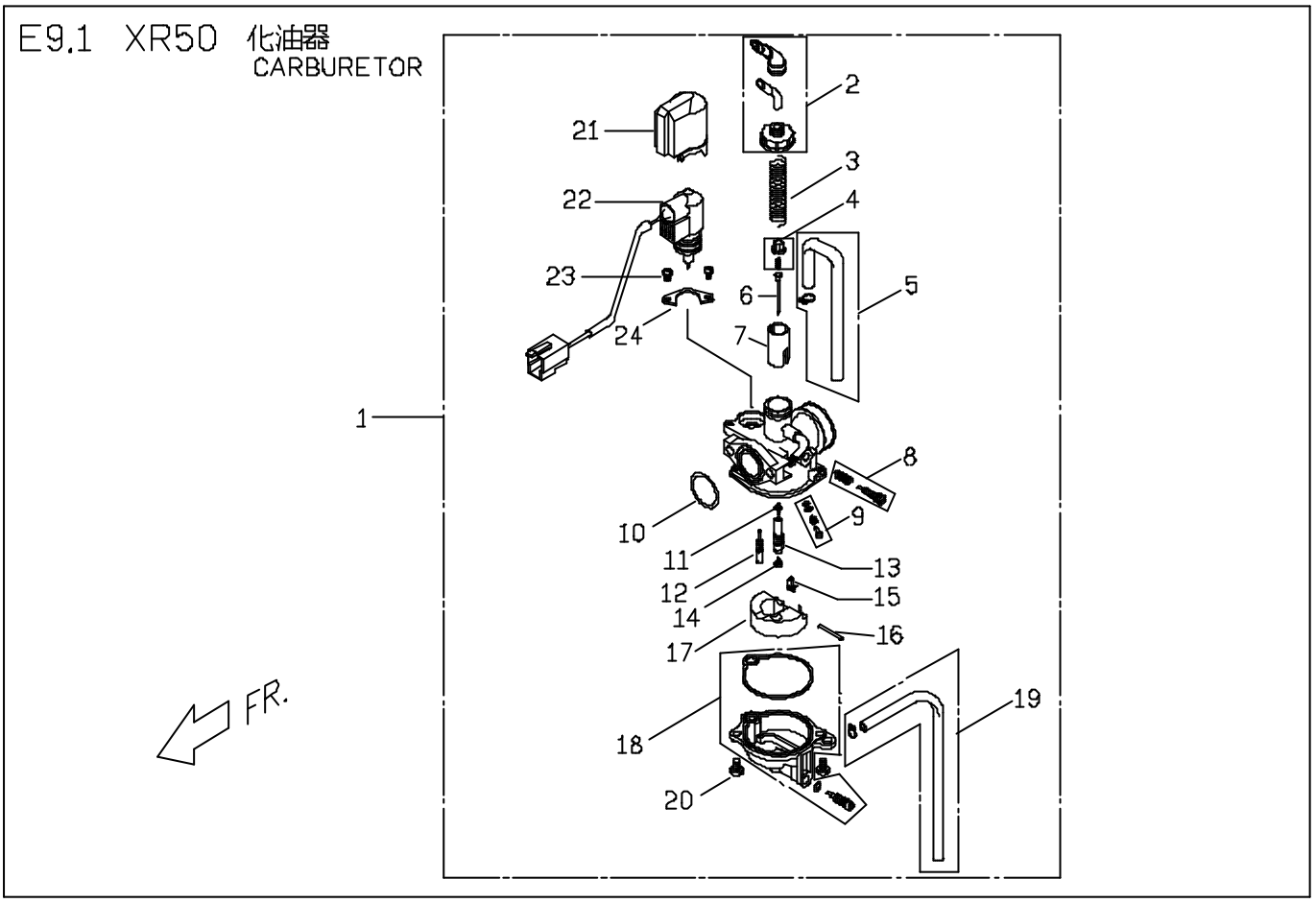
Fuel Gauge

Fuel Tank





B: Carburetor dismantling diagram



C. Troubleshooting:

a. Engine can not be started.

1.No fuel in the fuel tank.

2.Fuel pipe is blocked.

3.There is too much fuel in the cylinder.

4.Air cleaner is blocked.

b. Engine idling(RPM)unsteady, running not smoothly

1.Improper adjustment of the carburetor idling.

2.Ignition disorder.

3.Compression pressure is too low.

4.Air mixture is too thick.

5.Air mixture is too lean.

6.Air cleaner is blocked.

7.Air injection is not in good function.

8.Fuel is dirty.

c. Air mixture is too lean.

1.Carburetor main jet is blocked

2.The ventilation hole of the fuel tank cover is blocked.

3.Fuel filter is blocked.

4.Fuel pipe bended, squeezed or blocked.

5.Float valve is abnormal.

6.Fuel level is too low.

7.Air pipe is blocked.

d. Air mixture is too thick

1.Float valve is abnormal.

2.Fuel level is too high.

3.Air jet is blocked.

D. Dismantling carburetor

1.Remove the luggage box.

2.Loose the hose clamp between the carburetor and the air cleaner.
Then remove the air cleaner.

3.Unscrew the fuel draining screw of the carburetor. Drain off the fuel inside the carburetor.

4.Remove the fuel pipe and the vacuum pipe on the carburetor.

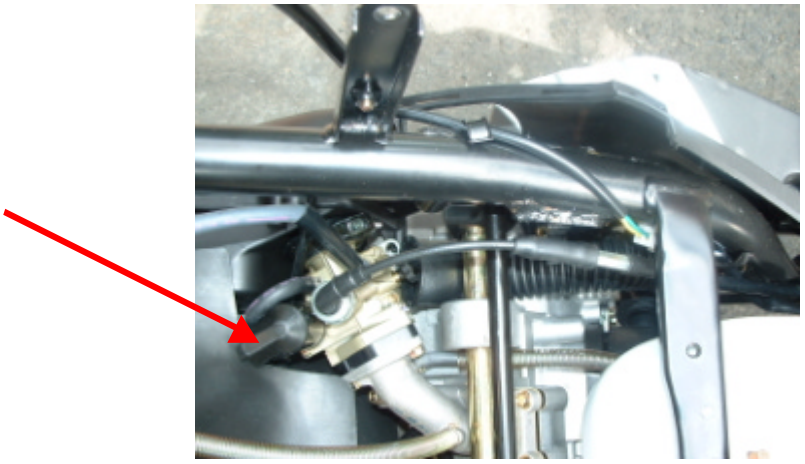
5.Remove the oil pile on the carburetor.

6.Remove the bolts on the intake manifold and carburetor.



E. Dismantling float, nozzle

Note:
The auto choke has been properly adjusted already. Please do not adjust it further.
When there is blockage in the carburetor, please clean it by air compressor.



F. Reed valve

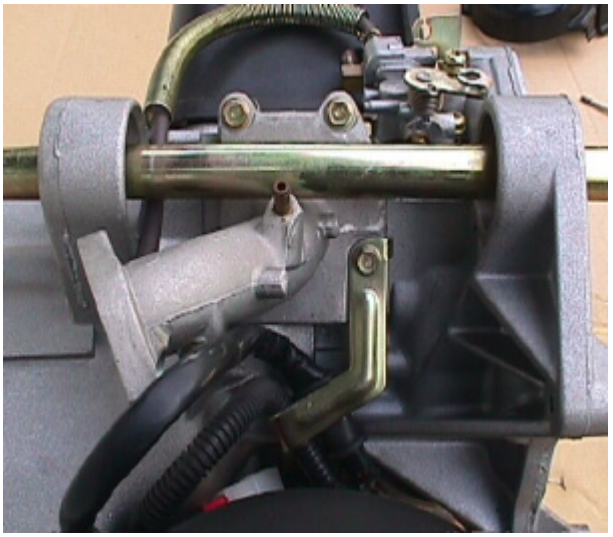
1.Dismantling reed valve.

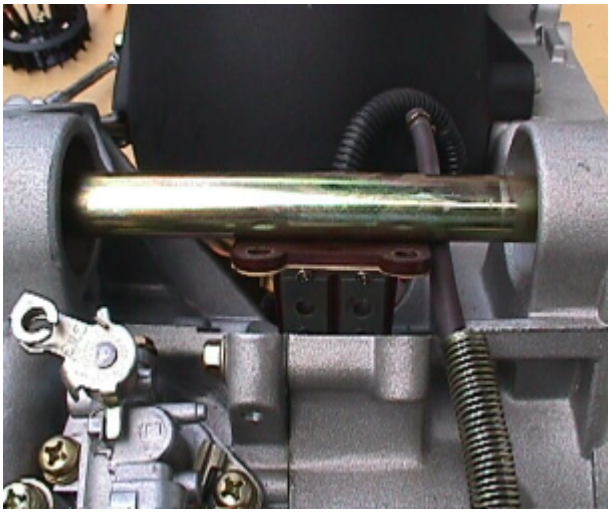
(1)Take off the luggage box

(2)Remove the air cleaner

(3)Remove the carburetor.

(4)Unscrew the locking screw of the intake manifold.





(5)Remove the intake manifold.

(6)Remove the reed valve.

2.checking for the reed valve.

▪chang a new one when the reed valve is worn out or distorted.

▪change a new one too when the base of the reed valve is cracked, injured or distorted.

G. Check the auto cock

1.When the engine stop, remove the fuel pipe from carburetor and check if there is fuel flow Out or not.

It means auto lock functions well if the residue fuel(for the amount of 5-10cc)flows out From the auto cock and fuel pipe. However, if it continues to flow out, it means that the Vacuum pipe is blocked. please clean it.

2.Remove the vacuum pipe from the carburetor and suck it to produce a vacuum to have the Fuel flow out from the fuel pipe. The fuel will stop flowing out if the vacuum disappear.

If the fuel does not flow out by the above operation, please check the followings:

(a) Clean out blockage in the vacuum pipe.

(b)Blow air into the inlet pipe of the auto cock.

3.Note:

Please remember to use a bowl to catch the flow-out at the end of the fuel pipe.

Keep away from fire or even spark during operation.

(11)Steering stem, front wheel, frt brake comp and front fork.

A. Troubleshooting
B. Data
C. Steering handlebar
E. Front wheel
F. Front brake
G. Front fork

A.Troubleshooting

1.steering handlebar is abnormal, too tight.

a. steering mechanism; washer of conical bush locked too tightly.

b. steering mechanism; steel ball is cracked.

c. steering mechanism; steel ball base and washer of conical base is damaged.

d. wheel pressure is too low.

2.steering handlebar is aslant.

a.left and right damper is not even.

b.Front fork is crooked.

c.The axle of front fork is crooked, wheel is aslant.

3.front wheel swings.

a.wheel rim is distorted.

b.bearing of front axle too free.

c.wheel rib is distorted.

d.Wheel is not good.

e.Front wheel axle locked improperly.

4.front damper is too soft, spring fatigue.

5.noise in front damper.

a.noise comes from damper box.

b.locking screw of damper is slackness.

B.Data

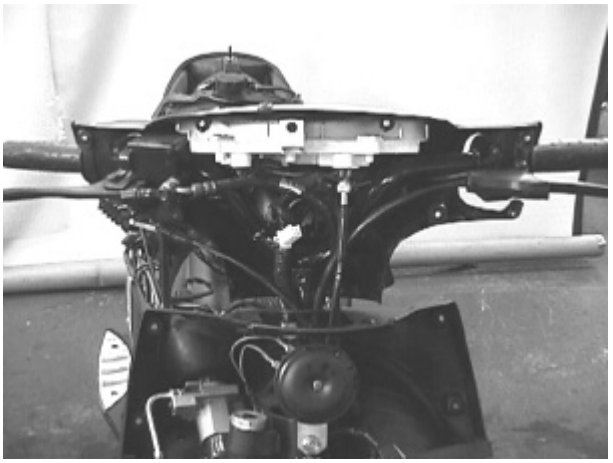
Item	Standard value (mm)	Limit of use (mm)
Lining of frt brake	4.0	2.0
Disk of frt brake	3.6	3.1
Swingness of frt/rr wheel	-	2.0

C.Changing the speedometer cable

1.Remove the fixed screws of the front cover.
2.Remove the nut of speedometer cable.
3.Remove the front handle cover.



4.Remove the fixed screws of speedometer cable on the right of front wheel.
5.Draw out the damage speedometer cable.
6.Assemble the new cable follows the opposite procedure of dismantling.
NOTE:Put the grease onto the Inner cable before Assembling.



(D)Steering handlebar

1.Remove the LH/RH back mirrors.

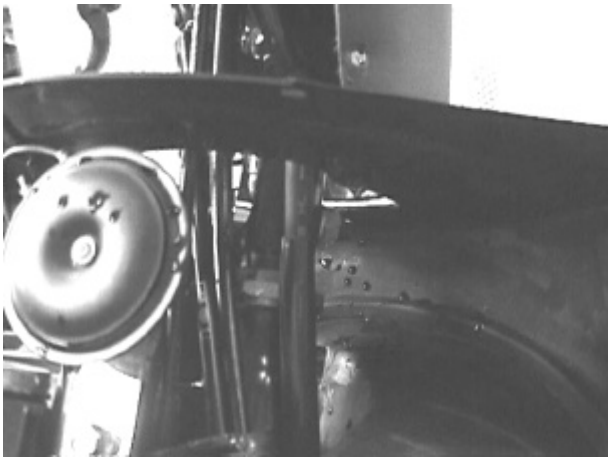
2.Remove the upper handle cover.

3.Remove the nuts on front fork and handlebar.

4.Take off the fixing bolt.

5.Remove the nut and bolt of the front fork fixed on The handlebar.

6.Take off the handle bar.



7.When assembling, please follow the opposite procedures.

Locking Torque:
M6 :1.0-1.2kg-m
M10 :3.0-4.0kg-m

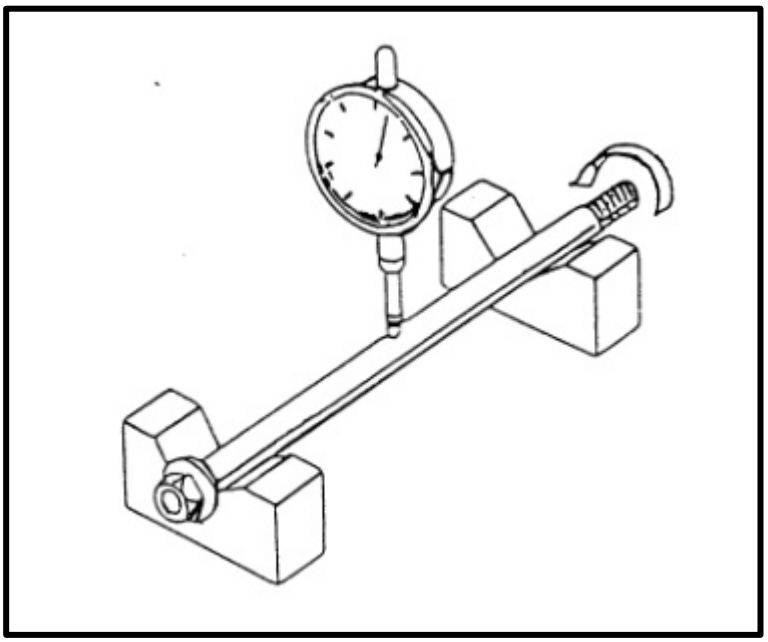
8.Before assembling, please add grease on each cable.

(E)Front wheel

1.Remove the locking nut of the front wheel on the right side.
2.Draw out the axle of front wheel, remove the ring and take off the gear sets of speedometer.
3.Remove the front wheel assy.
4.Assemble the front wheel follows the opposite procedure of dismantling.
Locking Torque:
M10: 3.0-4.0kg-m



Note:
1.Put the lock block of speedometer gear assy upon the extrusion of the front fork.
2.Put the grease onto the grease sets of speedometer before assembling.
5.Checking the front wheel axle
a. Check the bending degree of the front axle.
b. Take note of the bending degree on the middle of axle.
c. Limit of use: Change it when above 0.2mm.

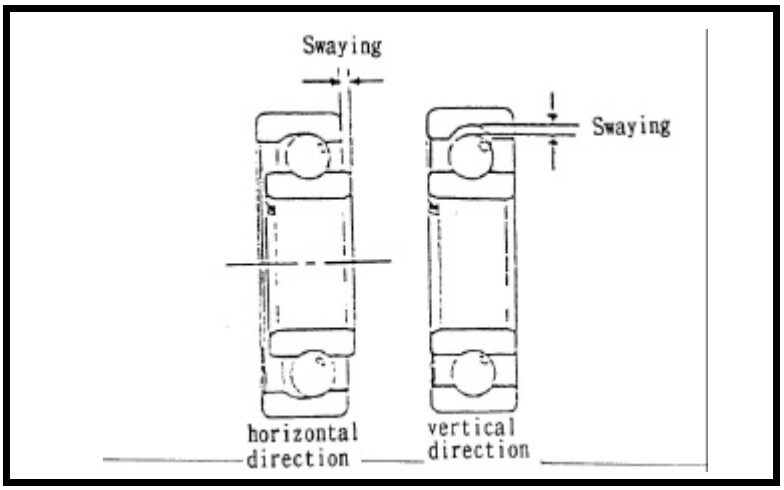


6.Front wheel bearing checking

Turn the tire. If the bearing is

Loosen or any occurrence for noise,

Please change a new one.



7.Front wheel rim checking

(1)Check the swing of the front wheel rim.

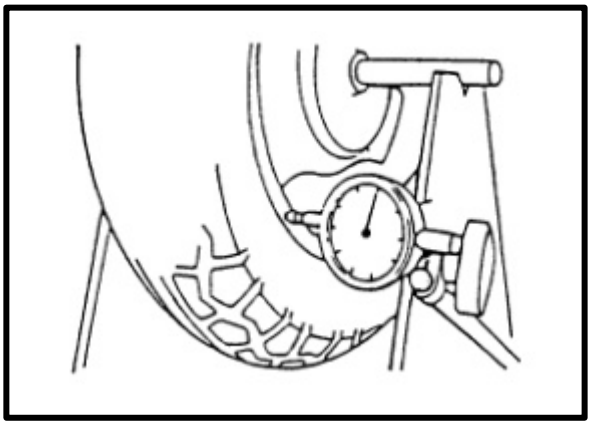
(2)Limit of use:

●Horizontal direction:

Change a new one when above 2.0mm.

●Vertical direction:

Change a new one when above2.0mm.



(F)Front brake

1. Disassembling and assembling of the front brake comp.

a.Remove two bolts fixed on the front brake comp and the front fork.

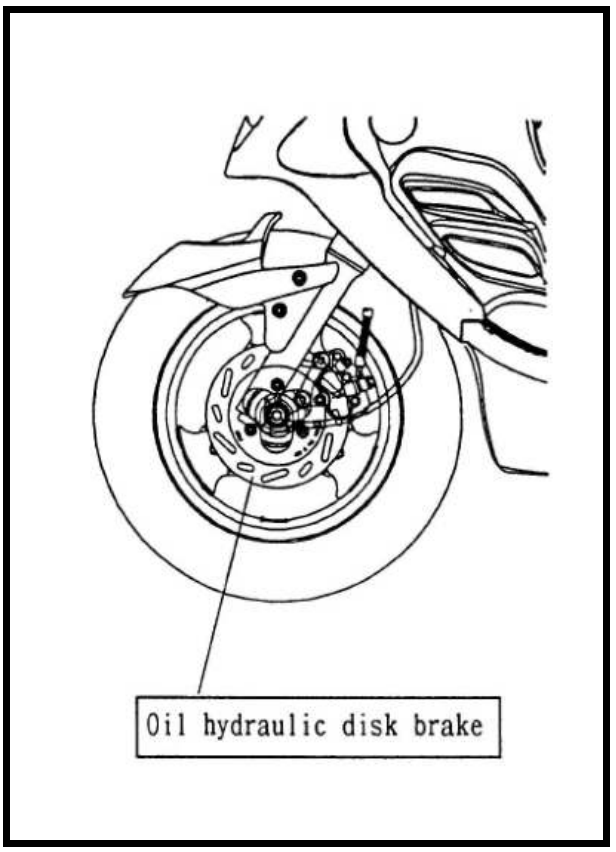
b.Remove the front brake comp.

c.Assemble the front brake comp.

Follows the opposite procedure of dismantling.

Locking Torque:

M8: 2.0~3.0kg-m



2.Air releasing of the front brake comp

The procedure of air releasing

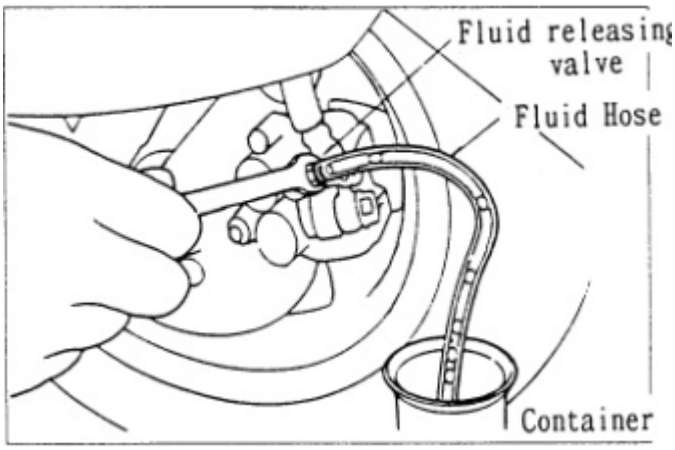
a.Fill the enough brake oil to the container

b.Do not let the brake oil overflow from the master cylinder or container when assemble the master cylinder cover.

c.Put the spanner upon the drain screw.

d. Lock and unlock the screw several times to Release the bubbles.

e. Operate slowly the brake lever several times.



f. Clamp the brake lever to the end.

g. Loose the drain screw, then open the lever completely.

h. Locking the drain screw and then loose it when the lever is opened completely.

i. Repeat above procedure until all the air in the brake system has been released Completely.

Locking torque of leaking screw: 0.6 kg-m

3.Front fork checking:

If it is bent or cracked, please replace with a new one.

4.Front shock absorber checking

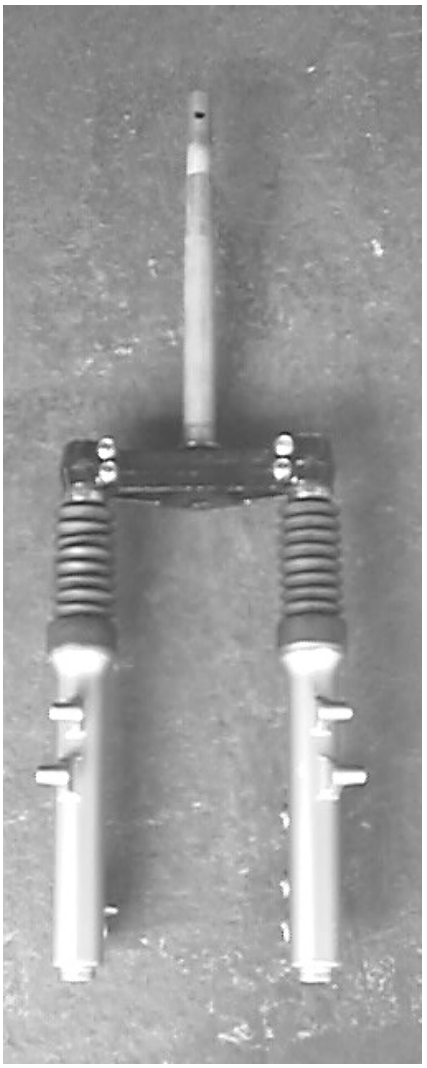
Check is there any unusual damage or worn-out condition, and whether the guide rod of the Front fork is crooked or not.

Front fork oil type: SAE 10W20

Capacity (each side): 70 CC

NOTE:

If the guide rod is crooked, it should be replaced by a new one or repaired.



5.Disassembling and assembling the front brake-disk.

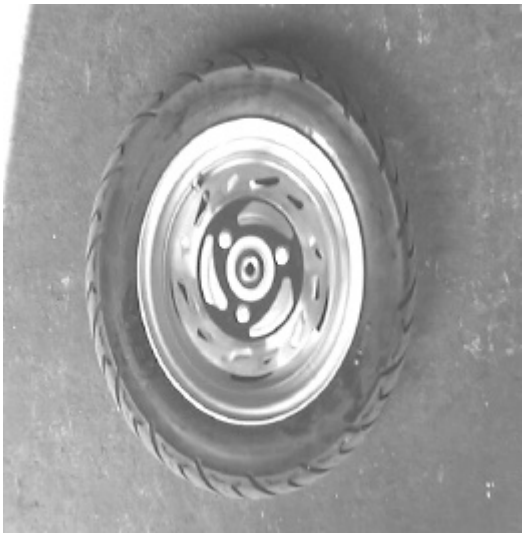
a. Remove the front wheel.

b. Remove three nuts on the disk.

c. Remove the disk.

d. Assemble the disk follows the disassembling procedure.

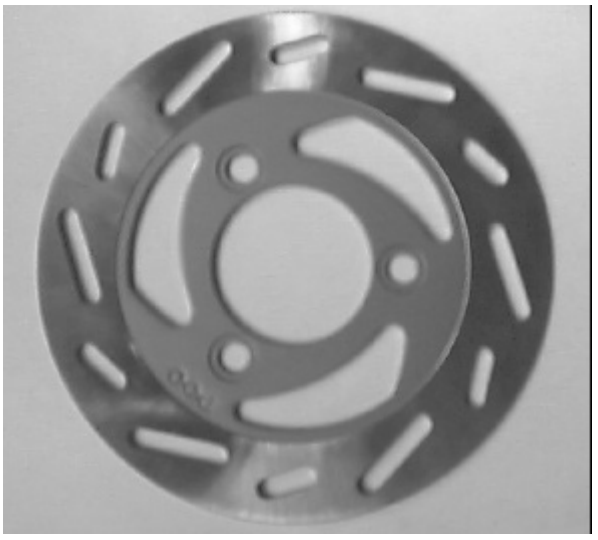
Locking torque M8: 2.0~3.0kgm



6.Checking the front brake-disk.

Standard thickness of disk: 3.6mm

Limit of usage: change it when below 3.1mm

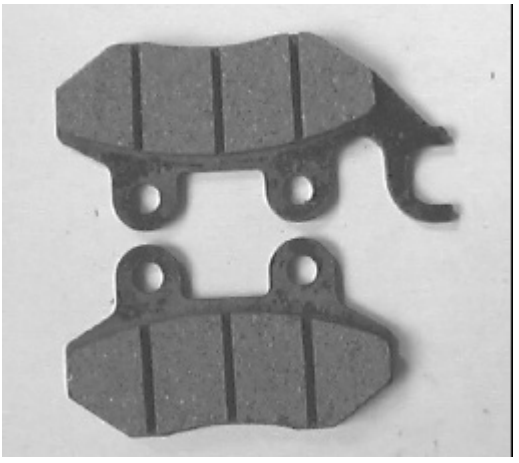


7.Checking the front brake-lining.

a.standard thickness: 4.0mm.

limit of use: As the thickness is below 2.0mm, change it.

Note: No grease on the lining.



(12)Rear wheel, rear brake, rear damper:

A. Troubleshooting.
B.Data.
C.Dismantling the rear wheel.
D.Checking the rear wheel.
E.Rear brake.
F.Rear damper.

A.Troubleshooting.

1.Rear wheel swings.

a.wheel rim is distorted.

b.wheel is abnormal.

c.improperly assemble the wheel axle.

2.Rear damper is too soft

a.rear damper spring fatigue.

3.Bad braking

a.the adjustment of brake is not good.

b.the brake lining is dirty.

c.the brake lining is worn out.

d.the cam of brake lining is worn out

e.the brake cam lever is worn out.

f.the brake hub is worn out.

g.the assembling of brake lever gear trough is not good.

B.Data

Item	Standard value(mm)	Limit of use(mm)
The swings of rear wheel	**-**	**2.0**
Brake hub inner diameter	**110**	**111.0**
Thickness of brake lining	**4.0**	**2.0**

C.Dismantling and assembling

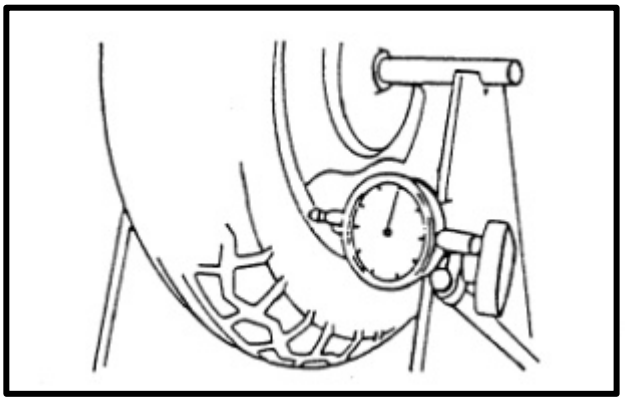
The rear wheel.



1.Remove the fixed screws and bolts of the exhaust pipe.
2.Remove the fixed screws of the rear wheel drum.
3.Remove the bolts.
4.Remove the rear wheel.
5.To assemble the rear wheel, please reverse the dismantling procedures.

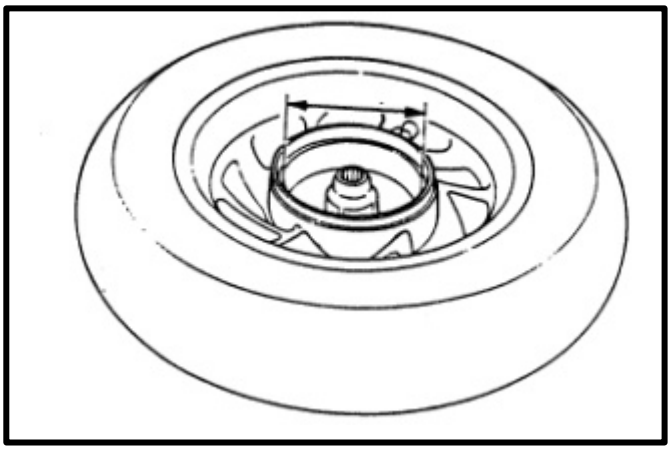
Locking torque: M6: 0.7-1.1kg.m
M14: 8.0-10.0kg.m

D.Checking the rear wheel.



●check the swings of rear wheel.
●radial direction:
change it as it is above 2.0mm
●horizontal direction:
change it as it is above 2.0mm.

E.Rear brake:

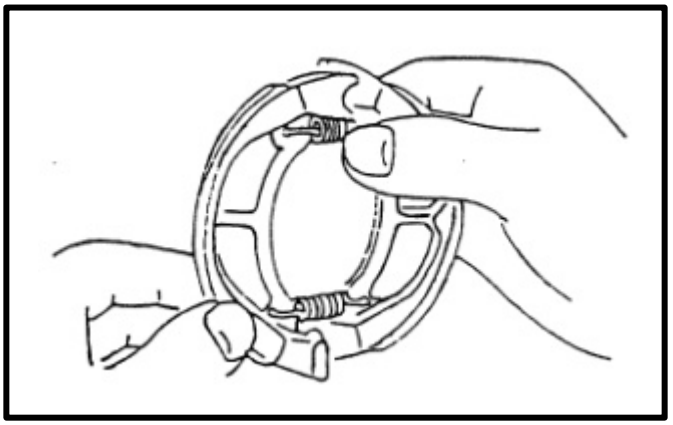


1.Rear brake disassembling diagram.

(1)Checking rear brake hub:

a.measure the inner diameter of rear brake hub.

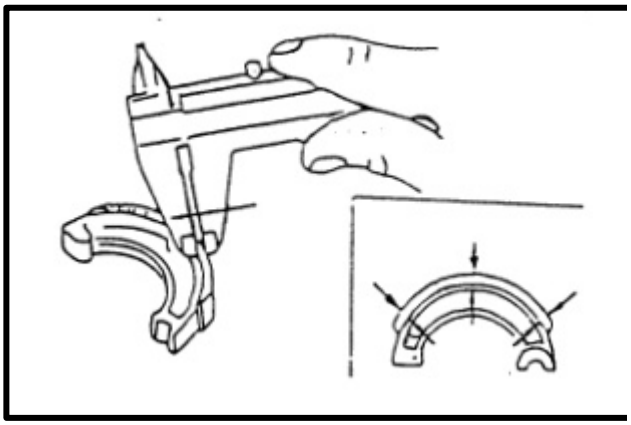
b.limit of use:change it as the diameter is above 111.0mm



(2)Checking brake lining:

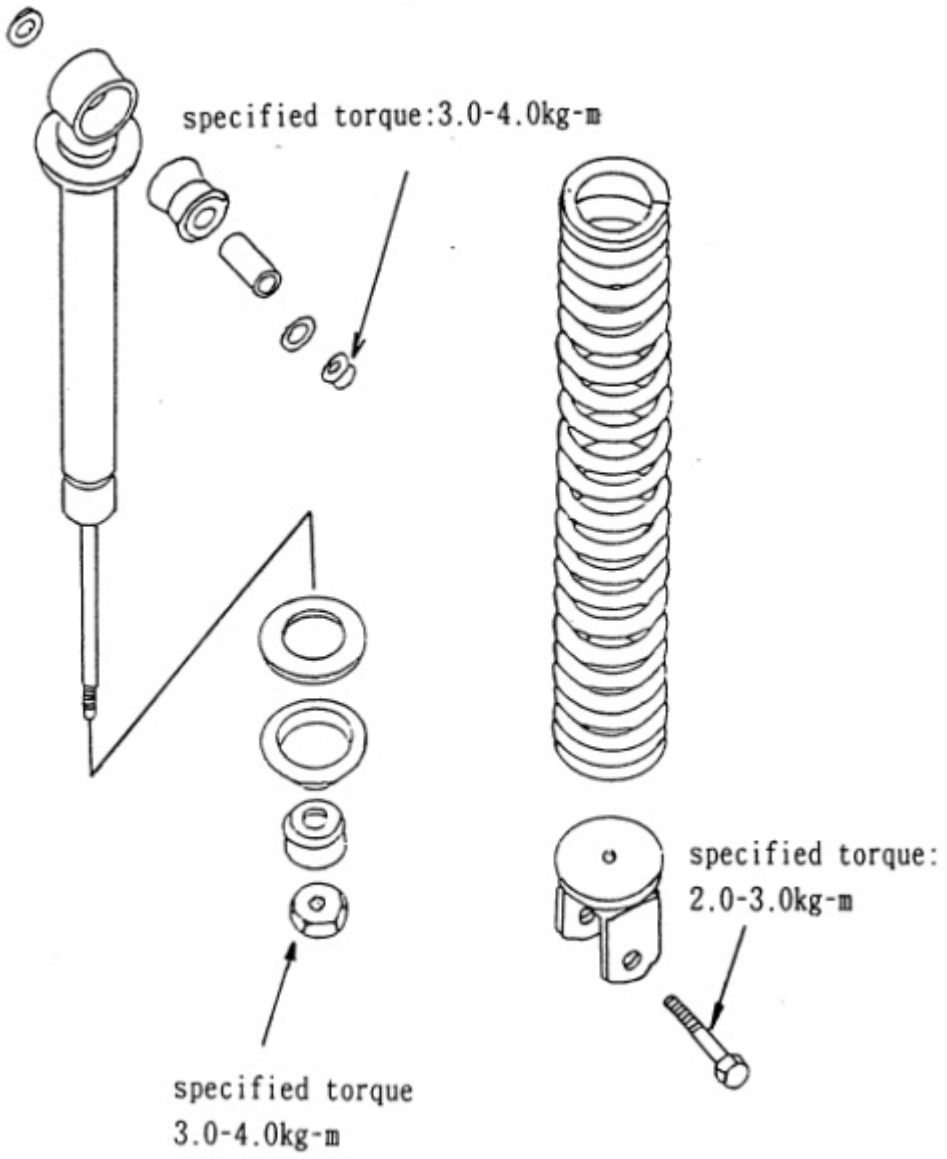
a. measure the thickness of rear brake lining.

b.Limit of use: As the thickness is less than 2mm, change it.



F.Rear damper

1.Rear damper disassembling diagram:



(13)Fuel tank

A. Troubleshooting:

1.Engine can' t start:

a. No fuel in fuel tank.

b. Fuel pipe is blocked.

c.. Auto cock and fuel filter is blocked.

d. The membrane of fuel cock over extended.

2.The mixture is too lean.

a. Ventilation hole is blocked.

b. Fuel pipe is crooked, squeezed, or blocked.

c. Auto cock and fuel filter is dirty.



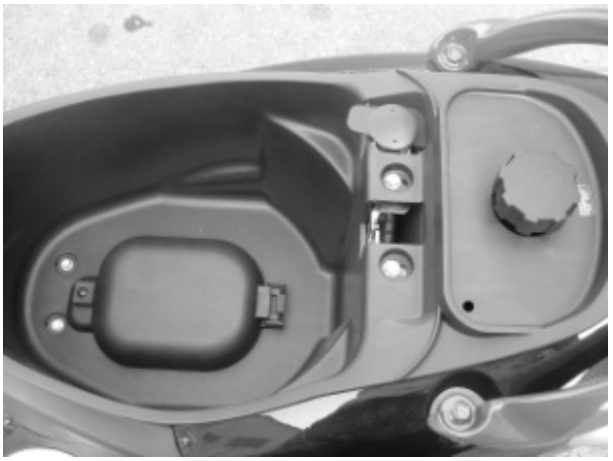
B. Dismantling and assembling Fuel Tank

1.Remove the luggage box.

2.Open the rear cover of the fuel Tank and take it off.

3.Remove the left and right rear handle bars.

4.Remove the left and right side covers.

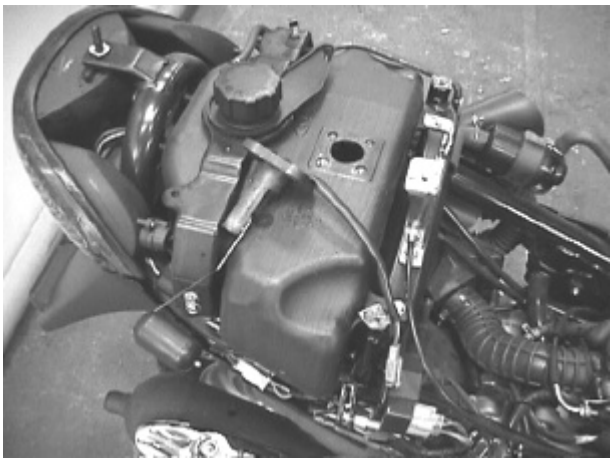




5.Remove the fuel pipe.
6.Remove the connecting terminal of the fuel gauge.



7.Remove the fuel gauge.
8.Remove the fixing blot of the fuel tank.
9.Take off the fuel tank.
10.When re-assembling, please follow the opposite procedure of disassembling.
Locking torque: M6: 1.0-1.2kgf-m



5.Electric equipment:

(1)Troubleshooting
(2)Battery
    1.check specific gravity of eletrolyte
    2.recharge
(3)Recharge system
    1.the wiring diagram of recharge system
    2.check A.C. flywheel magneto
    3.check regulator/ rectifier.
(4)Ignition system
    1.the wiring of ignition
    2.check spark plug
    3.check H.T. Cable and H.T. coil
    4.check C.D.I. set
(5)Starting system
    1.the wiring of starting
    2.checking the starter
    3.dismantling the starting motor
    4.checking the starting motor
(6)Starting clutch
(7)Handle bar switch

(1)Troubleshooting:

A.Recharge system:

●No power:

1.battery over charge

①No electrolyte in battery.

②Battery becomes white.

③Short circuit in battery.

④Regulator malfunction

2.the battery wires disconnected.

3.fuse is broken.

4.Ignition lock is abnormal.

●Voltage is too low:

1.Battery recharges insufficiently.

2.The connecting is abnormal.

3.Recharge system is abnormal.

4.Regulator malfunction.

B.Ignition system:

●The sparking of spark plug is abnormal:

1.Spark plug is abnormal.

2.Wire connects improperly, broken or short Circuit.

①between A.C. flywheel magneto and CDI sets.

②between CDI sets and H.T. coil.

③between CDI sets and main switch.

④between main switch and spark plug.

3.Main switch is out of order.

4.H.T. coil is abnormal.

5.CDI sets is out of order.

6.A.C. flywheel magneto is abnormal.

C.Starting system:

●Starting motor can't rotate:

1.The fuse is broken.

2.Battery recharges insufficiently.

3.Main switch is abnormal.

4.Switch of starting motor is out of order.

5.Switch of front. rear brake is out of order.

6.Starter relay is out of order.

7.Wire disconnects or broken.

●Currency is unstable.

1.The wiring of battery connects improperly.

2.Ignition system connects abnormally.

3.Ignition system is short circuit.

4.Lamp system connects abnormally or Short circuit.

●Abnormal recharge system:

1.The plug part connects abnormally, Wire broken or short circuit.

2.Rectifier is abnormal.

3.A.C. flywheel magneto is abnormal.

D.Engine rotate unsmoothly:

1.Ignition primary wiring

①the wire or plug of wiring connects Improperly.

②main switch disconnects.

2.Ignition secondary wiring

①Ignition coil is abnormal.

②Spark plug is abnormal.

③H.T. coil is abnormal

④Spark plug cover electricity leakage.

3.Ignition period

①A.C. magneto is abnormal.

②A.C.G. coil disconnects.

③C.D.I. set is abnormal.

8.Starting motor is out of order.

●Starting motor weak rotation:

1.battery recharges insufficiently.

2.wiring disconnect.

3.motor or gear some impure material drop in

●Starting motor can rotate, but engine Can't rotate:

1.starting pinion is abnormal.

2.starting motor is reverse rotation.

3.battery is out of order.

(2)Battery:

Always, remove the battery negative Cable(-), then remove positive cable (+). But connect the positive cable (+)first, then connect the negative cable(-) when assembling.



1.Recharging

Connection method:

Connect the positive cable(+)of the recharger to the positive cable(+)of the battery; and The negative cable(-)of the recharger to the negative cable(-)of the battery.

Recharging currency:

Please recharge(12V) according to the following currency and time.

Standard: 0.3A * 5-10HR OR Rapid: 3A * 1Hr

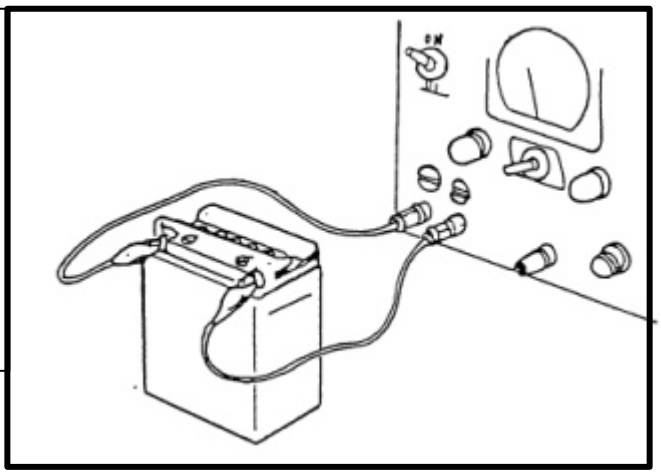
NOTICE:

1.It is not necessary to refill the battery liquid into the battery.

2.Do not take off the sealed bolt while recharging.

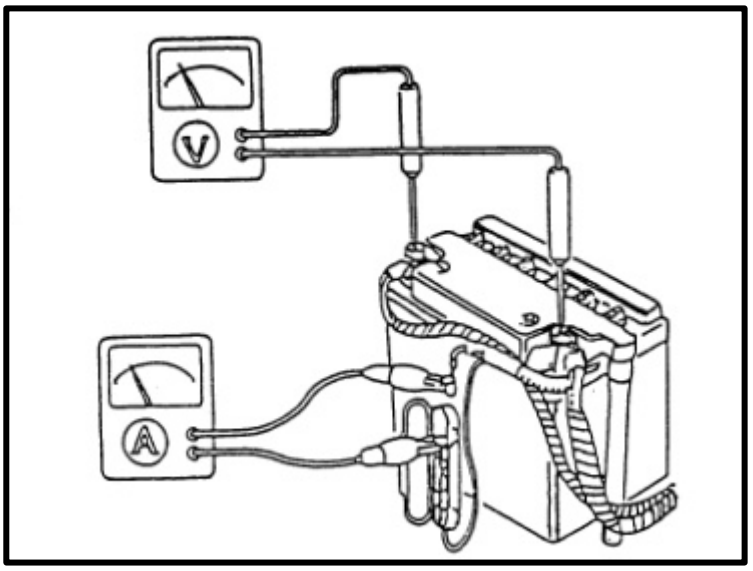
NOTE:

- No fire near battery when recharging
- The "ON" or "OFF" of recharging currency must be operated by the switch of recharger. It will cause spark or explosive if plug or unplug the cable directly.



2.Testing the recharging performance

This test needs to be done under the Battery has been recharged completely



a. This test needs to be done after engine is warm-up.
And take off the luggage case Firstly.

b. Disconnect the orange cable of regulator.

c. Open the fuse box to remove the white cable

d. Connect currency meter between red/ white cable fuse.

While testing, the red wire cable must not touch the frame.

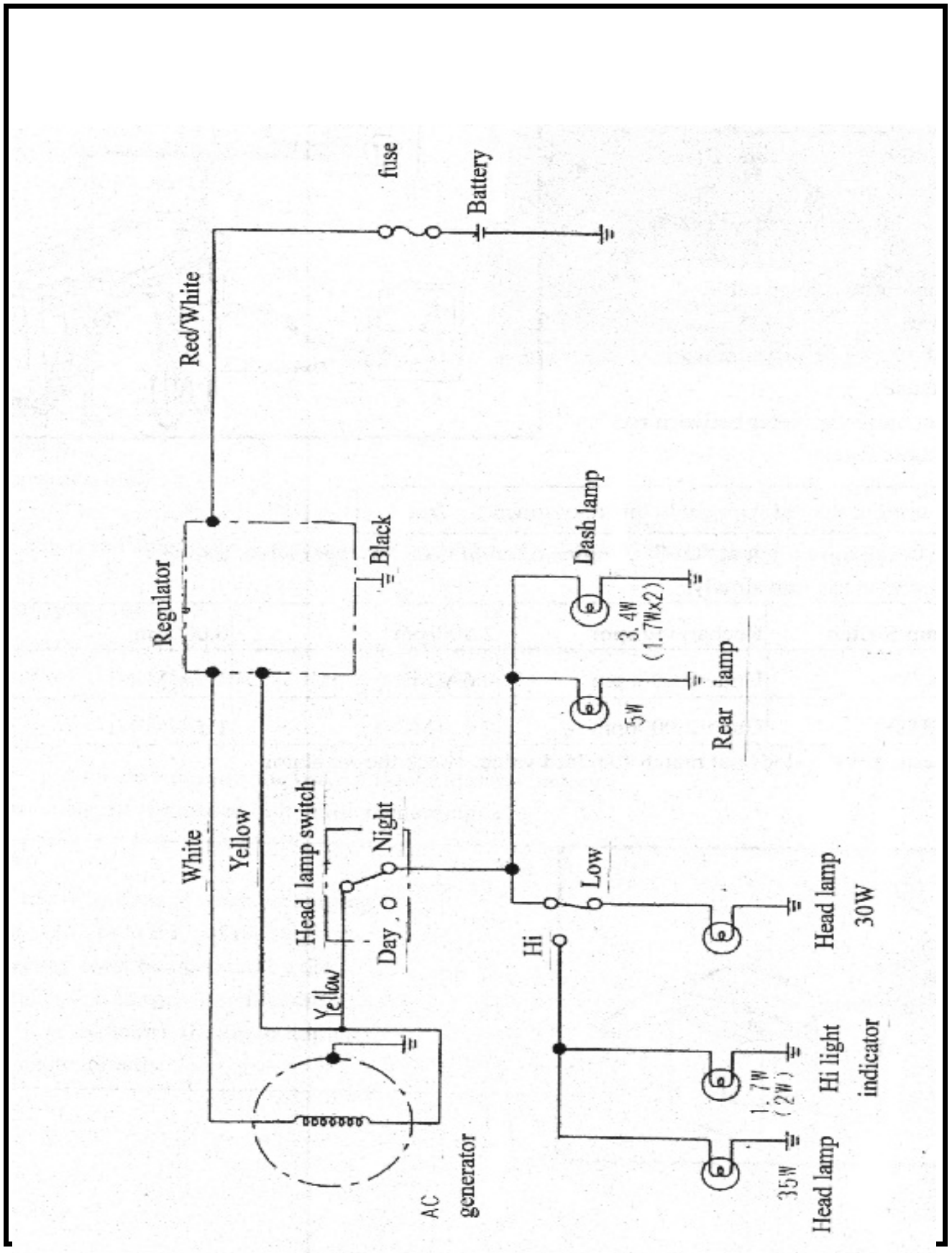
d. Set the headlamp switch at "OFF" , engine rotation is at 2000 rpm while testing.
Then increase the rpm slowly.

Head Lamp Switch	Recharging rpm	2,500rpm	6,000rpm
OFF (DAY)	Under2,000upm	0.6A(MIN)	1.5A(MIN)
ON (NIGHT)	Under2,000upm	0.6A(MIN)	1.5A(MIN)

e. If the testing result does not match standard value, check the regulator.

(3)Recharge system

1.Recharge system diagram

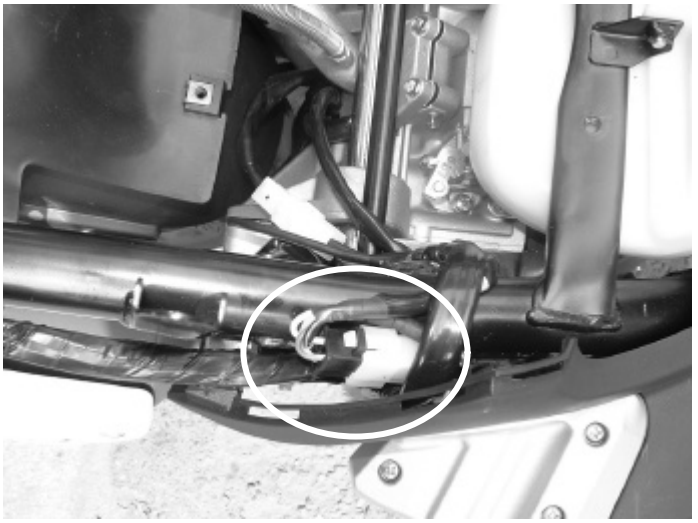


2.Check A.C. flywheel magneto.

a. Remove the LH side strip and LH body cover.

b. Measure the resistance value of terminals.

Yellow black 0.1-1.0
White black 0.2-2.0



3.Check regulator measure the resistance value between each terminal, it should be in specified range, otherwise change a new one.

Pocket tester range: * 1k range

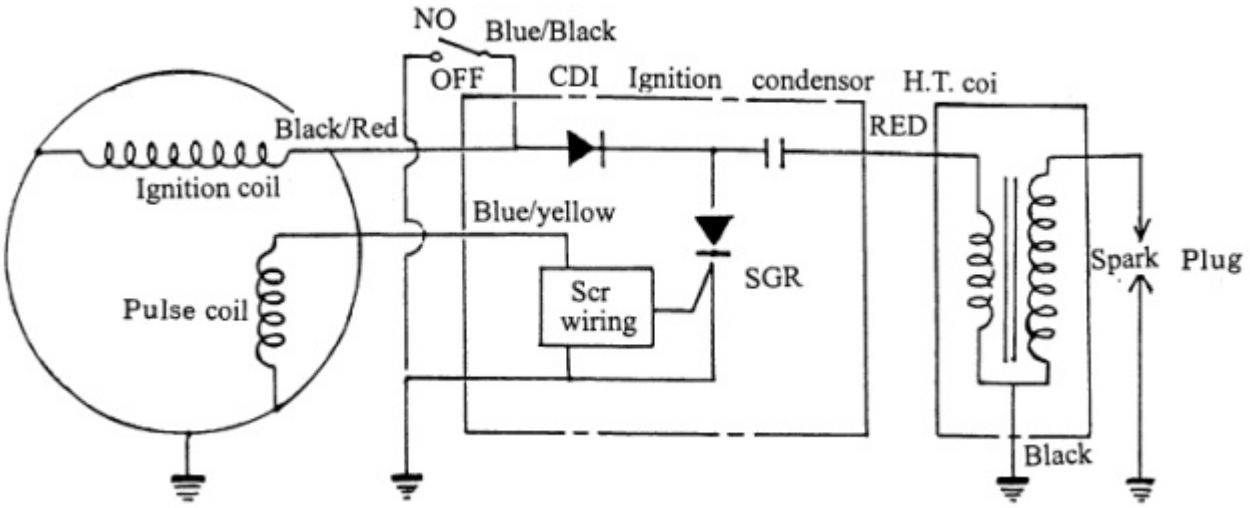
⊖ Probe of tester \ ⊕ Probe of tester	W	Y	R/W	B
W		∞	3 ~ 50	∞
Y	∞		∞	5 ~ 100
R/W	∞	∞		∞
B	∞	5 ~ 100	∞	



Regulator

(4)Ignition system:

1.the wiring of ignition

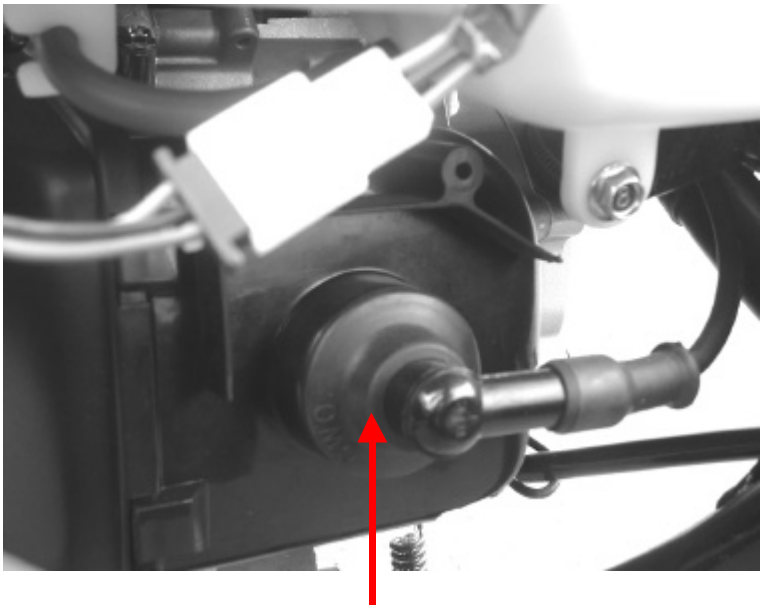


2.CDI Resistance inspection

Pocket tester range: * 1k range

⊖ Probe of tester \ ⊕ Probe of tester	Bl/B	R/B	Bl/Y	B	R
Bl/B		100k ~ ∞	100k ~ ∞	100k ~ ∞	∞
R/B	0.1k ~ 20k		∞	∞	∞
Bl/Y	20k ~ 200k	2k ~ 200k		1k ~ 100k	∞
B	1k ~ 100k	0.1k ~ 20k	100k ~ ∞		∞
R	∞	∞	∞	∞	

2.Check the spark plug.



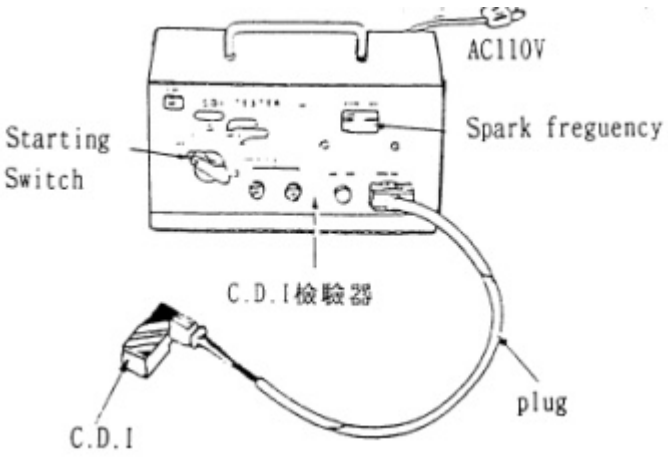
Spark Plug

3.Check the H.T. cable and H.T. coil by using the CDI tester. Please follow the instruction manual.

4.CDI sets checking.
Check with the CDI tester and Please follow the instruction Manual.
If the CDI is broken down, please Change a new one.

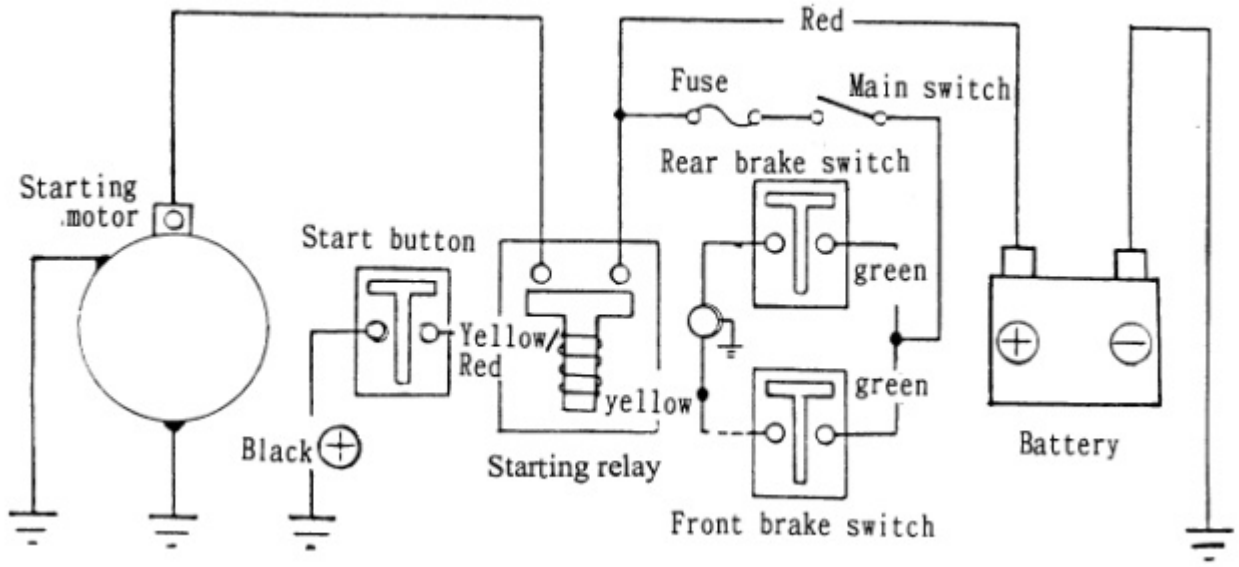


Coil



(5)Starting system

1.Starting wiring



2.Checking

●Other spare parts comp. Checking.

●Change a new one when there is any scratch, damage or burnt on the surface.

●Any adherent metal powder in-between the layers of the direction exchanger should be cleaned.

●The conductivity check among each contact surfaces to other parts.

●The non-conductivity check between the armature pivot and each layer of the direction exchanger.

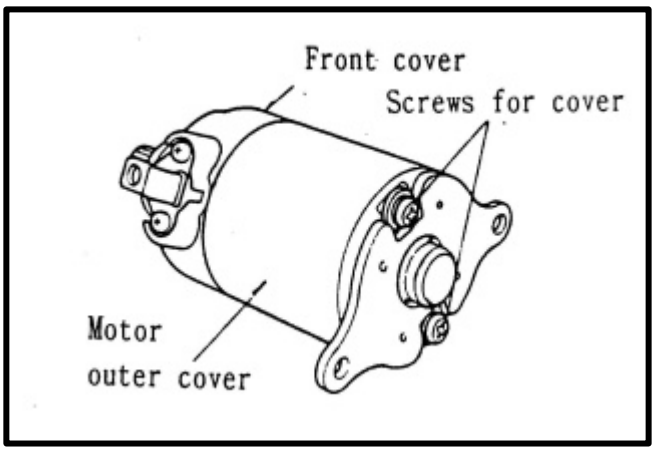
●The conductivity check of the outer cover of the starter motor

●The non-conductivity check between the cable ends and the outer cover of the starting motor.

●The conductivity check of the electric brush and the cable ends. If there is anything abnormal change a new one.

●The non-conductivity check of the brush bracket.

If it is conductive, change a new one.



3.Start Relay

Starting check:

●Remove the body cover.

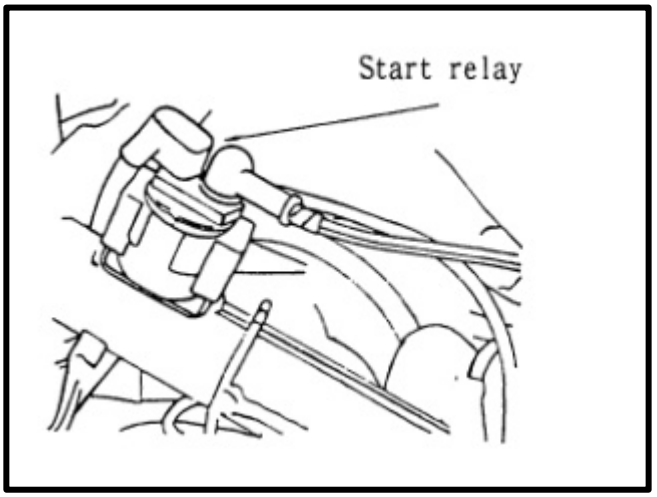
●When the main switch "ON" and press the starting motor button, there should be a "kata" sound.

●If there is not a "kata" sound:

a. Check the voltage of the start relay.

b. Check the start's ground circuit.

c. Check the start reply starting system.

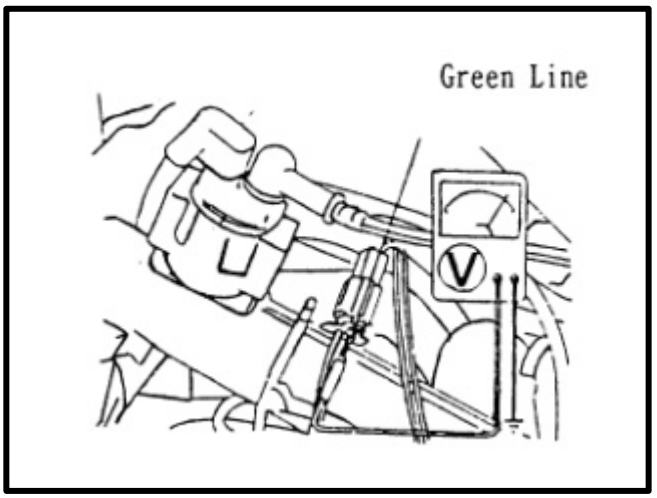


Voltage check for the start relay:

●Put on the center stand. Measure the voltage between the cable Green/Line(-) of the start relay and the body's ground circuit.

●To switch "ON" for the main switch and clamp the brake lever. The battery voltage has to meet the requirement.

●When there is no voltage at the start relay, check the brake switch conductivity and the cables.



(7)Handle bar switch

The colors for each switch cables:

Head Light Switch

Operation /Color	Dark green	Yellow	Yellow/black	Blue
OFF		•	•	
ON	•	•		•

Starting Button

Operation /Color	Green/White	Black
FREE		
PUSH	•	•

HI/LO bean

Operation /Color	Blue	Brown/White	Purple/White
HI	•	•	
LOW	•		•

Horn Switch

Operation /Color	Yellow/green	Black
PUSH	•	•
FREE		

Signal Light Switch

Operation/Color		Pink	Blue/White	Brown
L		•	•	
N	To L	•	•	
	PUSH			
	To R		•	•
R			•	•

Main Switch

Lock	Off	On	
		•	Red/white
•	•		Blue/black
		•	Orange
•	•		Black