



PS - 50 D

SERVICES MANUAL

Big Max



PGO SCOOTERS

PREFACE

This manual offers all service specialist with the technological procedures of maintenance , repairing for BIG-MAX. Detailedly show those whom may concern how to maintain, repair, change parts, troubleshoot and reassemble, etc.

At any 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 in this manual.

TAIWAN P.G.O. CO., LTD.

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Specification:

Name: BIG-MAX	ignition: CDI	Front wheel pressure:
Model:	start: kickstarter or electric start.	2.3 kg/cm ²
Size:	Lubrication: separated	Rear wheel pressure:
overall length: 1710mm	Lubrication type	1.5 kg/cm ²
overall width : 670mm	Chassis: steel pipe	
overall height: 1110mm	Front absorber: expanding & contracting	
overall base : 1195mm	Rear absorber: unit swing	
Weight:	Drive train:	
net weight: 84kg	Primary reduction:	
front : 33kg	CVT	
rear : 51kg	Secondary reduction:	
total : 84kg	52/13 × 44/13 = 13.538	
carrying capacity:	Clutch type: centrifugal type	
2 passengers and 110 kg	Selector: infinite variable speed (CVT)	
total weight : 194kg	Wheel dimension & layres:	
front : 51 kg	rear: 130/90-10	
rear : 133kg	front: 120/90-10	
total : 194kg	Front brake: hand brake disk by oil pressure type	
Performance:	Rear brake: hand brake lining expanding by mechanism type	
consumption : 45km/l.	Speedometer: 80 km/hr	
gradient ability : 18°	Head lamp : 12V 16W/18W	
Engine:	License plate lamp: 12V-15W	
model : P1	Brake lamp: 12V-10V	
fuel : unlead	Turn lamp : 12V-10V	
cooling: forced cool by fan	Horn: 12V DC	
Cylinder:	Silencer: diffusible absorption closed type	
bore: 40mm	Muffler location and direction:	
stroke: 39.2mm	Chassis lower right side & engine backward	
number: 1		
arrangement: horizontal		
displacement: 49cc		
compression ratio: 6.6:1		

二、Service information:

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f. Handlebar steering when running	
g. Front and rear damper not even	
h. Bad braking	
i. Oil gauge	
j. Fuel gauge	
k. Starting motor	

(1) The operation notice :

1. Always replace gasket , oring , cotter , pins and circlip whenever reassembled.
2. Tighten fastener, beginning on center or larger dia bolts to specs, where sequence is not specified in an x patter.
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 disconnect the negative pole(-) first when assembling please connect positive pole(+) first.
7. Before installing a new fuse, confirm the specification is correct or not.
8. After reassembling, please confirm 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 kgf-m	Remarks
1	cylinder head	5	1.0-1.2	When the engine is cold
2	flywheel plate	10	3.2-4.0	
3	rear brake lever	6	1.0-1.2	
4	driving pulley	20	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 bolt	8	1.8	
10	inlet pipe	6	1.0-1.2	
11	flywheel magneto	6	1.3-1.2	
12	cooling fan	6	1.0-1.2	
13	muffler nut on cylinder head	6	1.0-1.2	
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	8.0-10.0	U TYPE NUT
20	kick starter	6	1.0-1.2	

2. Chassis

1	steering stem nut	10mm	3.0-4.0	lock nut
2	front axle nut	12mm	5.0-6.0	(U type nut)
3	fixed nut fasten eng. and chassis	12mm	5.0-6.0	(U type nut)
4	rear shock absorber (upper)	10mm	3.0-4.0	
	rear shock absorber (lower)	8mm	2.0-3.0	
5	lock nut fasten frt. brake disk and frt. wheel rim	8mm	2.0-3.0	lock nut
6	lock bolt between frt. brake pump and frt. absorber	8mm	2.0-3.0	lock bolt

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	3.0 -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	8mm flange bolt and screw	2.0 -3.0
10	10mm flange bolt and screw	3.0 -4.0

(3) Lubrication instruction:

A. Engine

No	Lubrication parts	Oil type	Remarks
1	crankcase inner rotating, sliding part.	premium 2 cycle	auto-separated lubrication
2	cylinder inner rotating, sliding parts.	motorcycle oil or SAE=30	
3	drive gear box	SAE=90	110cc
4	gasket of scarter shaft	clean grease	
5	start idle gear sliding parts	clean grease	

B. Chassis parts



steering column steel
ball-bearing grease

FRT brake comp-brake oil



brake cam pin-clean grease

Wheel bearing part

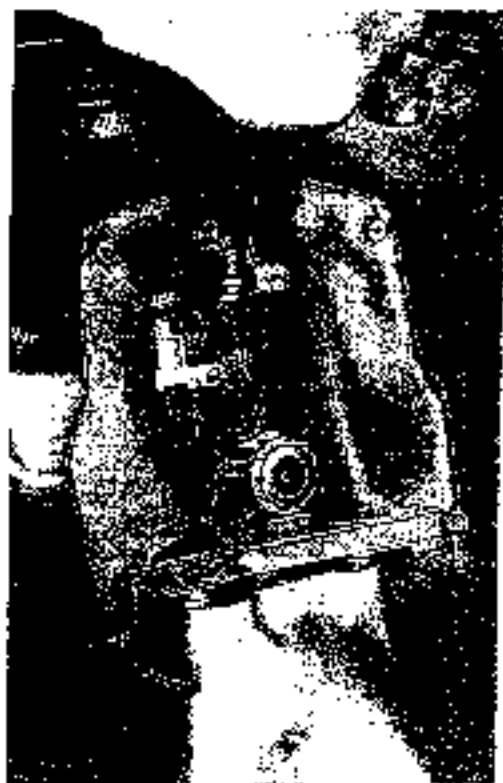
Final drive mechanism-oil



speedometer gear - clean grease

Frt. wheel bearing - clean grease

2 Front chassis cable assembling diagram

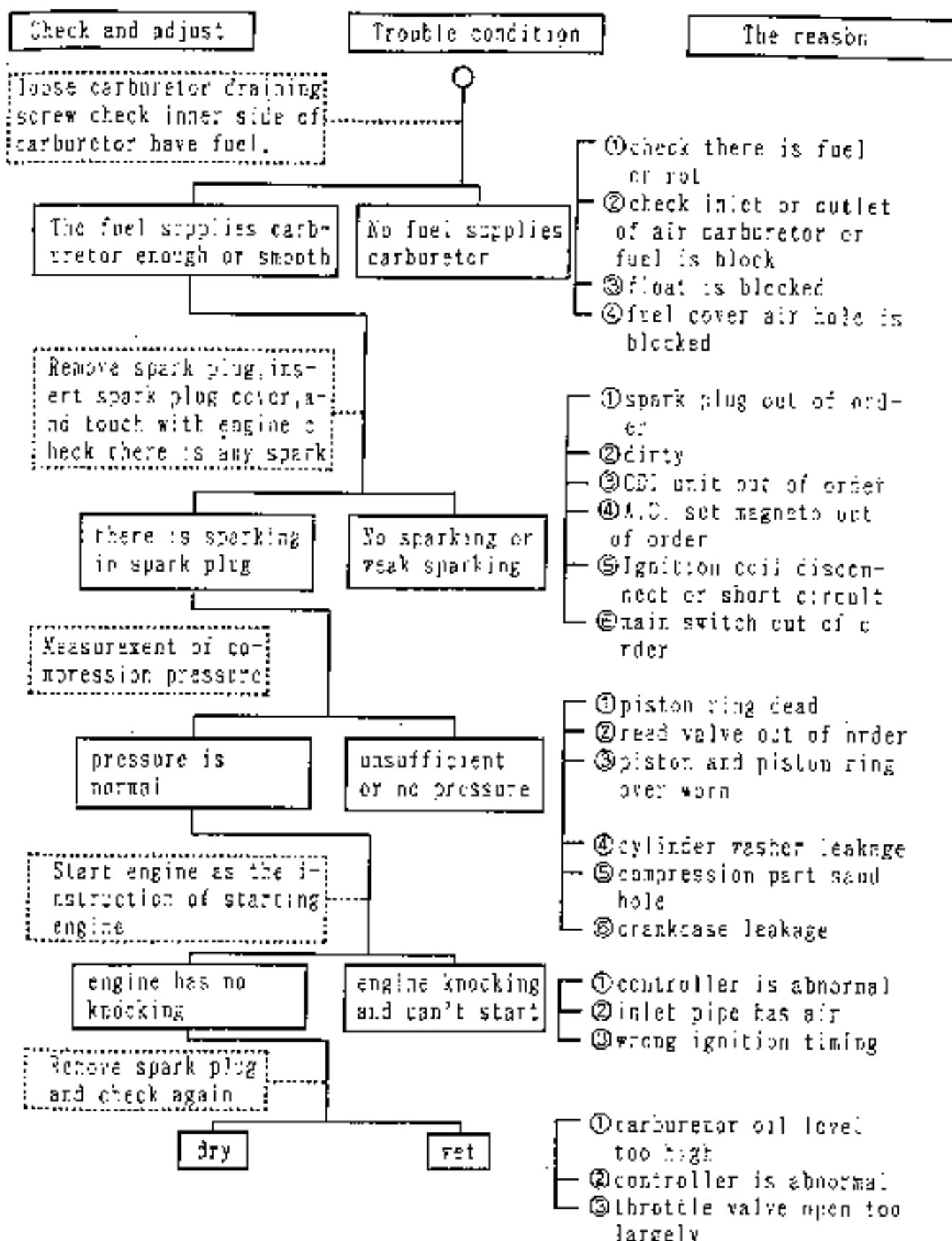


3 Rear chassis cable assembling diagram

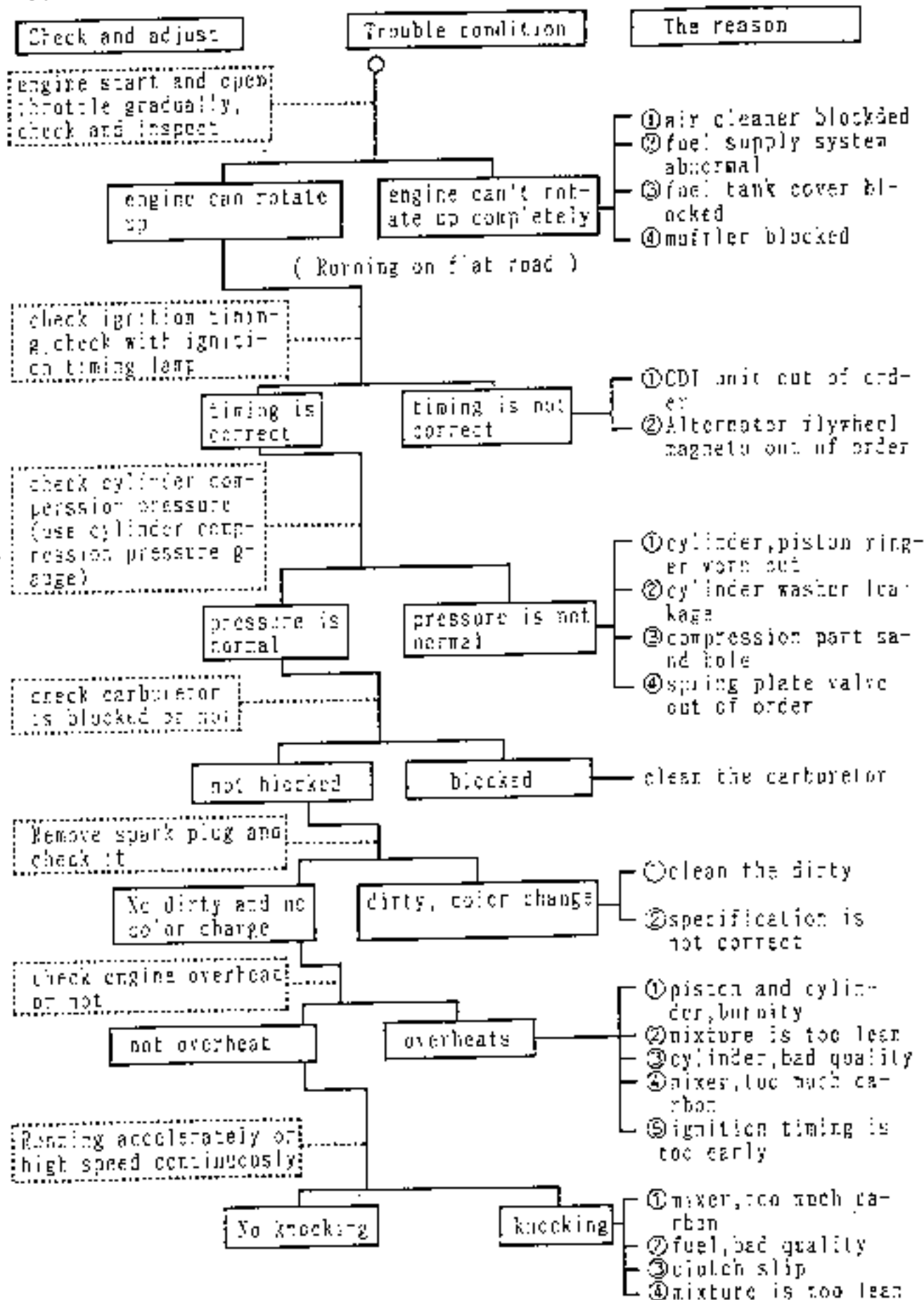


(5) Trouble shooting:

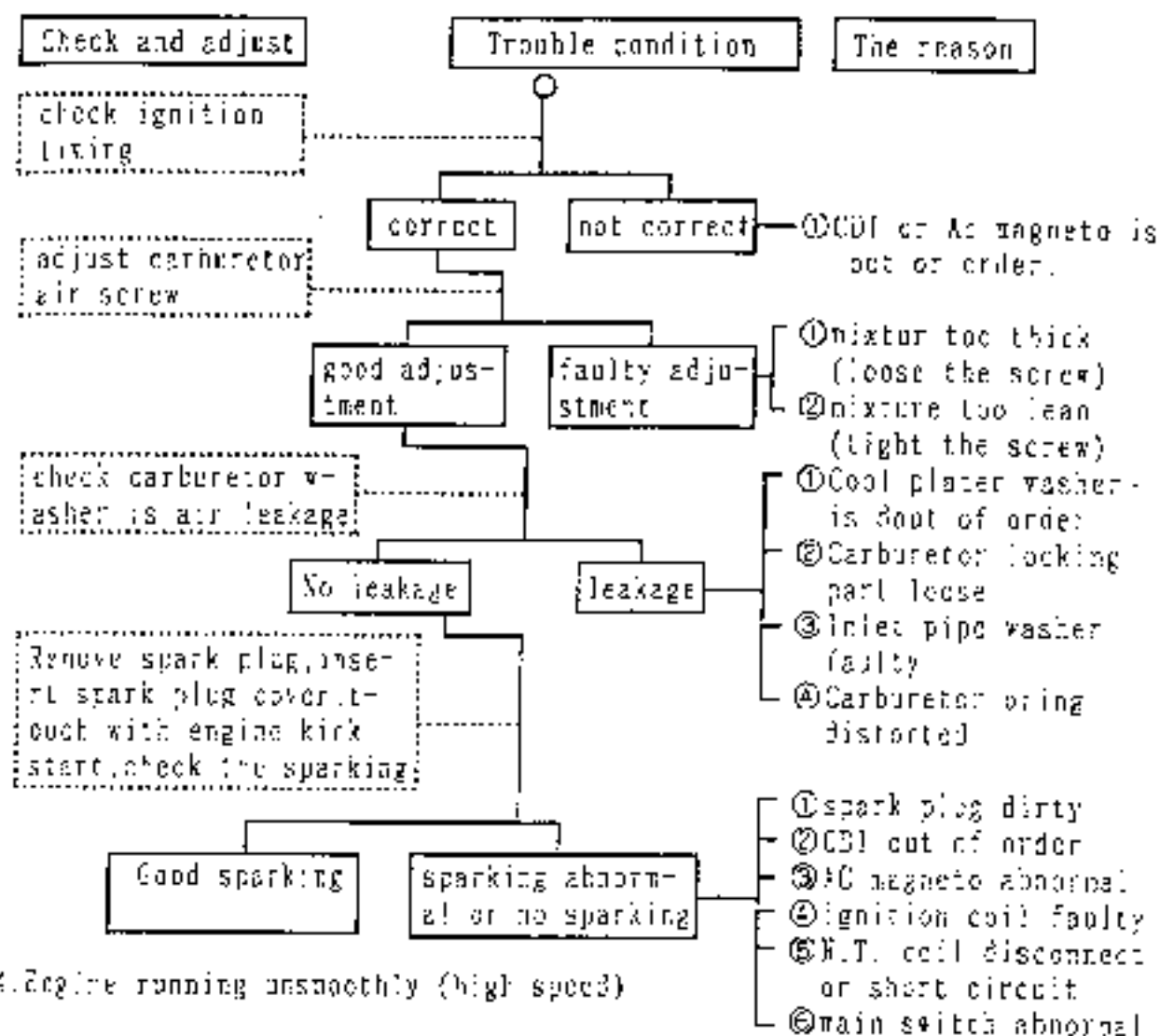
1. Hard starting or can't start:



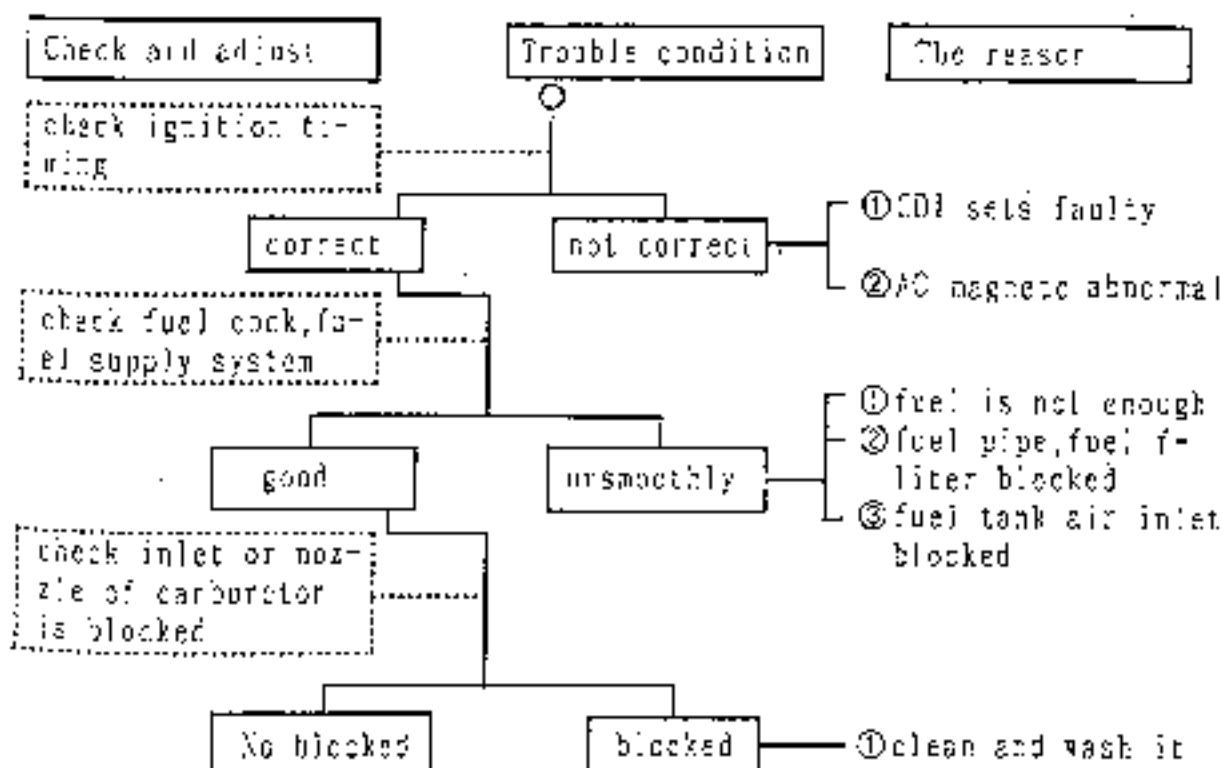
2. Weak acceleration; inefficient horsepower



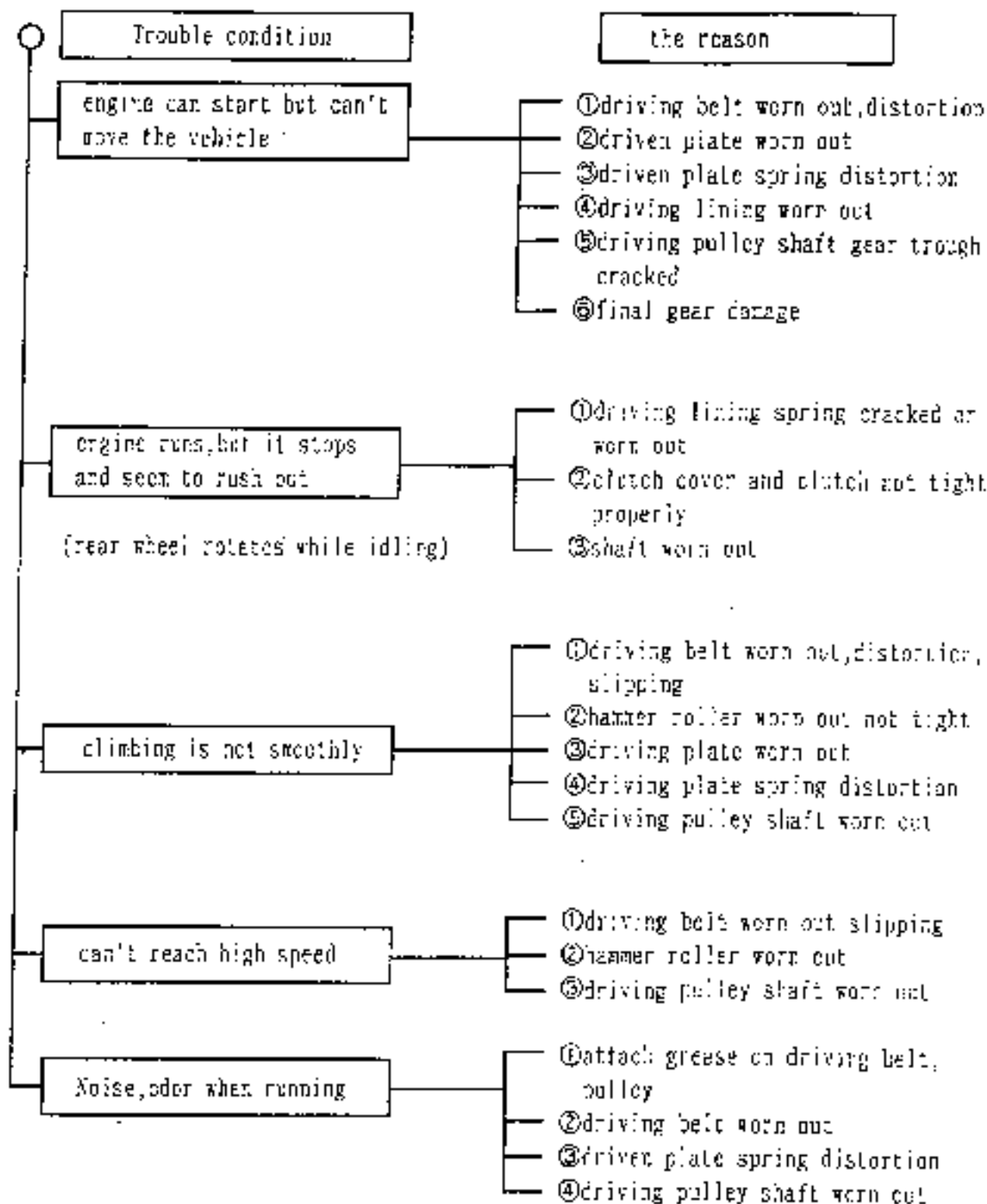
3. Engine running unsmoothly (low speed and idling)



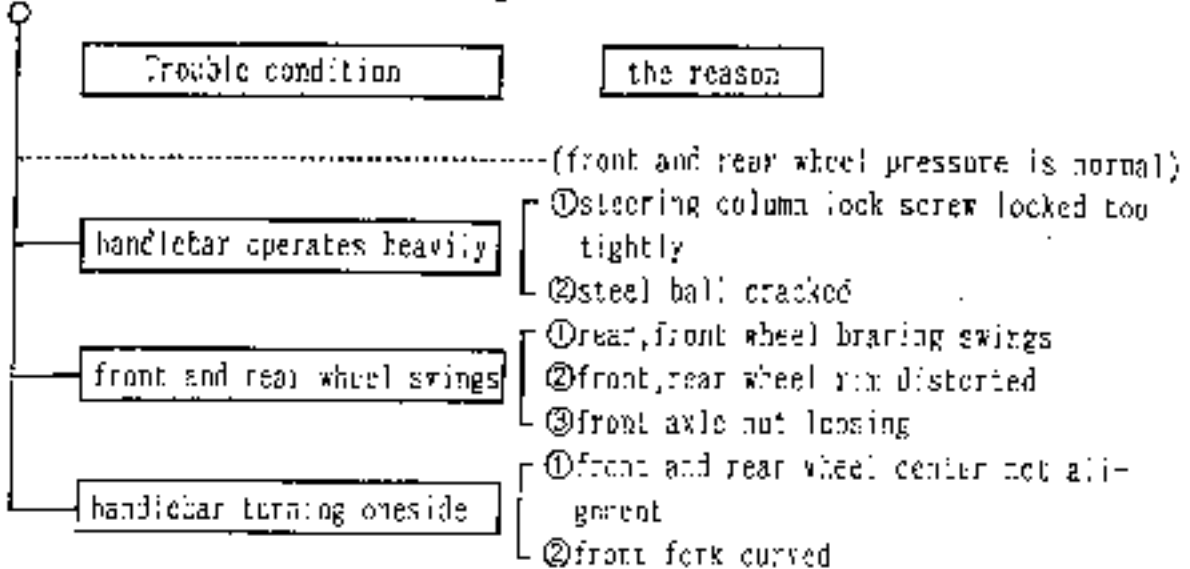
4. Engine running unsmoothly (high speed)



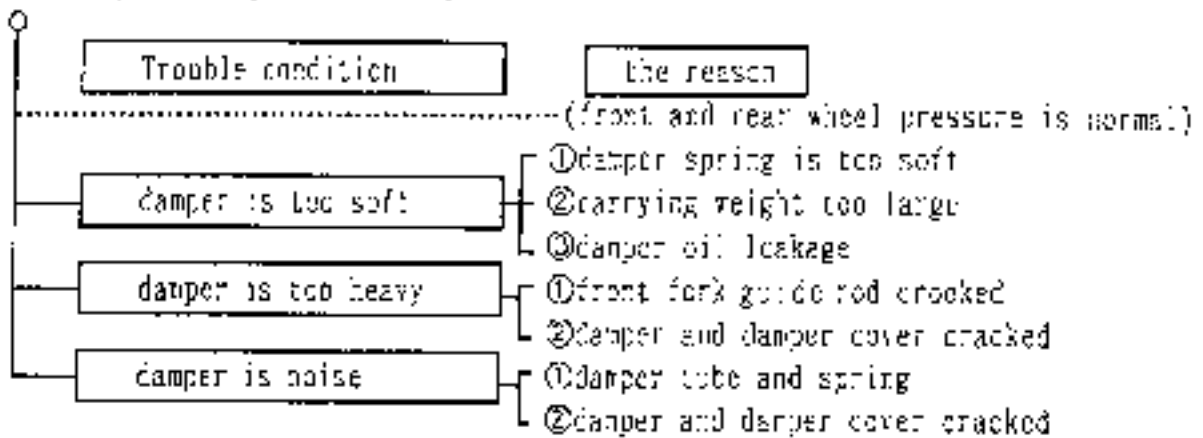
5. clutch, drive, driven pulley



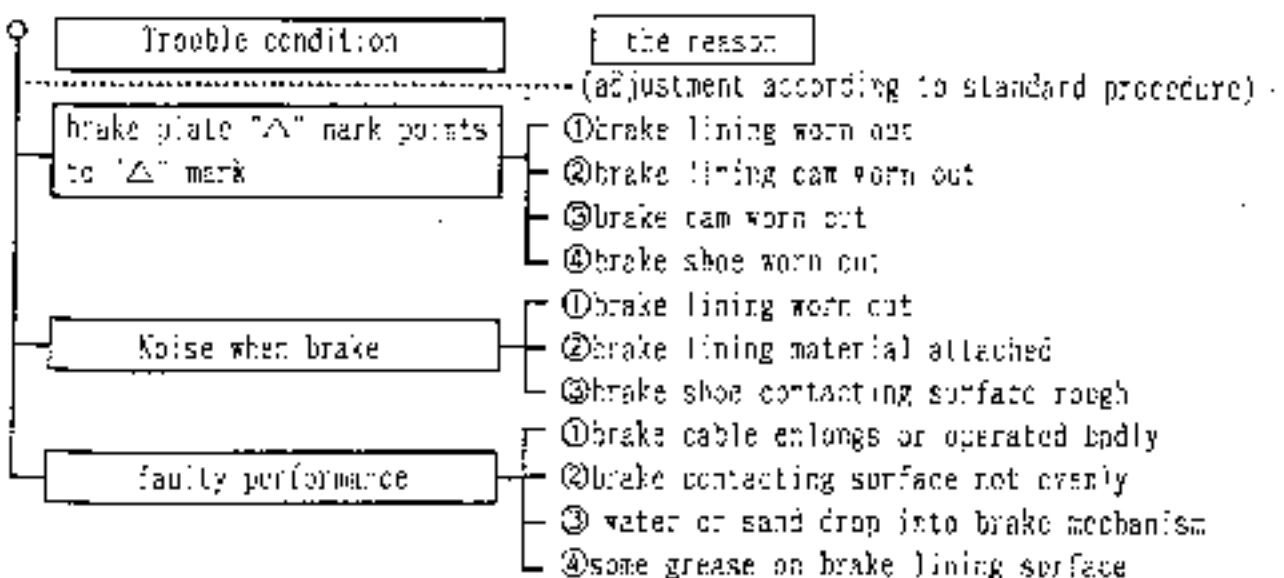
5. Handlebar steering when running.



7. Front, rear damper not evenly.

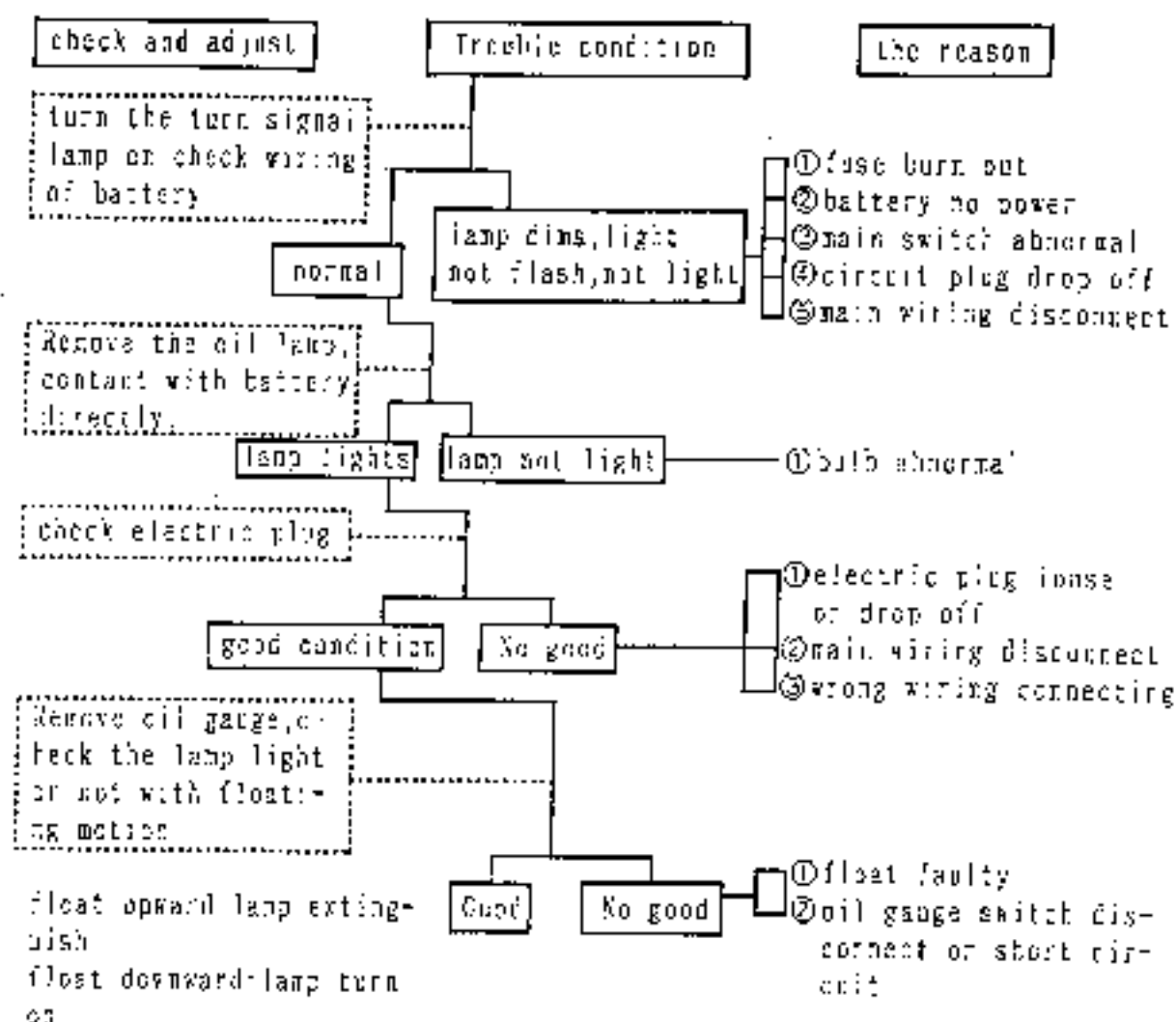


8. Brake disorder.

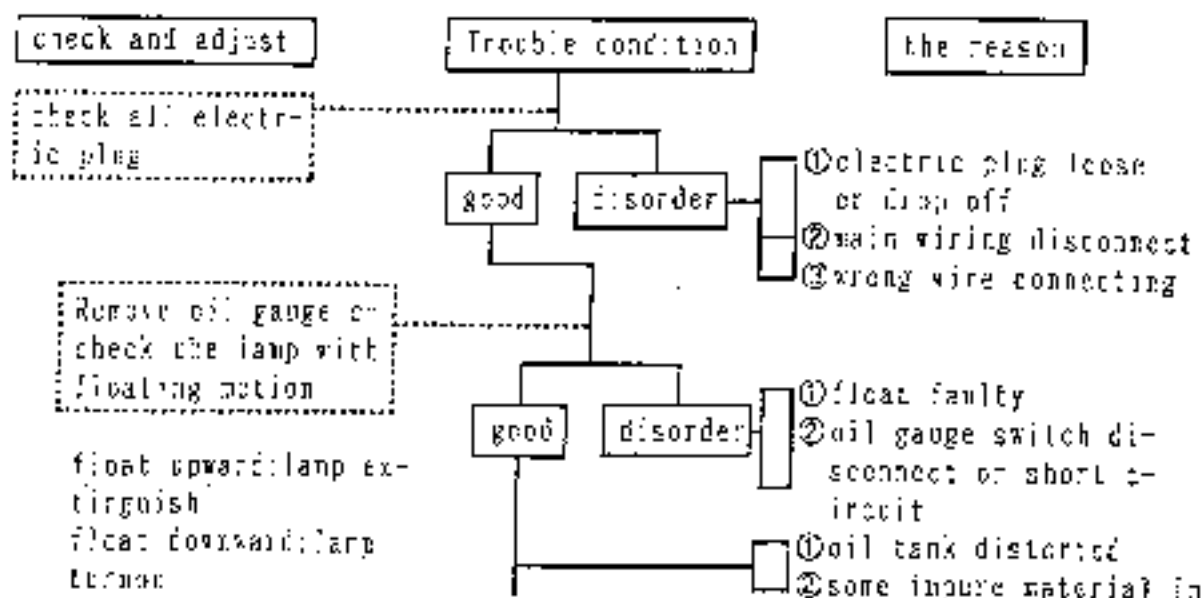


9. Oil indicator.

(a) The oil lamp doesn't light, (when the main switch is at "ON" position)

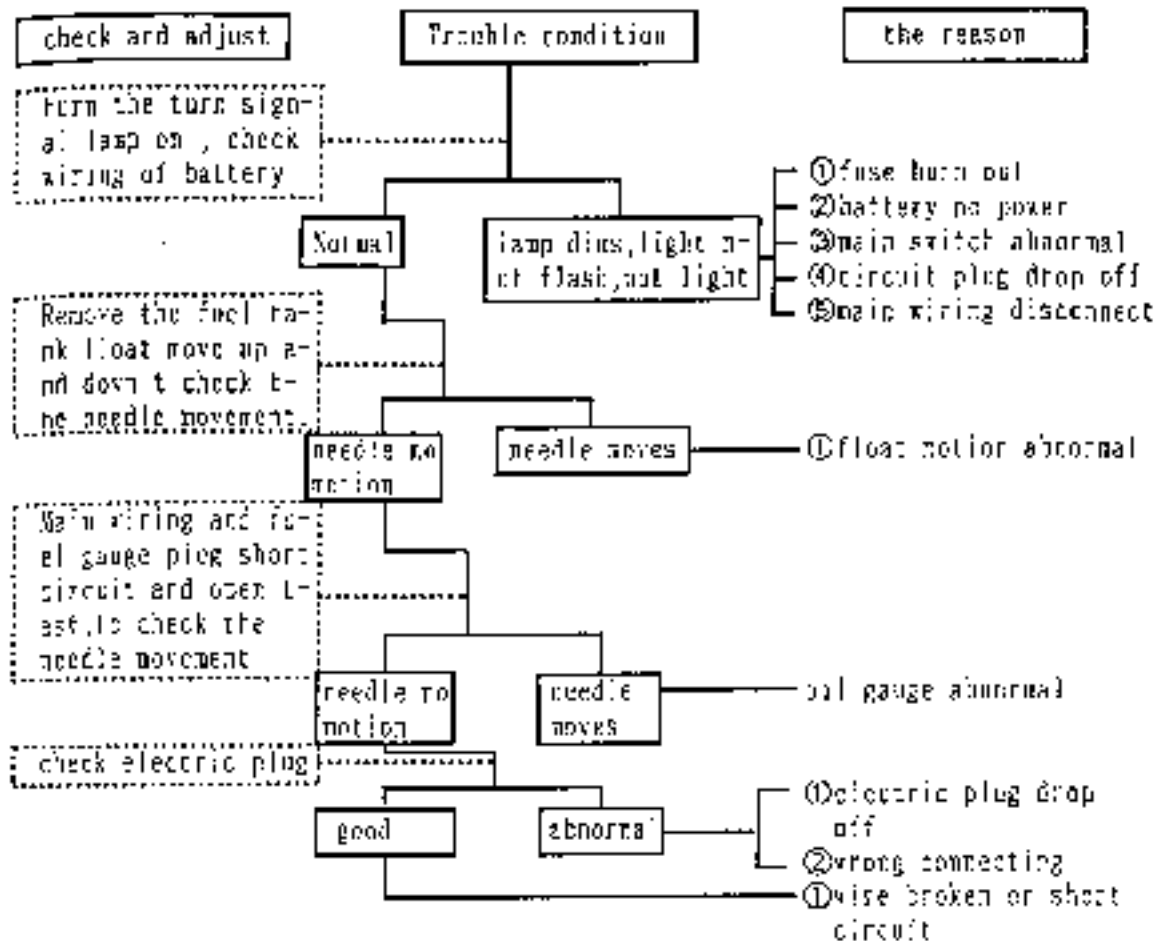


(b) Oil is enough but indicator light continuously (when the main switch is 'ON')

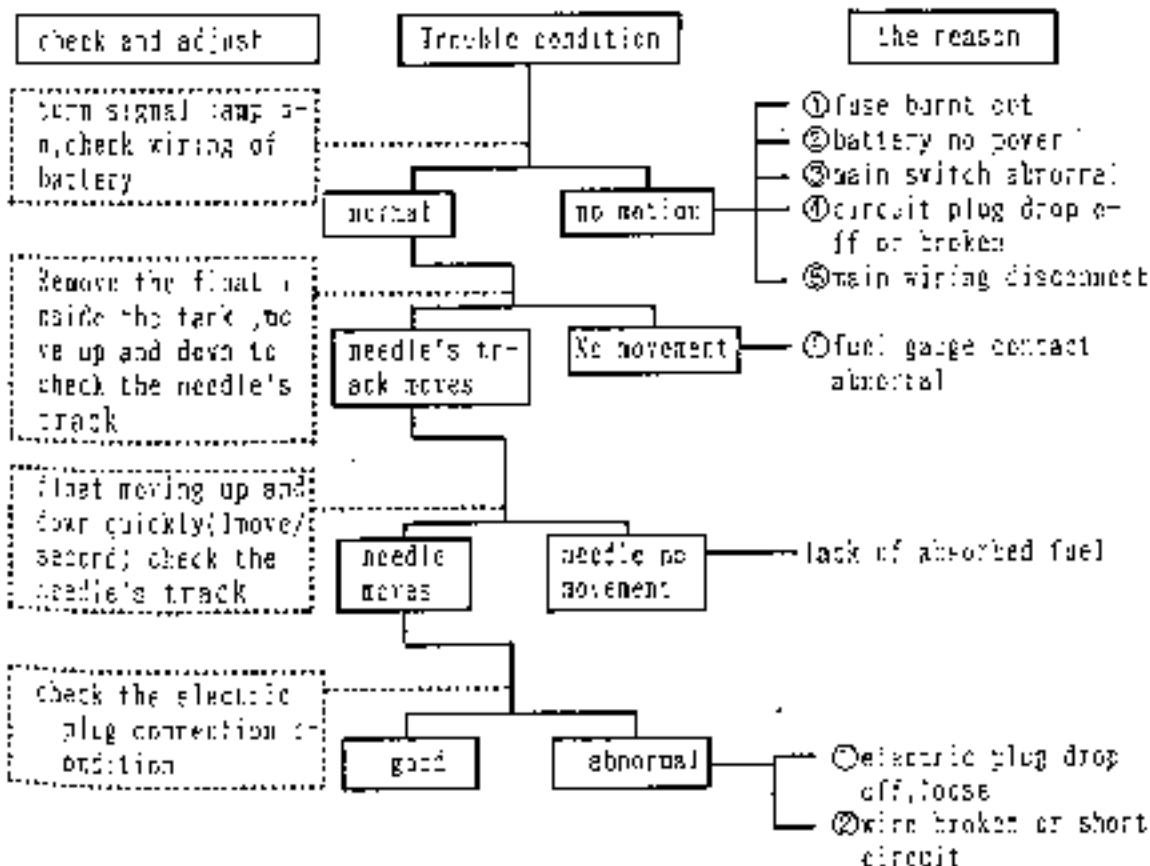


10. Fuel gauge

(a) fuel gauge indicator indicates incorrect fuel quantity (when the main switch is 'ON')

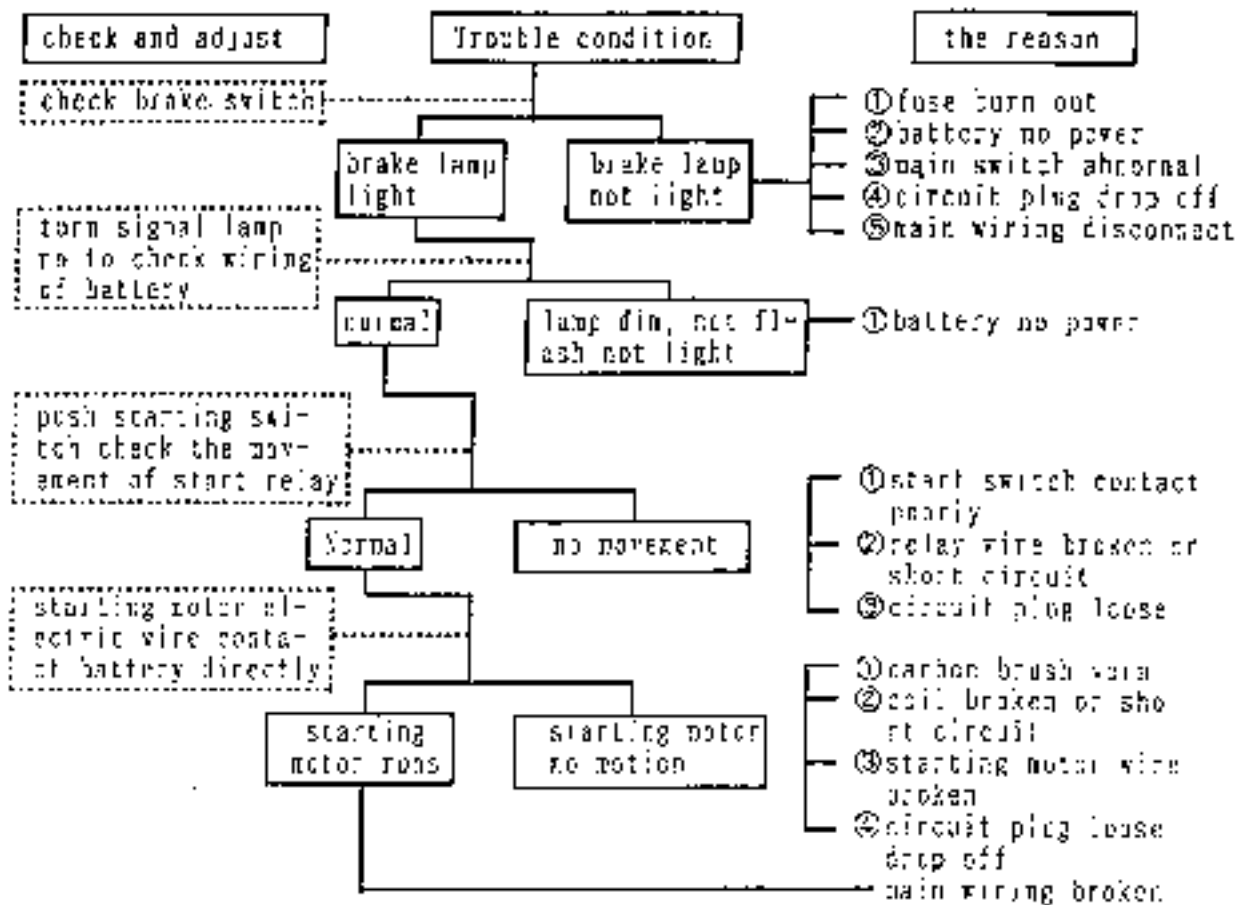


(b) fuel gauge needle not steady sometimes move up and down (when the main switch is 'ON')

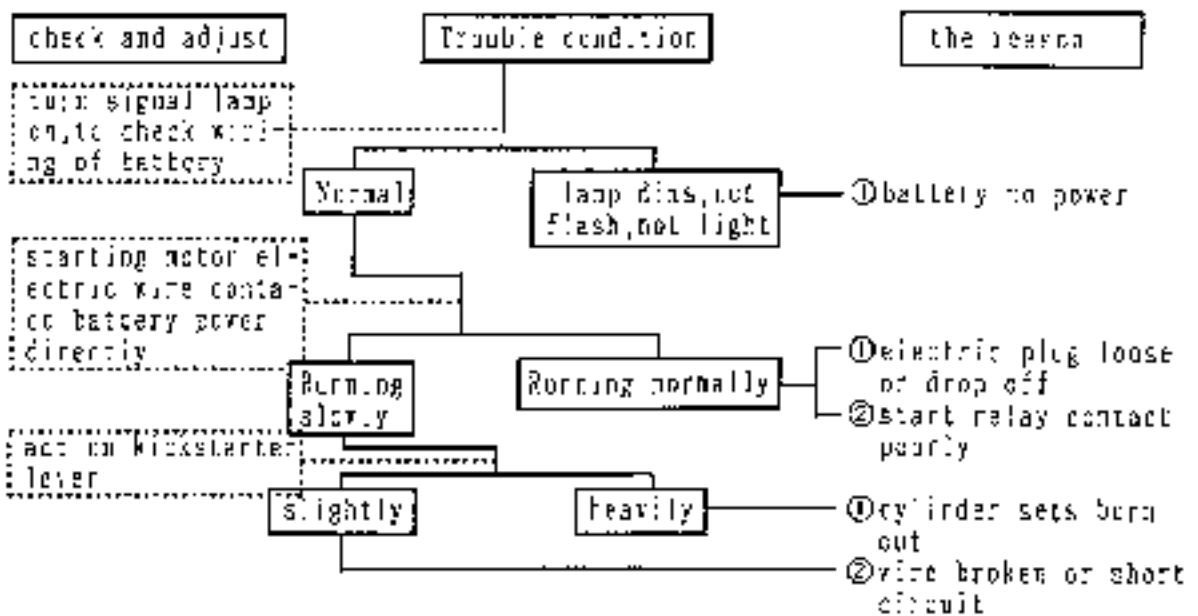


11. The starting motor

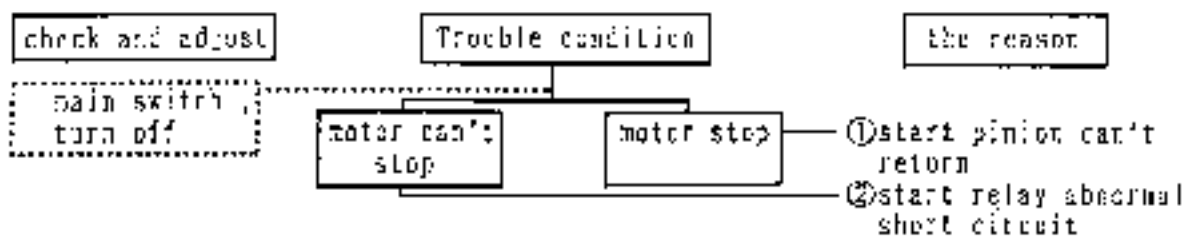
(a) starting motor no motion



(b) starting motor running slowly or idling



(c) starting motor running, no stepping



≡ 、 Checking and Adjustment:

- (1) Dated checking table
- (2) Battery
- (3) cleaning air cleaner
- (4) The final reducing mechanism oil
- (5) Spark plug
- (6) Compression pressure measurement
- (7) Ignition timing
- (8) Throttle cables adjustment
- (9) Idle adjustment
- (10) Frt brake adjustment
- (11) Rr brake adjustment
- (12) Tire

(1) Dated checking table:

1. [○] mark indicates periodical checking

2. [*] indicates changing the parts

check item	checking period						judgement standard	Remarks	
	general checking	first month	home		office				
			per 6 months	per 12 months	per 1 month	per 3 months			per 12 months
A Suspension steering handlebar	loose, swing performance	○		○	○	○	○		
suspension: turning angle						○			
front fork	a. cracked			○	○	○	○		
	b shaft fixed condition			○	○	○	○	front steel column	
	c. shaft: loose						○		
B. Brake							clearance:	check f	
brake lever	a. clearance	○		○	○	○	○	front: 5-7 mm rear: 5-7 mm	steeri- column
	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 with nut						○		
	c. brake drum worn and damage					○		standard dia: rear: 110.0mm limit of use: rear: 112.0mm	mark t
wheel	front axle: damage or cracked						○		check axle
	rear axle: worn or damage						○		
	wheel pressure	○	○	○	○	○	○	unit: kg/cm ² / ton / over front wheel: rear wheel: 1.50 1.50	
	wheel cracked or damage	○		○	○	○	○		
	wheel gap and worn	○		○	○	○	○	gap: front wheel: 0.8mm rear wheel: 0.8mm	
	wheel surface or other parts	○		○	○	○	○		
	axle nut screw pin tightness			○	○	○	○	front axle screw torque 3.0-4.0kg-m rear axle torque 3.0-10.0kg-m	Nut loose
wheel rim swingness and damage condition			○	○	○	○	swingness for front rear wheel rim, vertical swing: 2mm below horizontal: 2mm below		

Check item	checking period						judgement standard	Remark	
	general check-king	first month	home		office				
			per 6 months	per 12 months	per 1 month	per 3 months			per 12 months
wheel	front bearing of axle, looseness			○	○	○			
	rear			○					
damper	rear damper spring cracked	○		○	○	○			
	assy part loose or damage			○	○	○			
	connecting part loose				○				
	bracket loose or damage				○				
	suspension	connecting part loose				○			
power transmission	damper				○	○			
		oil leakage				○			
		cracked				○	○		
Clutch and change speed mechanism	assy part, loose				○	○			
	clutch			○	○	○			
	change gear			○	○	○			
	oil leakage			○	○	○			
	supply grease			○	○	○	※ per 2 year		
electric installment	ignition			○	○	○	clearance: 0.6~0.7mm NGK: BPHS OR SAME SPEC		
	start mechanism				○	○			
	wiring			○	○	○			
	battery	electrolyte quantil			○	○	○	level between UPPER and LOWER	
		electrolyte S. gravity				○	○	when 20°C specific gravity: 1.270 - 1.280	
	wire circuit			○	○	○			
	wire connecting loose or cracked			○	○	○			

check	item	checking period					judgement standard	Remark			
		general check	first month	home		office					
				per 6 months	per 12 months	per 1 month			per 3 months	per 12 months	
engine	engine parts	performance, noise			○	○	○	○			
		low speed, acceleration			○	○	○	○	○	idling: 1900 ± 100 rpm	
		exhaustion	○		○	○	○	○	○		check color ofhausting
		air cleaner			○	○	○	○	○		
		cylinder, cylinder head inlet pipe, locking condition							○	locking torque cylinder head: (cold) 1.0-1.2kg/r inlet pipe:(cold) 1.0-1.2kg/r	
		compression pressure				○			○	using static motor. 7kg/cm ² (500rpm)	
	lubrication system	oil leakage			○	○	○	○	○		
		oil quantity, dirty			○	○	○	○	○		
		oil quantity	○								
		oil cleaner blocked				○		○	○		
	fuel system	fuel quantity	○								
		fuel leakage			○	○	○	○	○		
carburetor parts dirty				○	○	○	○	○			
carburetor throttle and choke performance				○	○	○	○	○			
carburetor float height				○	○	○	○	○			
carburetor adjustment				○	○	○	○	○			
fuel pipe changing									※ per 4 years		

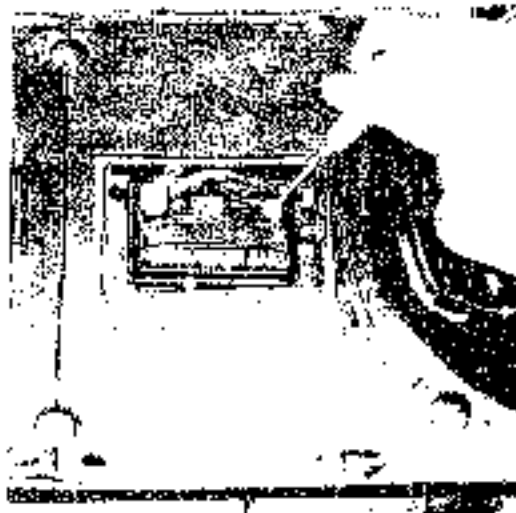
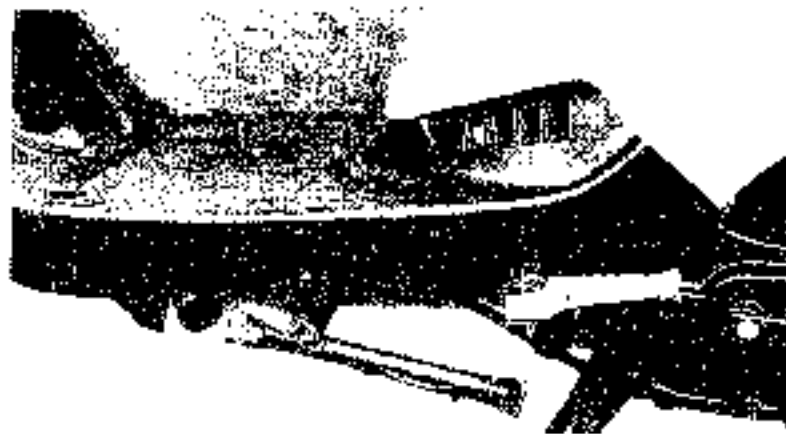
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Checking item	checking period						Judgement standard	Remark
	general checking	first month	home		office			
			per 6 months	per 12 months	per 1 month	per 3 months		
lamp system	performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	dirty, cracked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
horn turn signal reflector	performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	horn turn sign	
lock	performance		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
rear view mirror	check the illumination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
blinker (license plate number) mark	dirty cracked	<input type="checkbox"/>						
Instrument board	performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
muffler	Assy part loose		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	cracked							
silencer	performance		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
chassis	loose or cracked		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
the earlier abnormal condition	confirm it does not happen again	<input type="checkbox"/>						
others	chassis lubrication		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	decoking mixer, muffler, silencer			<input type="checkbox"/>	<input type="checkbox"/>			

(2) Battery:Recharge when run out of it

- 1.Open the cover and remove the rubber cap.→take out the battery.
- 2.Remove the negative cable and then the positive cable, →take out the battery to recharge.
- 3.Re-assembling the battery as the opposite procedure of disassembling after recharging.



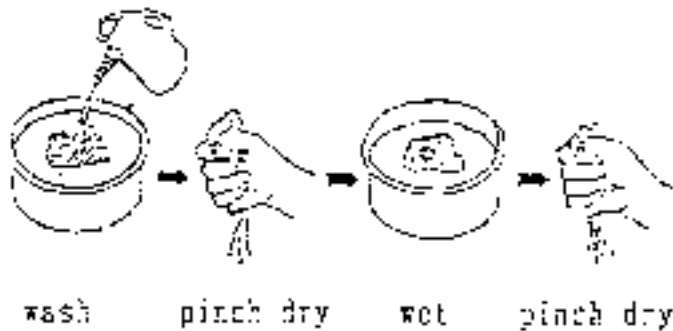
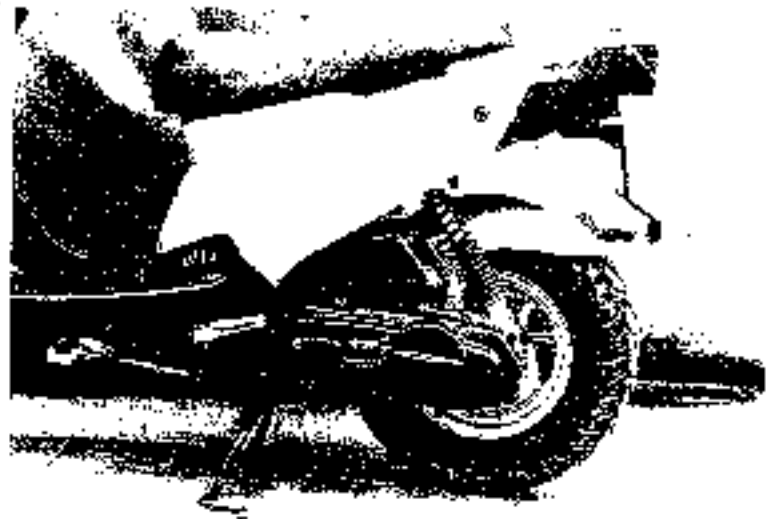
Note:

- 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: $0.45 \times 5-10$ hr or rapid: $4A \times 30$ min.

(3) Cleaning air cleaner

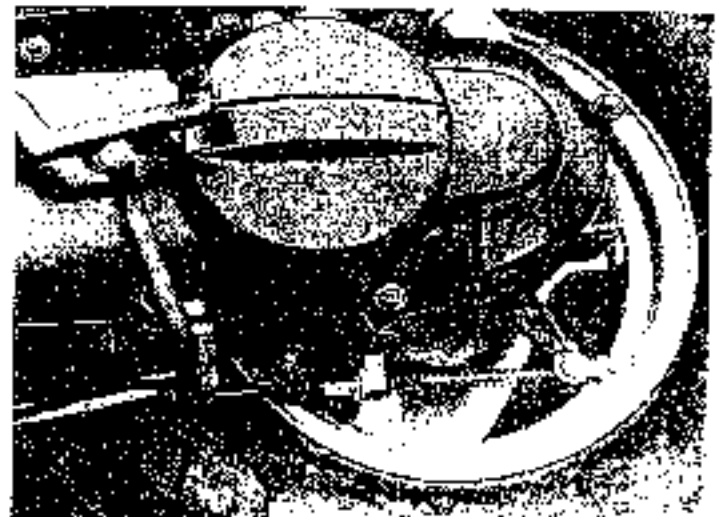
1. Remove air cleaner cover with cross type screwdriver.
2. Take out the sponge of air cleaner.
3. Immerse in neat oil then pinch it dry.
4. Assemble the air cleaner as the opposite above procedure.

Note: Do not start the engine before assembling the air cleaner.



(4) 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 filler bolt to drain the gear oil off.
 - d. Lock the draining bolt before refill 3.7l gear oil and then lock the filler bolt.
 - e. Locking torque: 1.8 kg.m



(5) Spark plug

Remove spark plug

Check the spark plug electrode

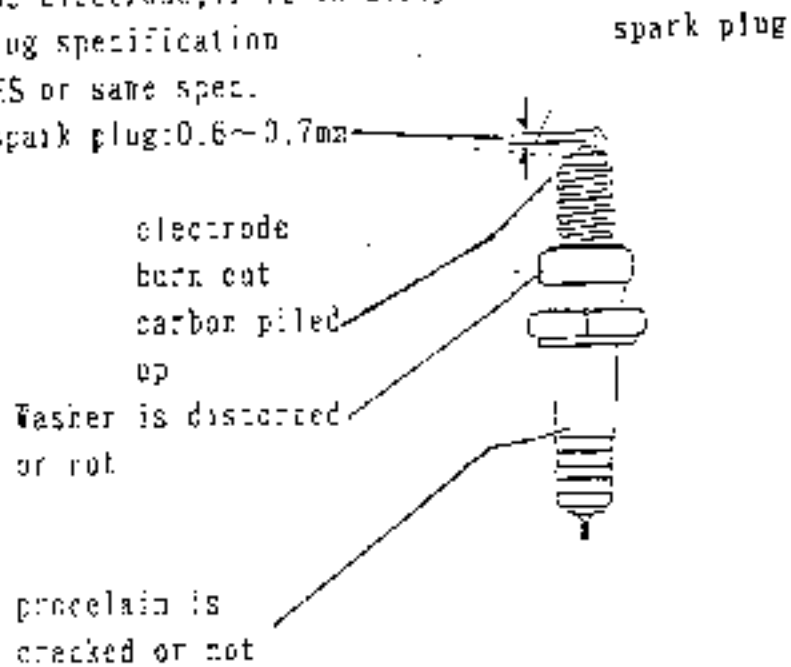
Burnt out or not and carbonized or not

Clean the electrode, if it is dirty

Spark plug specification

NGK: BPR7ES or same spec.

Gap of spark plug: 0.6~0.7mm



(6) Compression pressure measurement:

1. Measure it when the engine is warm.
2. Remove the cover.
3. Remove spark plug then place compression pressure gauge.

Fully open the throttle, act on kickstarter 5 times continuously, measure the compression pressure.

Compression pressure:
8 kg/cm²-900rpm.

When the compression pressure is too low, check the following:
a. cylinder head washer cracked.

b. piston cylinder worn out.

c. piston ring worn out.

The compression pressure is too high it is due to carbonization of combustion chamber and piston tip.



(7) Ignition timing:

Don't adjust the ignition timing because of using the CDI sets.
If ignition timing is not correct check the CDI sets AC magneto, change it if it is abnormal.

checking ignition timing:

1. Remove right side cover.
2. Remove the fan cover.



3. Remove fan case.
4. Check with ignition timing lamp.
Keep the engine running at $1,500 \pm 100$ r.p.m.
if the checking mark lay in
 $\pm 3^\circ$ apart from F, it's ok.
5. Ignition timing: B.T.D.C.
 $17^\circ \pm 3^\circ / 1900$ rpm.

(8) Throttle cables adjustment:

Check the clearance of throttle
twist grip.

Normal clearance: 1.5-3.5mm

Adjust it by rotating the
adjuster nut, change it if the
throttle cables can't be adjusted.



(9) Idle adjustment:

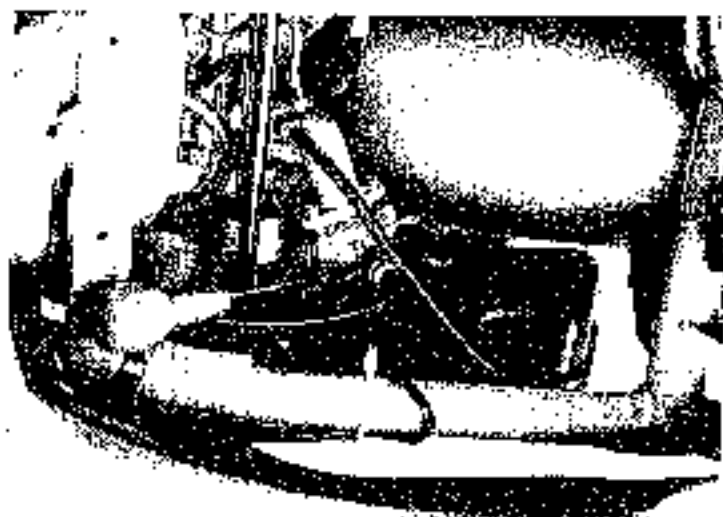
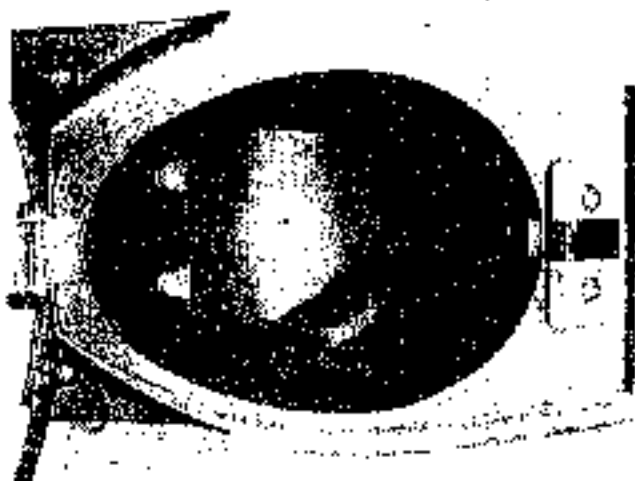
Note: adjust it when the engine is warm.

Remove left side cover.
Use Tachometer

Adjust throttle valve screw in order to set the idle running at 1900 ± 100 rpm.
If the rpm not steady when slightly open throttle twist grip, adjust according to the following:

1. Screw the air adjuster screw inside (cw) then loosen it oppositely (ccw) recommended opening: $1/8 \times 1/2$ circle from dead point.
2. Rotate the throttle valve screw to set the idling condition.
3. Rotate air adjuster screw cw and ccw to find the highest rotation location.
4. then rotate the throttle valve screw to set the idling condition.
5. Gradually open the throttle, adjust it continuously till the idle running rpm is steady.

If the rpm is unsteady, please adjust it repeatedly according to procedure 2-4



(10) Front brake adjustment:

1. Check the clearance of front brake lever.
clearance: 2-5mm
2. If the clearance is beyond standard: check whether
a. The air mix into the pipe/
pump
b. The brake oil pressure
system leaking.

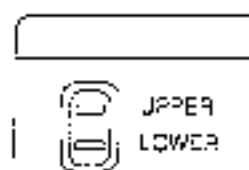
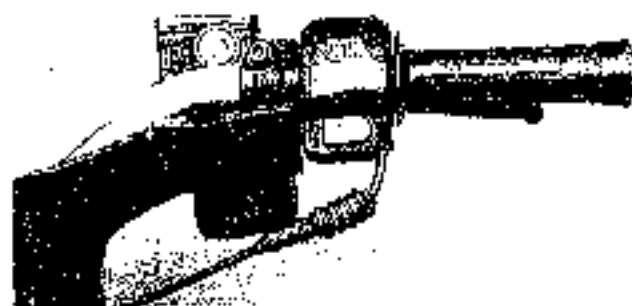
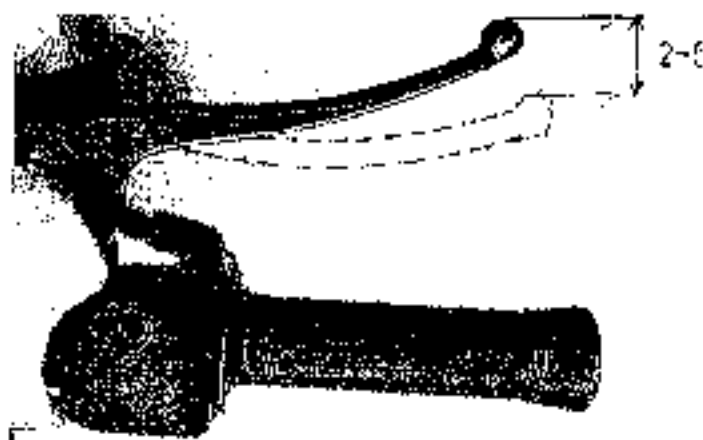
Note:

Try brake lever to see if it is loose, check brake oil and air mixture in oil pipe, which reduces or damages brake efficiency.

3. Check the brake oil:
a. Refill the brake oil when the oil surface lower than the "LOWER" level
b. Specification of oil
SAEJ-1703F DSTR&D004

Note:

- a. To prevent the splitting oil onto the parts and clothing put a piece of cloth on the bottom at refilling.
- b. To avoid letting in water or particles to the main cylinder at refilling.
- c. Never use oil of different spec.
- d. In case that skin, eyes or clothes touch the brake oil please washed with large quantity water, then cured by special doctor immediately.



(11)Rear brake adjustment

Check the clearance
of rear brake lever.

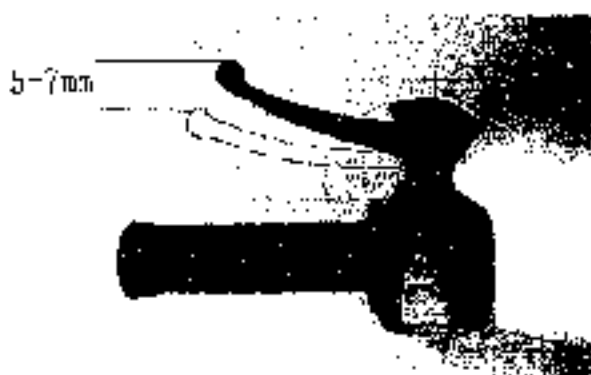
Clearance:5-7mm

If the clearance is
beyond the above sta-
ndard,adjust it by
rotating the adjuster
rot.

- a. Left handed rotation
add the clearance.
- b. Right handed rotation
reduce the clearance

Note:

When the arrow of rear
brake indicator lay in
the arrow of left crank-
case,change the brake
lining.



(12)Wheel:

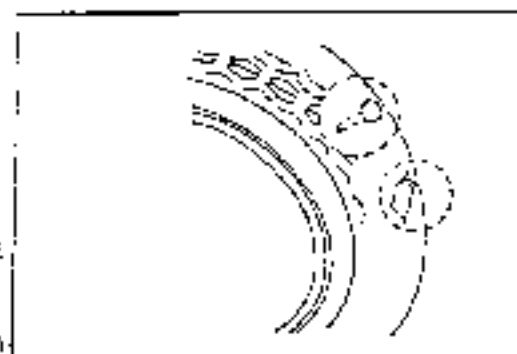
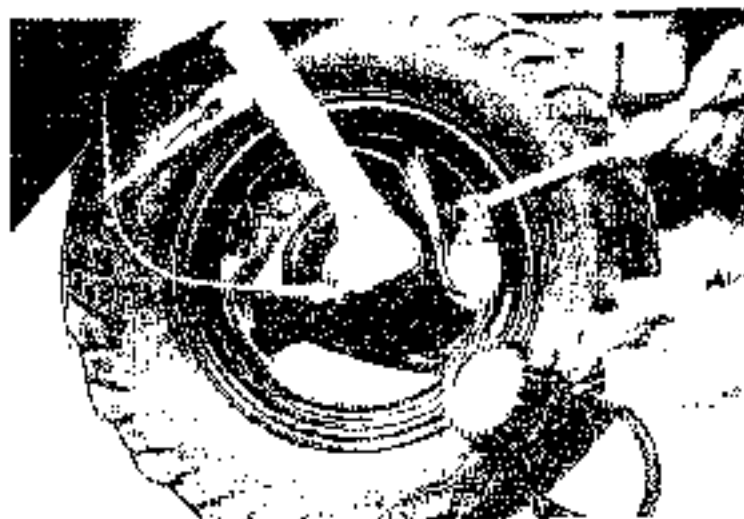
1. Check the wheel pressure
Notice:

check the wheel before running

2. Wheel pressure:
front wheel:1.20kg/cm²
rear wheel:1.50kg/cm²
3. Wheel dimension:
front wheel:120/90-10
rear wheel:135/90-10
4. Check is there any impure object in the wheel gap.
5. Check the depth of wheel stripe
6. Depth(front & rear):
According to mark of tyre
"▲" indicating change new tyre

Note:

1. Check and adjust the wheel pressure at it is too low. Adjusting the pressure according to the carrier > driver > passenger > accessories and cruise speed.
2. Proper loading is very important for handling > riding > braking > performance and safety. Can not load any unfasten parcel. Loading the weighties parcel on the central of vehicle, balancing on the both side.
Adjust proper load and check the wheel pressure. The total weight of carrier > driver > passenger and accessories can not overload than the limit of approved weight. Operating the overload vehicle is easy to cause wheel damage and accident.



四、Dismantling, maintaining, repairing and assembling operation:

- (1) Lubrication system
- (2) Engine dismantling
- (3) Cylinder head, cylinder, piston
- (4) AC Alternator flywheel magnets
- (5) Drive pulley, starter, clutch, driven pulley
- (6) Final transmission mechanism
- (7) Crankcase, crank shaft
- (8) Carburetor
- (9) Chassis cover
- (10) Steering column, front wheel, front damper, front fork
- (11) Rear wheel, rear brake, rear damper
- (12) Fuel tank, oil tank

(1) Lubrication system:

- 1.lubrication system diagram.
- 2.troubleshooting.
- 3.removing oil pump.
- 4.checking oil pump.
- 5.assembling oil pump.
- 6.releasing air in the oil pump.

1. Lubrication system diagram



2. Troubleshooting.

- A. The exhaust with too much white fume, carbon collected in spark plug:
 - a. the adjustment of oil pump is not proper. (too much oil)
 - b. the quality of oil is not good.
- B. Engine overheating:
 - a. the adjustment of oil pump is not proper. (lack of oil)
 - b. the quality of lubrication oil is not good.
- C. Piston seize
 - a. the adjustment of oil pump is not proper, or pipe is blocked.
 - b. there is air in the oil pump system.
 - c. oil pump is out of order.
- D. The oil pipe from oil tank to oil pump is blocked.
 - a. the air hole of oil tank cover is blocked.
 - b. the oil tank filter net is blocked.

- Notice: 1. When removing the oil pump, do not drop any object unexpected to the oil pipe.
2. if there is air in oil pipe, release it.
 3. Oil pump locking torque: 0.8-1.2kg-m.

3. Removing oil pump

Removing when the oil pump and crank case outer is clean.

- a. Remove the luggage and rear bracket.
- b. Remove the input/output oil pipe.
- c. Remove control cables of oil pump.

Take out the oil pump by removing the locking screw on oil pump.



4. Checking oil pump.

Removing oil pump and check:

- a. O-ring is distorted or not.
- b. contact part of crankcase is injured or not.
- c. Oil pump body is injured or not.
- d. the movement of control lever is free or not.
- e. the gears are injured or not.
- f. check seal is oil leakage or not.

Avoid dividing the oil pump into part; it won't work if it is divided into part.



5. Assembling the oil pump

- a. Assemble the oil pump as the opposite above procedure.

O-ring of oil pump should lubricated by grease of oil, then place on crankcase.

The contact part of oil pump and crankcase should be assembled firmly avoid skew assembly

The gears of oil pump should be lubricated by grease.

- b. Oil pump screw should be tightened definitely.

After assembling, checking the following:

- a. the adjustment of control cables.
- b. Is there air in oil pipe.
- c. the oil leakage at any location.

6. Releasing air in the oil pump.

a. If there is air existed in oil pipe, it will cause engine lubrication trouble.

b. releasing air operation is oil pipe and oil pump releasing air, so firstly release air of oil pipe.

Pour specific amount of oil to oil tank.

Place dry cloth under the oil pump.

Remove oil pipe.

Use grease injector, pour oil to oil pump inlet pipe part, let it full of oil, and let oil pipe full of oil, then put it in oil pump. After assembling, check definitely the air is in oil pipe or not.

(2) Dismantling & assembling of plastic parts

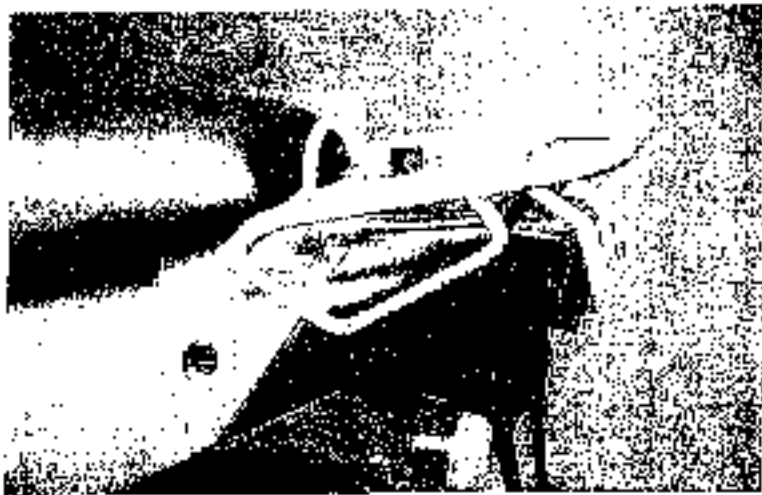
- (1) Screwing out the 3 screws of front windshield → take off the front protector.



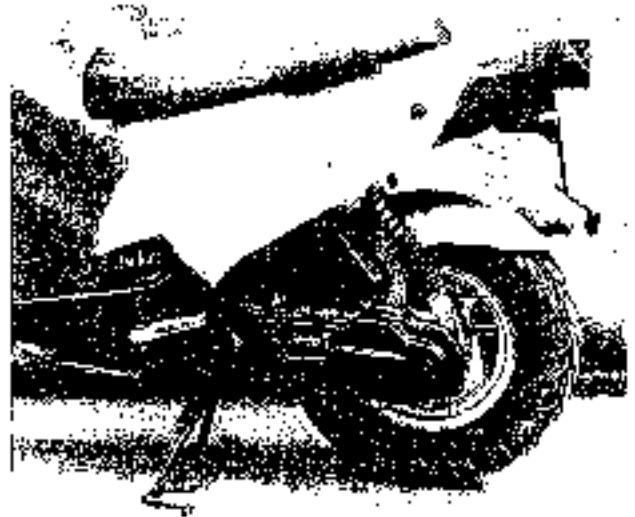
- (2) Screwing out the 5 screws of windshield & front inner cover.
→ take off the windshield.



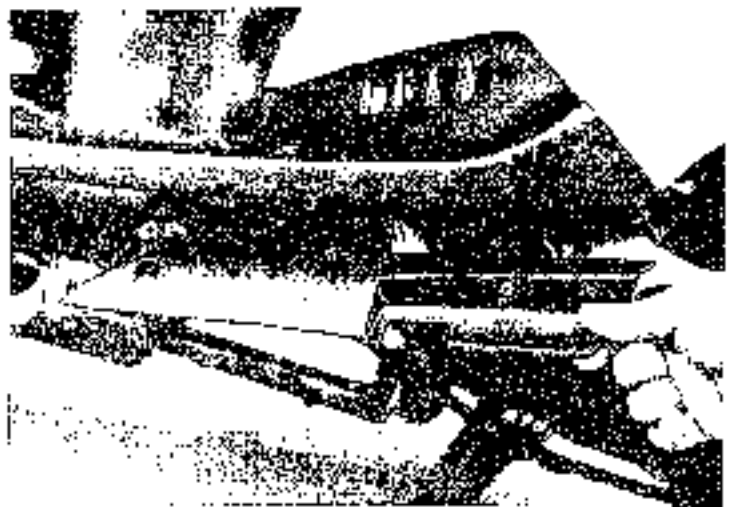
(3) Screwing out the 4 screws of the rear protector & body cover → take off the rear protector.



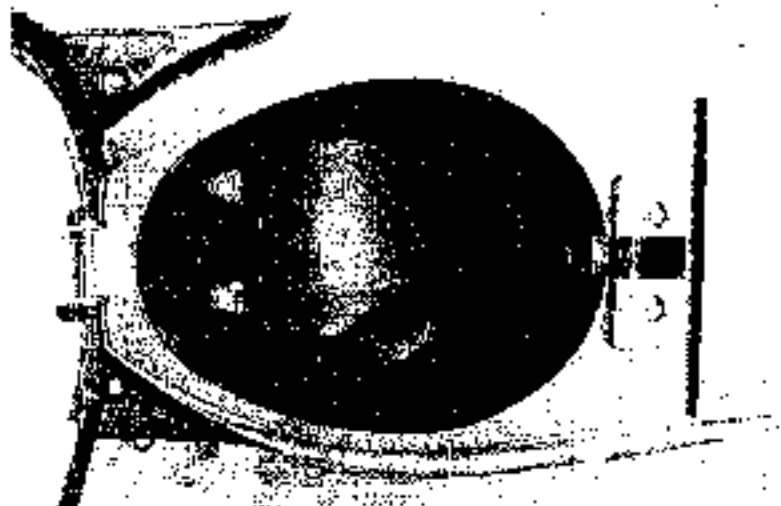
(4) screwing out the each 2 screws of right & left strips.



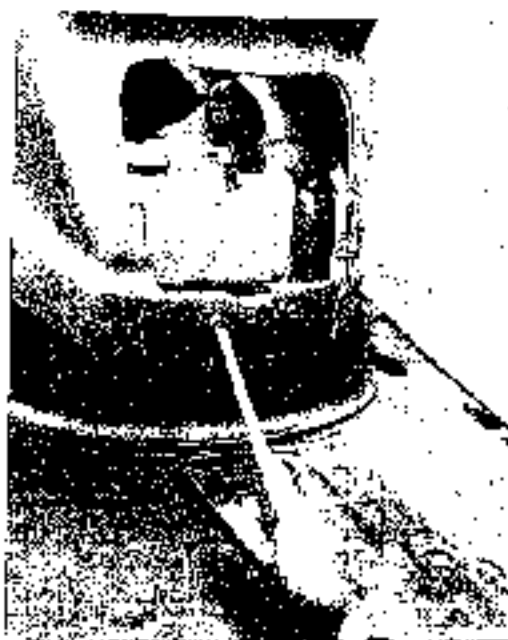
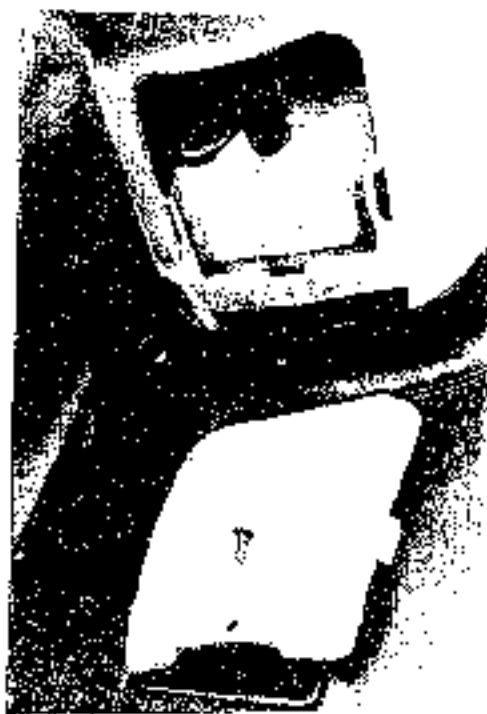
(5) Take off the right & left strips.



(6) Open the seat, screwing out the 4 screws of the luggage box. → take out the luggage box.

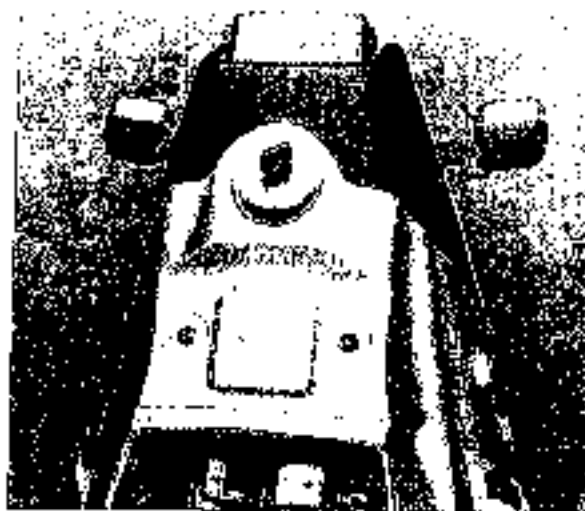


(7) Remove the screws of side cover and front cover → take off the front cover

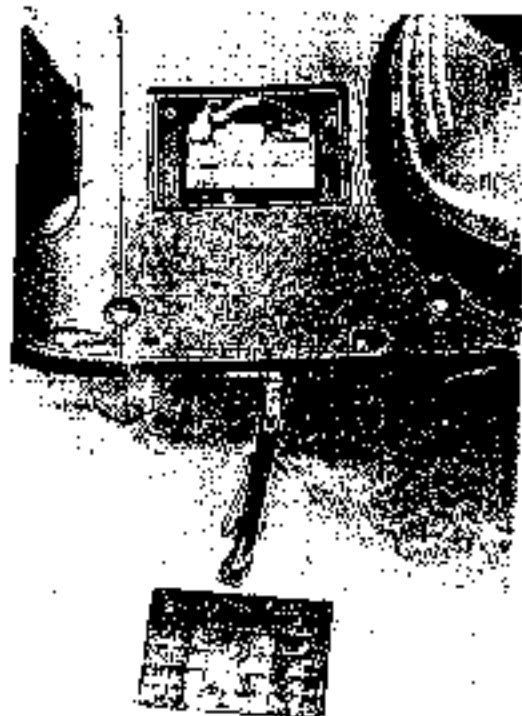


(8) Remove the 2 screws of side cover.

(9) Open fuel tank, and take out → remove the 2 screws of the side cover.

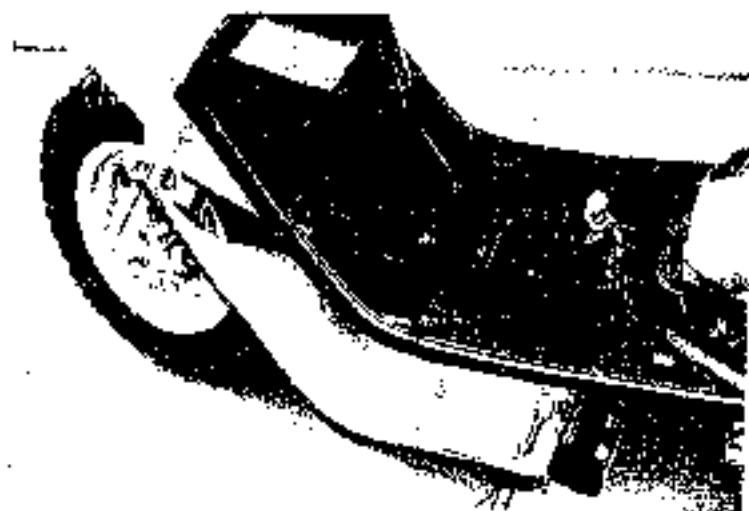


(10) Remove the right & left screws of side cover → take off the side cover.



(11) Remove the step floor & the 3 screws of the cover of battery → take off the cover.

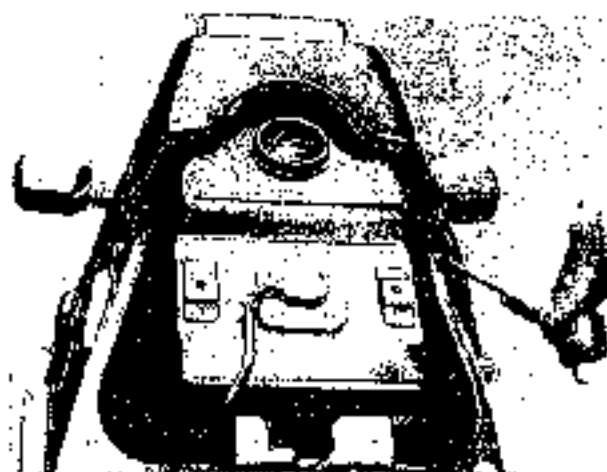
(12) Remove the battery → negative first then positive (B) remove the screws of the fender → take off the fender.



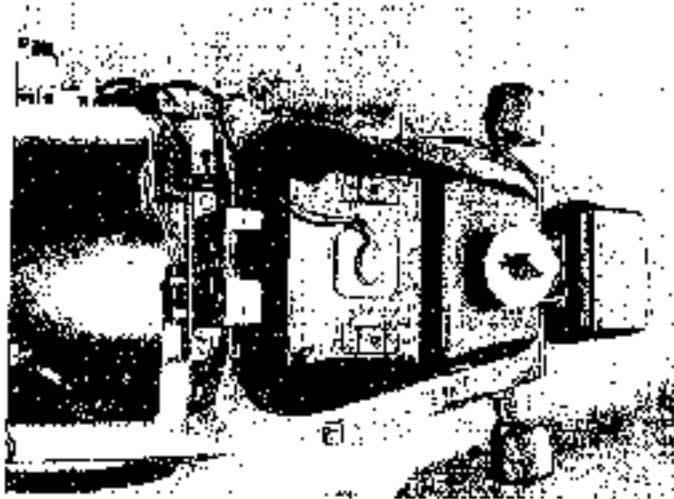
(13) Remove the 3 screws of front inner cover. → take off the front inner cover.



(14) Remove the 2 screws of each side rear lamp cover.



(15) Take off the rear lamp cover



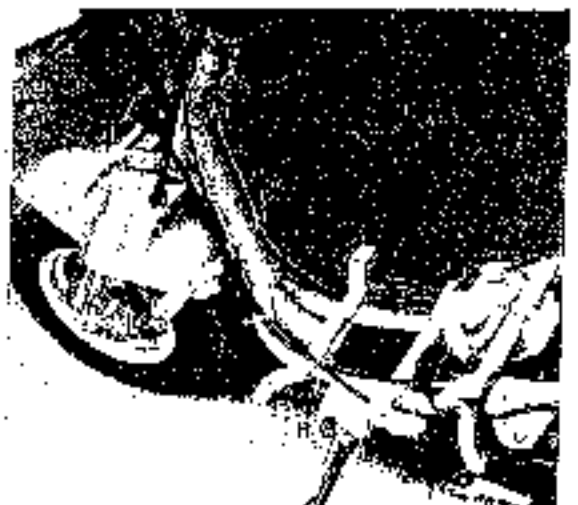
(16) Remove the 2 screws of step floor.



(17) Take off the step floor, re-assembling as the opposite procedure of disassembling.

Locking torque: M6=0.7-1.1 kgf-m
M5=0.35-0.5 kgf-m

Note: avoid clamping & scraping the cables or pipes by the plastic holding.



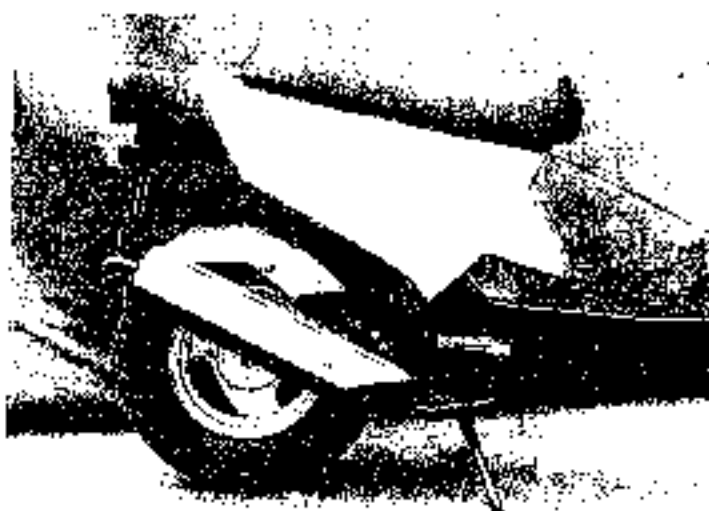
(3)Dismantling engine:

A.dismantling engine

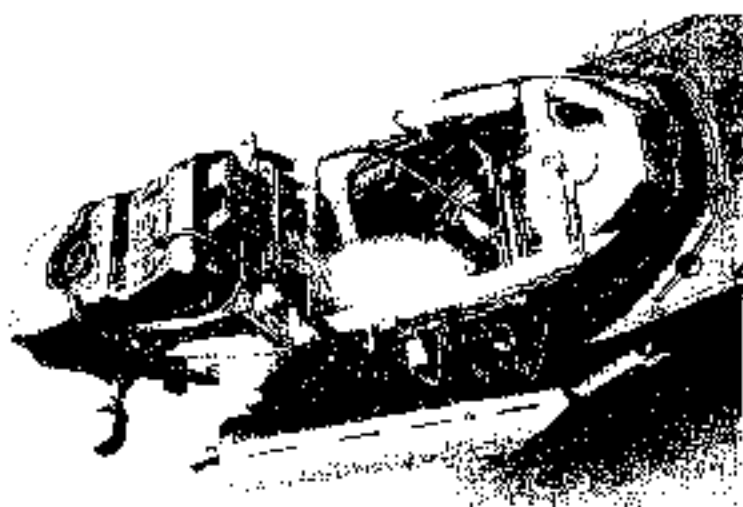
B.Installing engine

A Dismantling engine.

1. Remove Rear bumper
Luggage tank
side cover



2. Remove vacuum pipe
and fuel pipe and
oil pipe



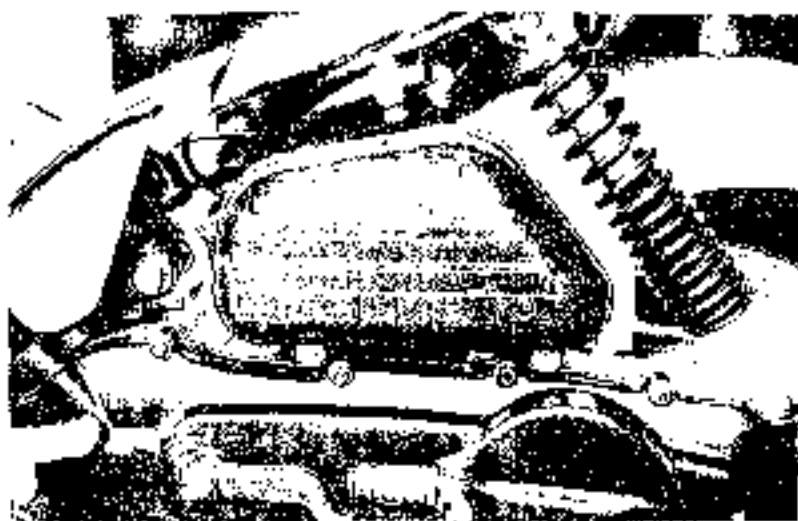
3. Remove the electric plug of
AC magneto starting motor



4 Remove cable of auto
choke and carburetor



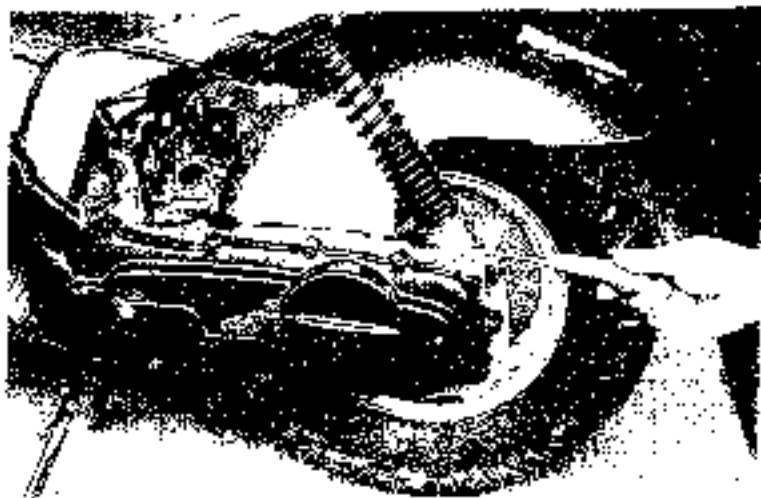
5. Remove breather pipe



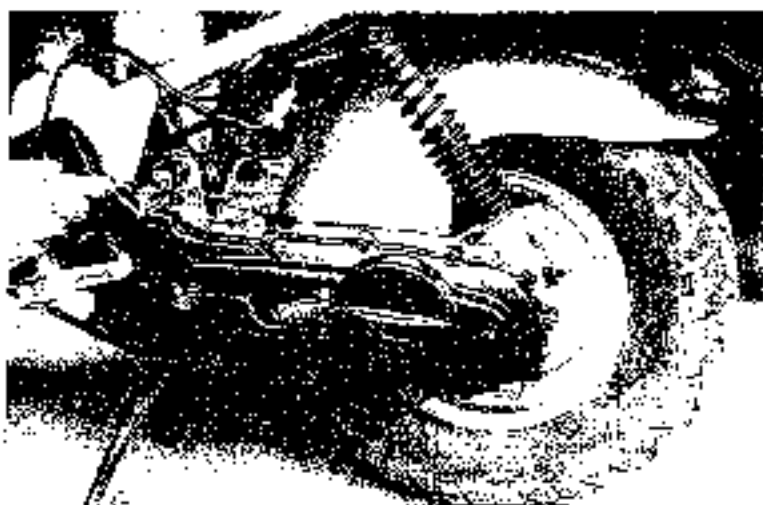
6. Remove cap of spark plug



7. Remove rear damper bolt



8. Remove engine suspension nut



9. Remove nut of rear brake cable



1G.Remove the engine



B Installing engine.

- 1.Install engine follow the opposite above procedure.
 - 2.Locking torque:
Y8:2.0~3.0kgf.m
Y10:3.0~4.0kgf.m
Y12:5.0~6.0kgf.m
- After installing,inspect and adjust the following:
- 1.the wire connecting.
 - 2.throttle cable,oil control cable.
 - 3.let out the air in oil pump.
 - 4.rear brake adjustment.

(4) Drive pulley, starter, clutch, driven pulley

- A. troubleshooting
- B. Measurement data
- C. drive pulley
- D. Starter
- E. Clutch, driven pulley

A. Troubleshooting:

- a. Engine starts, but vehicle don't move.
 1. driving belt worn out
 2. driven plate worn out
 3. clutch lining worn out
- b. The vehicle stops or tremble when running.
 1. clutch hammer spring cracked or broken.
- c. Can't reach high speed, no pick-up
 1. driving belt worn out.
 2. driven plate spring distortion.
 3. hammer roller worn out.
 4. driven plate abnormal.

Note:

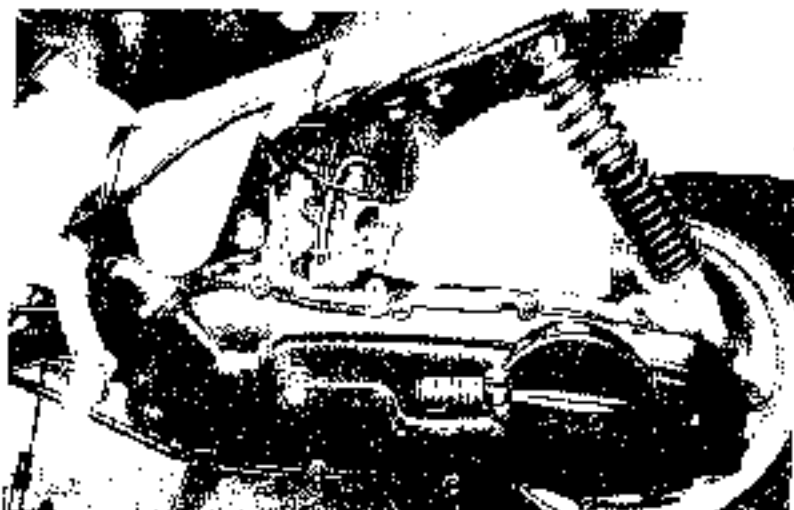
No grease and oil should be distributed over driving belt and driven plate.

3. Measurement data

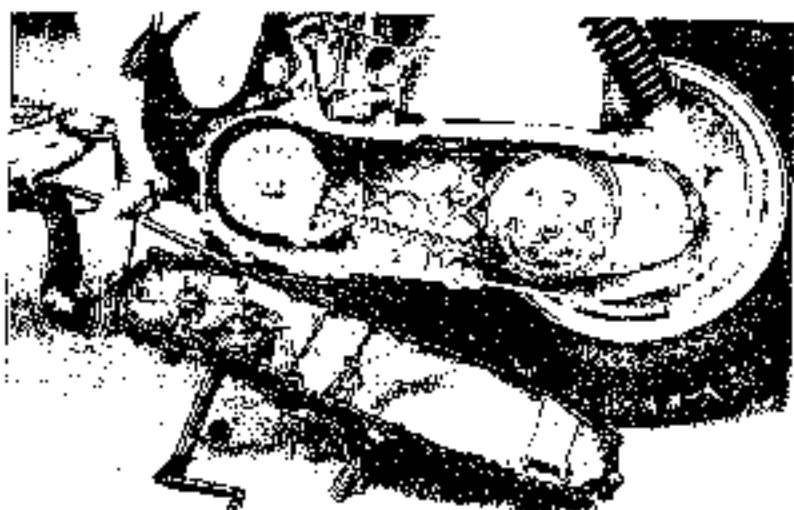
Item	standard value	limit of use
the bush inner dia of slide driving plate	20.035~20.035	20.123
driving plate flange outer dia	19.960~19.974	19.911
hammer roller outer dia	15.992~16.008	15.5
clutch cover	107~107.2	107.5
driving plate spring free length	87.5	82.5
driving plate sets outer dia	33.905~33.985	33.940
slide driven plate inner dia	34.000~34.025	34.070

(C)Driving pulley.

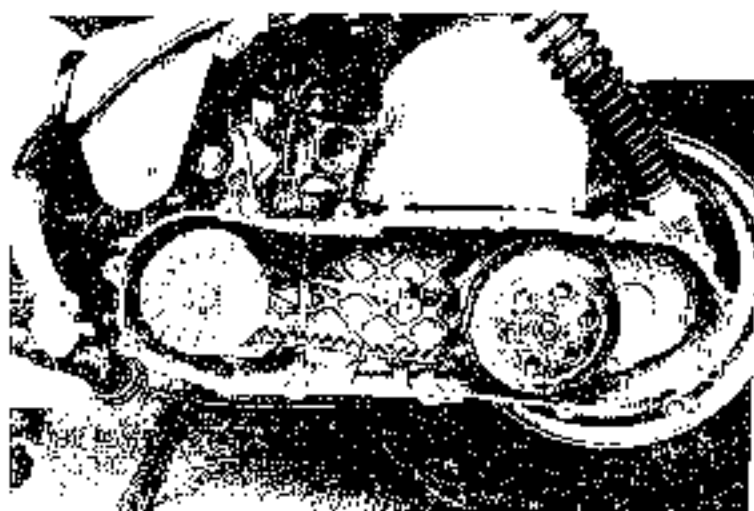
1.Remove the 10 screws of left cover.



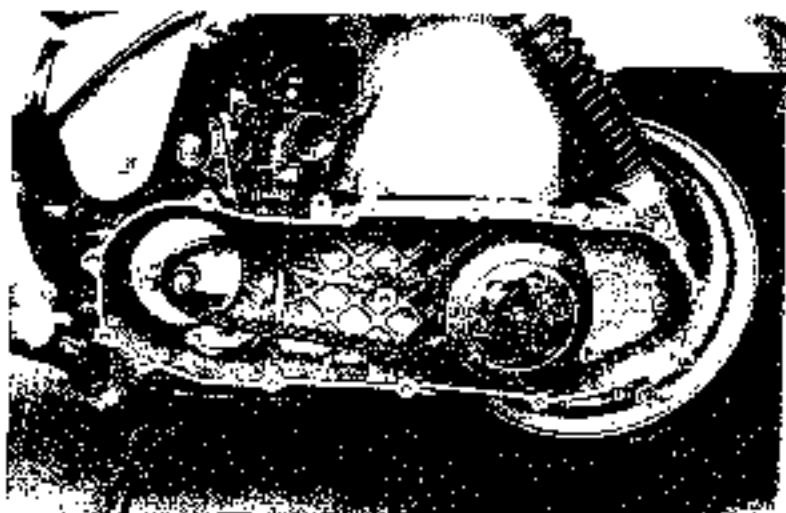
2.Take off the left cover



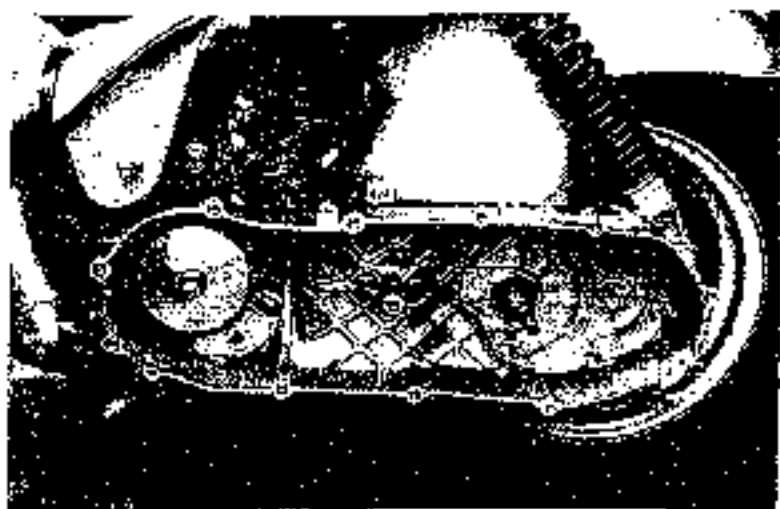
3.Remove the fixing rod of clutch.



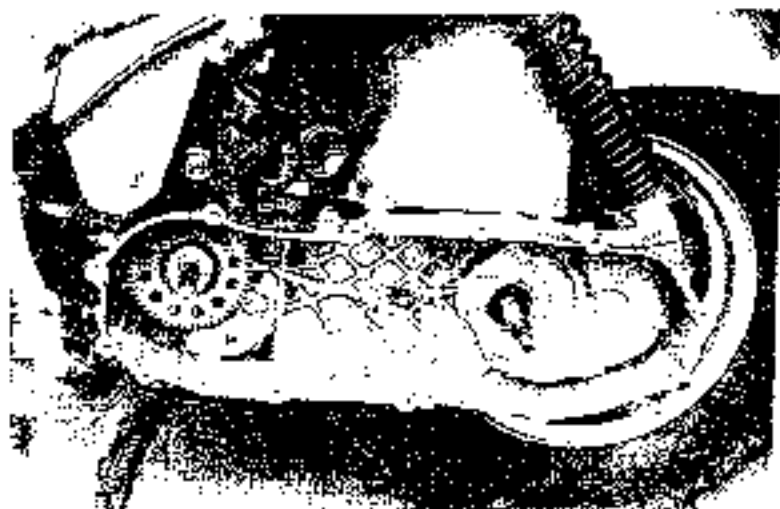
4. Take off the ramp plate.



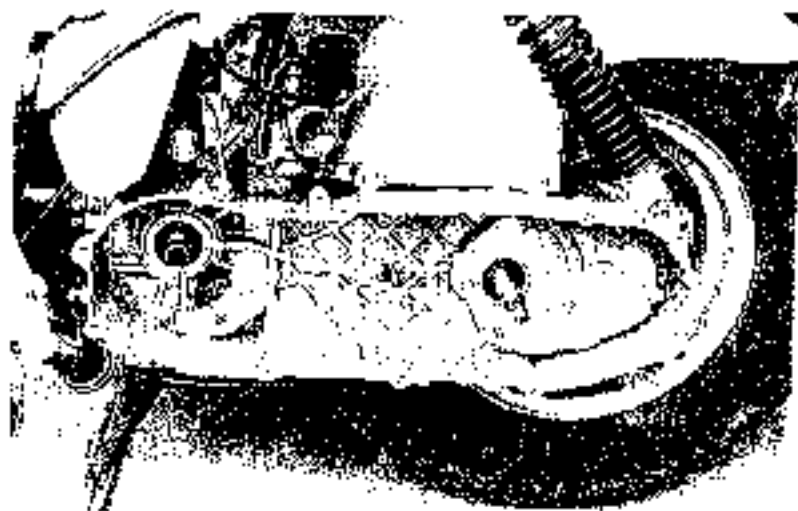
5. Take off the belt & rear clutch.



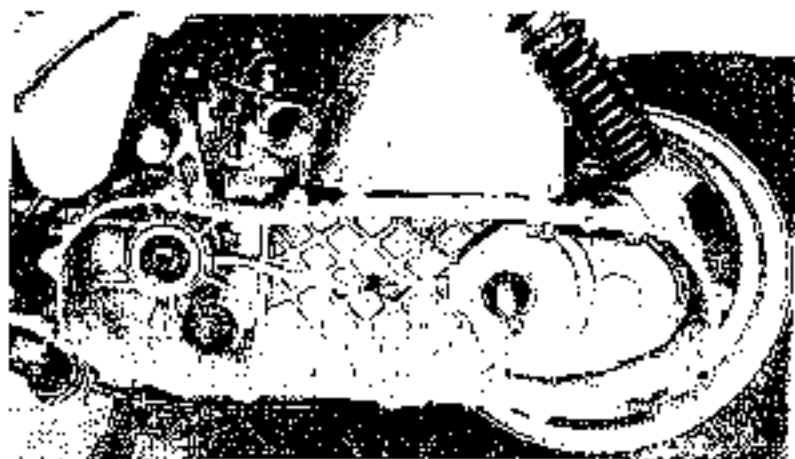
6. Take off the driving plate.



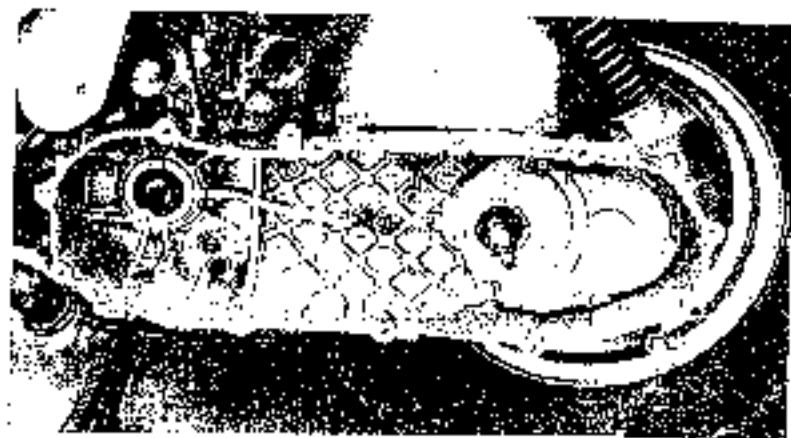
7. Take off the driving gear starter set.



8. Remove the driving gear locking plate.



9. Take off the idle gear.



10. Assemble driving pulley follow the opposite procedure of dismantling.

Locking torque:

X10 nut of driving pulley:

3.2~4.0kg.m

X10 nut of clutch outer:

3.5~4.0kg.m

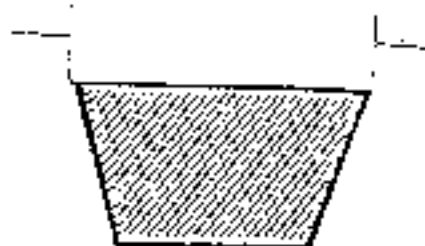
11. Checking driving belt

(1) Check driving belt if cracked, rubber and fiber is loosen, also check if is abnormal or worn out.

(2) driving belt width:

limit of use change it as it below 16.5mm.

(3) Remove slide driving plate sets.



12. Disassemble slide driving plate sets:

(1) Remove bush of slide driving plate.

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

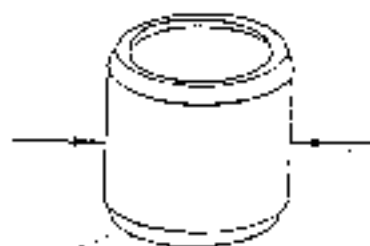
(3) Remove RAMP plate.

(4) Remove hammer roller.

13. Checking.

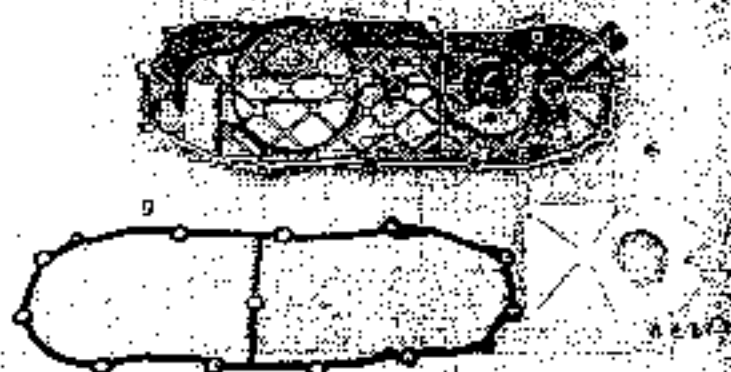
(1) Check the wearing degree of hammer roller.

limit of use change it as it is below 15.5mm.



B. Starter Dismantle

1. Dismantle left crankcase cover
2. Loose hexagon nut, then remove the starter lever.
3. Loose two screws of space plate
4. Loose starter spring from start returning positioner.
5. Remove driven gear comp. of kick starter.
6. Remove the retaining ring C type.
7. Remove spindle comp. of kick starter.



B. Checking starter

- a. Check the wearing degree of outer diameter of spindle comp., inner diameter of bush and gear.
- b. Check the wearing degree of shaft of driver gear comp., gear sets and ratchet.

9. Assembling the starter

Assemble the starter follows the opposite procedure of dismantling.

Note:

- ① One side of the tension spring must be hooked on the trough of sector gear certainly another side must be hooked on the cylinder inside the left crankcase.
- ② Put some grease in every shaft and gear sets before assembly.

E. Clutch driven pulley

1. Remove the clutch

- a. Remove left crankcase cover.
- b. Remove driving plate.
- c. Remove driving belt.

Remove 10mm nut, then remove clutch.

2. Assemble the clutch follows the opposite procedure of dismantling.

locking torque:

$\times 10: 3.5 \sim 4.0 \text{kg}\cdot\text{m}$

3. Checking clutch.

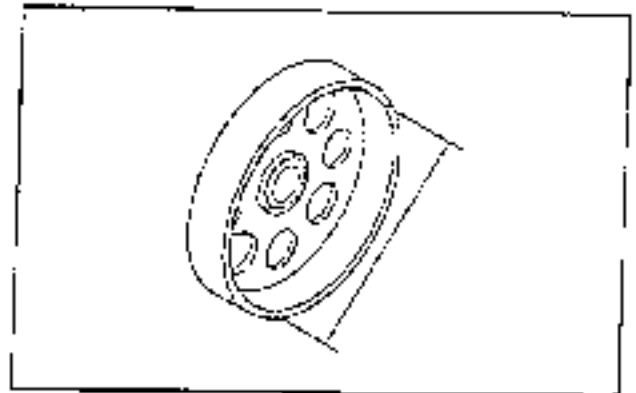
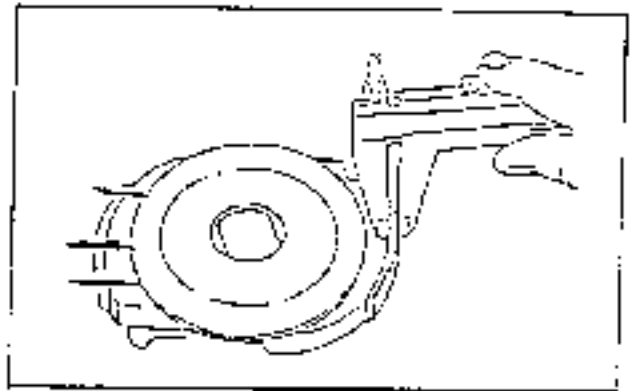
Dismantling tool

- a. Check clutch driving face.
Check clutch cover wearing condition.

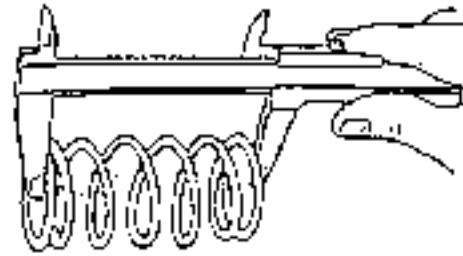
Inner diameter measurement.
limit of use: change it as it above 107.5mm.

- b. Check clutch lining wearing condition: lining thickness measurement.

limit of use: change it as it is below 2.5mm.



- c. Check driving spring free length: standard: 87.9mm
limit of use: change it as it is below 82.9mm.
- d. Check wearing condition of driving plate sets.
Outer diameter measurement:
limit of use: change it as it is above 33.940mm.
- e. Check wearing condition of slide driver 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 head , cylinder , piston :

- A.troubleshooting
- B.the operation notice
- C.the operation data
- D.dismantling cylinder head
- E.checking cylinder head flatness
- F.cleaning out the carbon in combustion chamber
- G.dismantling cylinder
- H.dismantling piston
- I.checking cylinder,piston
- J.installing cylinder,piston

A. Troubleshooting.

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

1. Cylinder washer cracked.
2. Spark plug not being locking well.
3. Piston ring worn out or cracked.
4. Cylinder, piston worn out or injured.
5. Reed valve is out of order.

b. compression pressure is too high, engine overheating, knocking: cylinder head, piston tip too much carbon accumulated.

c. piston noise

1. cylinder, piston worn out.
2. piston pin hole, piston pin worn out.
3. connecting rod small end, bearing worn out.

d. piston, cylinder noise

1. piston ring worn out, cracked.
2. cylinder worn out, injured.

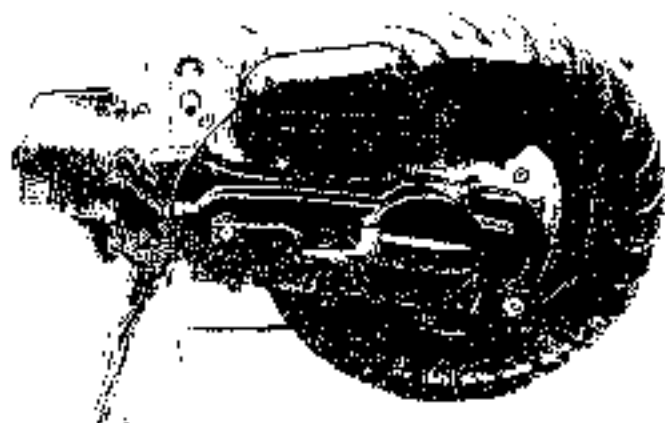
C. The operation notice.

1. clean before operation to avoid other object drop in engine
2. the connecting washer must be washed cleanly.
3. dismantle cylinder and cylinder head, don't injure the contact surface.
4. cylinder inner surface and piston outer face can't be injured
5. the dismantling part should be washed cleanly when checking, the contact surface should lubricate by specified oil.

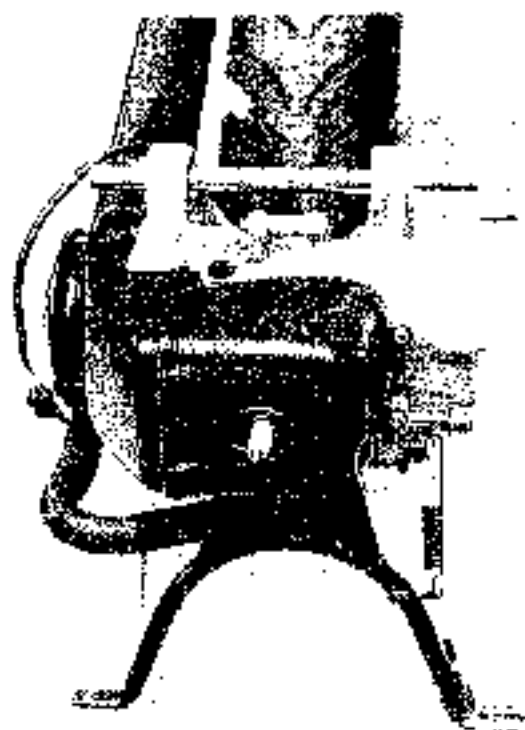
D. The operation data information

Item	Standard value	Limit of use
Cylinder head straightness		0.10
Piston outer diameter from the lower end of piston 12mm above the skirt edge.	39.950-39.970	39.895
Clearance between cylinder and piston	0.050-0.060	0.100
Piston pin inner dia	10.002-10.008	10.025
Piston pin outer dia	9.994-10.000	9.970
Clearance between piston pin and pin hole	0.004-0.018	0.030
Piston ring gap. (1st ring/2nd ring)	2.15 0.35	3.70
Connecting rod small end inner dia	13.996-14.007	14.025
Cylinder bore	39.995-40.015	40.050

3. Dismantling cylinder head:

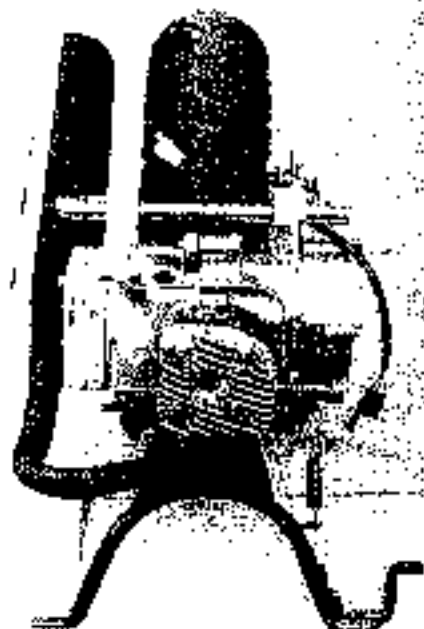
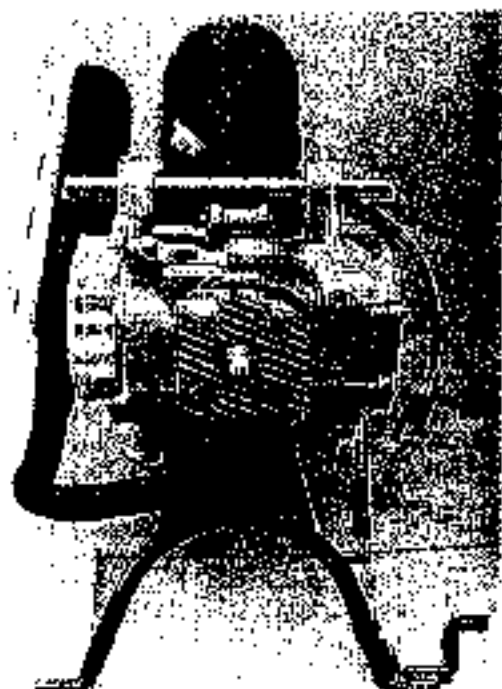


1. Remove the engine

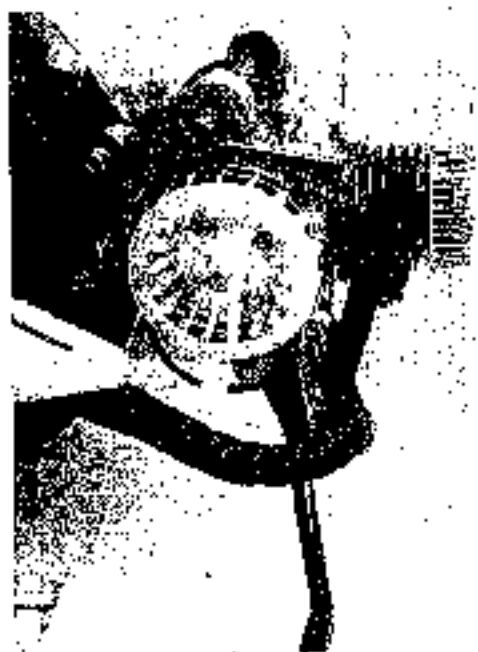


2. Remove the fan cover.





3. Remove the cooling coil.
4. Remove 4 bolts on the cylinder head, then cylinder.
5. Assemble the cylinder head follow the opposite above procedure.
locking torque:
MG:1.0~1.2 kg-m



F. Checking flatness of cylinder head.

Check the flatness of every contact surface.

Limit of use: If it exceeds 0.01mm change a new one.



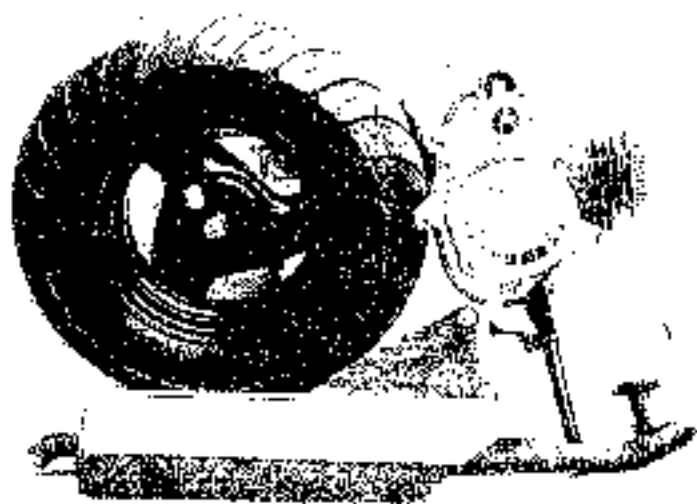
G. Cleaning out the carbon in combustion chamber.

Clean out the carbon collected in combustion chamber.

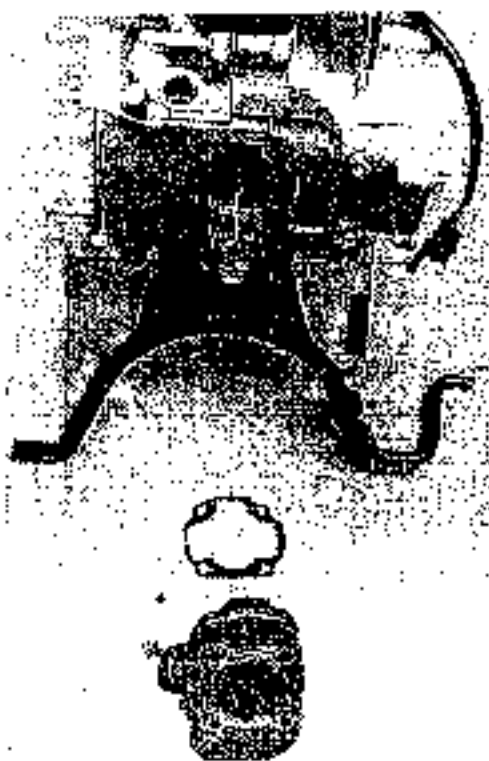
Do not injure the combustion chamber and contact surface of cylinder during cleaning operation.

H. Dismantling cylinder

1. Loosen two nuts of muffler, then remove the muffler after remove the cylinder head.

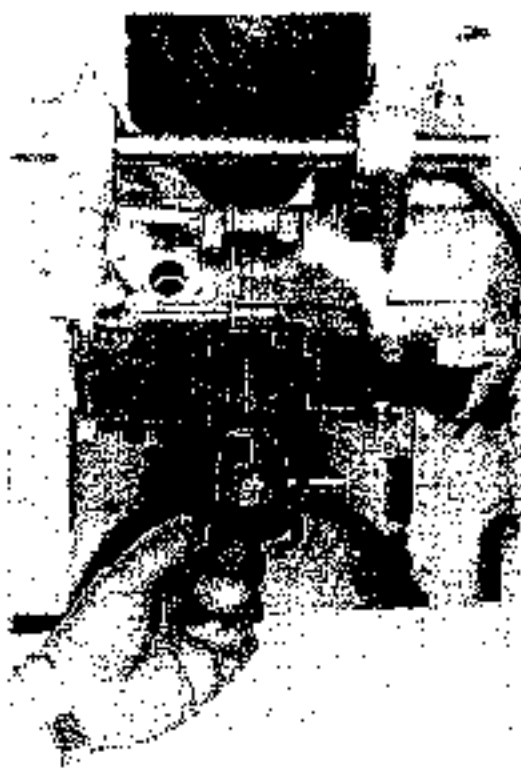


2. Remove the cylinder.

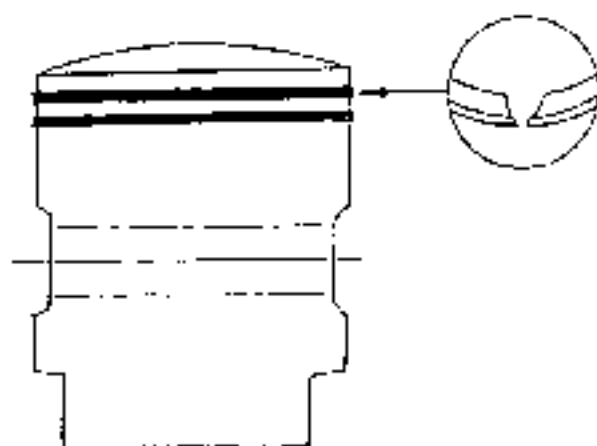


1. Dismantling piston:

1. Remove piston pin clip,
then remove piston pin
and take off the piston.



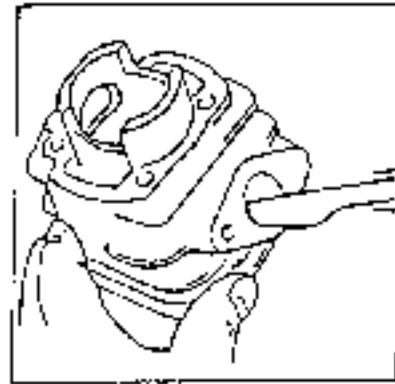
2. Open the piston ring,
remove piston ring from
the opposite direction
gap.
3. Remove the 1st ring, then
2nd ring.



3. Checking cylinder, piston:

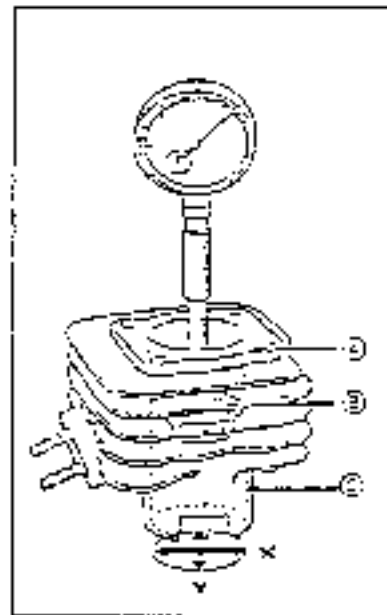
1. Check the worn and injure of contact surface of cylinder and piston.
2. Clean out the carbon in cylinder exhausting port.

Be careful not to injure inner surface of cylinder.



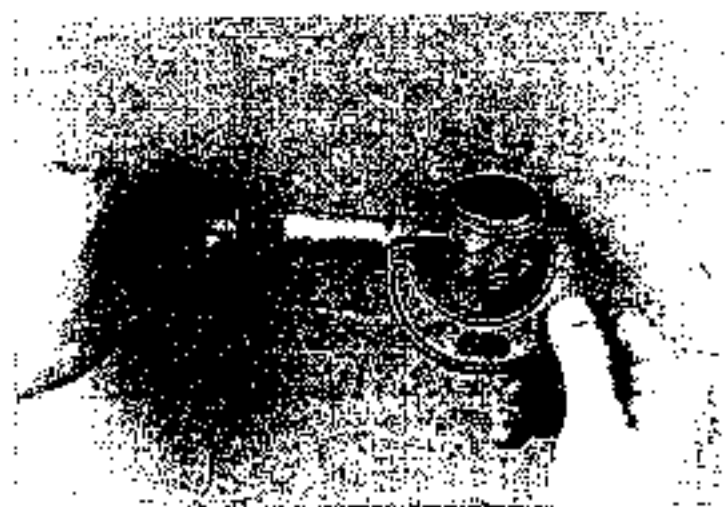
3. Cylinder bore measurement:

- (1) Measure each point (A)(B)(C) orderly, and in X.Y. direction to find the smallest value.
- (2) Limit of use: change it as above value exceeds 40.050mm.



4. Piston outer diameter measurement:

- (1) Measure from the lower end of piston, 12mm above the skirt edge.
- (2) Limit of use: change it as above value is less than 39.855mm.
- (3) Calculate the clearance between cylinder and piston.
limit of use: change it as it exceeds 0.100mm.



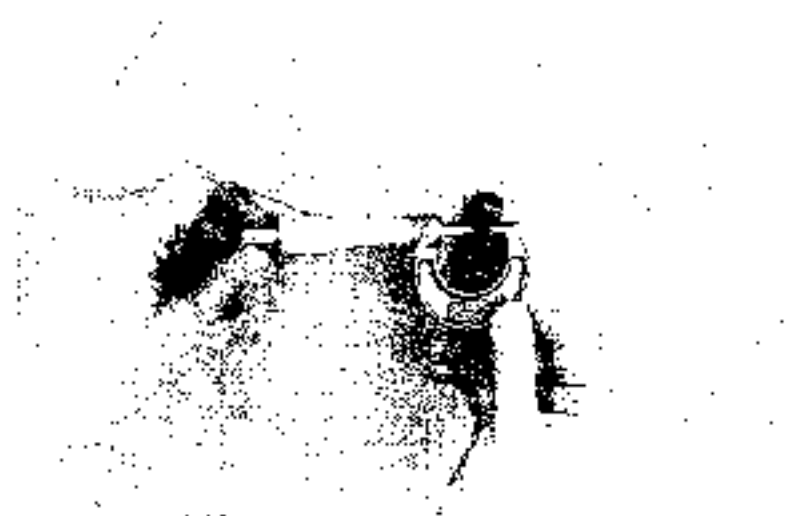
5 Piston pin hole inner diameter measurement:

limit of use: change it as it is more than 10.029mm



6. Piston pin outer diameter measurement:

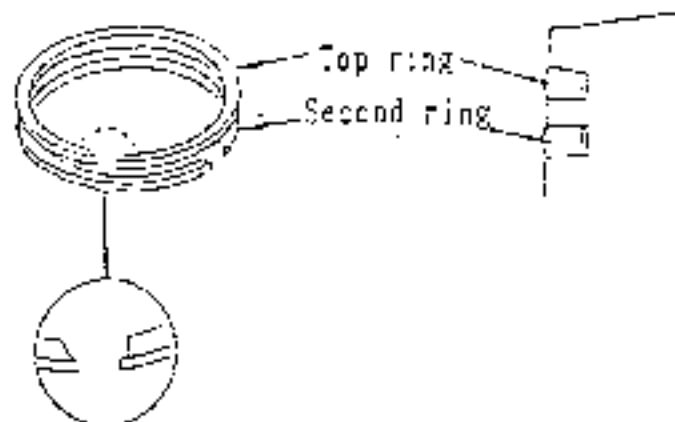
limit of use: change it as it is less than 9.970mm



7 Checking piston ring:

measure piston ring gap:

limit of use: change new one
when the first ring and second
ring are over 0.4mm.

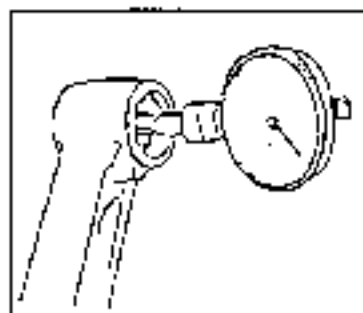


With piston and cylinder wall
horizontal direction, press the
piston ring into cylinder, then
measure the gap.

B Checking connecting rod small end

(1) place piston pin, bearing into connecting rod small end to check the slackness of piston pin

(2) measure connecting rod small end inner dia. limit of use change a new one as it is over 14.025mm.



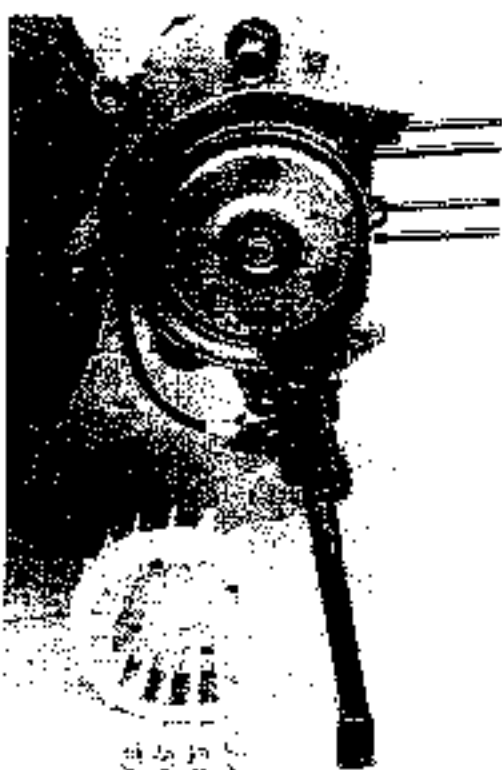
- X Installing piston,cylinder:
1. Place the piston ring into second ring ditch, then install the piston ring into first ditch.
 2. Piston ring should be evenly forced into piston ring ditch. After the assembly, confirm that piston ring sliding surface is at the same height as piston outer surface. If piston ring can't put into ditch, please clean out the carbon in piston ring ditch or in piston ring.
 3. a. piston ring must be installed to correct position.
b. after installing the piston ring, it should be rotated freely.
c. when it is necessary to change new piston ring, change the whole set.
 4. The clearance of the piston ring gap between the lock pin in ring ditch should be even.
a. piston lip mark, must face to exhausting side.
b. lubricate the piston pin, then install it.
 5. Install cylinder, cylinder head as the opposite procedure of disassembling.

(6) A.C. Alternator flywheel magneto :

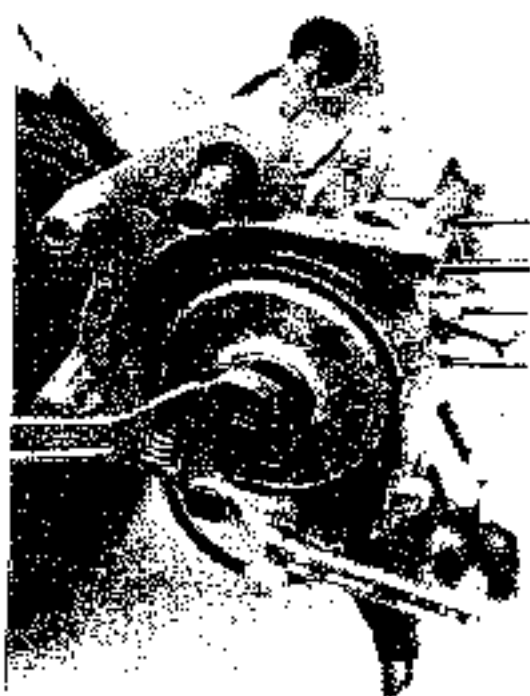
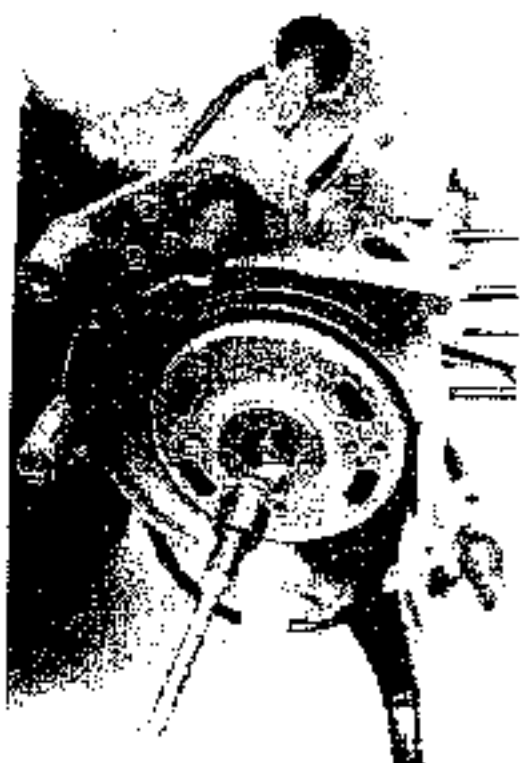
A. dismantling AC alternator flywheel magneto.

B. installing AC alternator flywheel magneto.

A: Disassembling AC alternator flywheel magnetic.



1. Remove fan cover.



2. Remove fan.

3. Remove the AC
flywheel magnets
by special tool.



4. Remove the electric plug of AC flywheel magnets.

5. Remove stator screw, and take off stator.



6. Installing the AC flywheel magnetic follows the procedure opposite the dismantling procedure.

Locking torque:

M6:1.0~1.2kg.m

M10:3.2~4.0kg.m

(7) Final transmission mechanism

- A. troubleshooting.
- B. disassemble the final transmission mechanism.
- C. check the final transmission mechanism.
- D. assemble the final transmission mechanism.

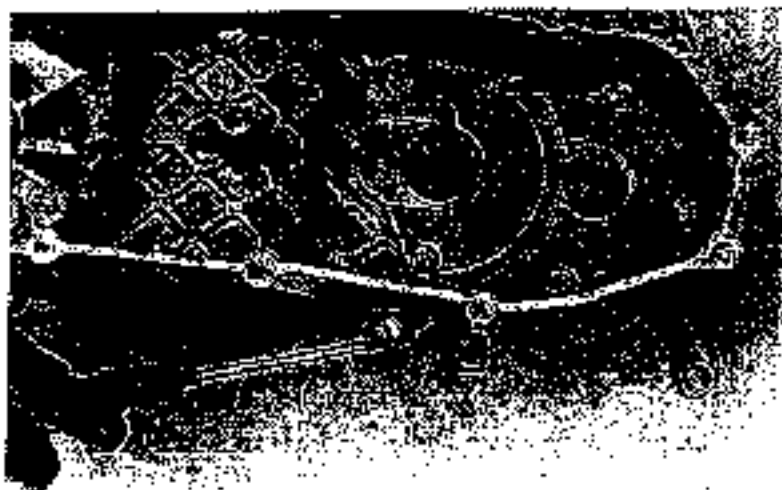
A. Troubleshooting

- Engine can be started, but the vehicle can't move.
 - 1. gear worn out, cracked.
 - 2. gear burnt out.
- noise occur when turning.
 - 1. gear worn out, burned out, gear surface injured.
 - 2. wearing or looseness of bearing.
- Oil leakage
 - 1. Too much oil.
 - 2. seal worn out or injured.

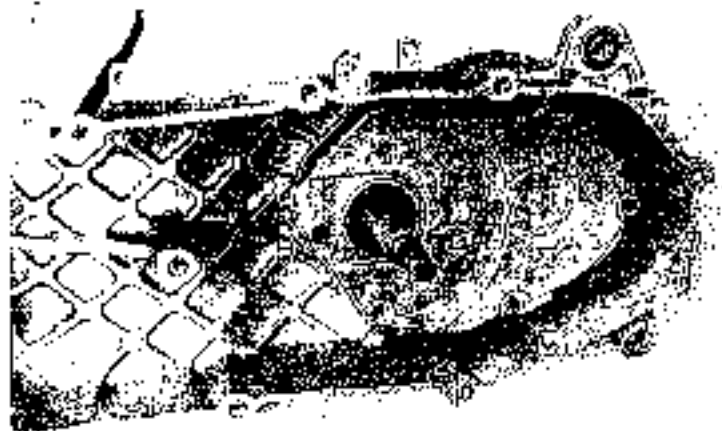
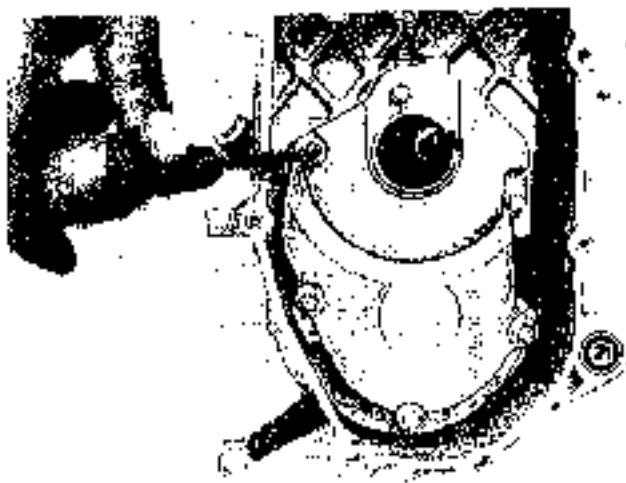
B. Disassemble the final transmission mechanism:

1. Remove the left crankcase.
2. Remove driving plate.

3. Drain the oil in gear box.



4. Remove the bolt in gear box cover take off the gear box.

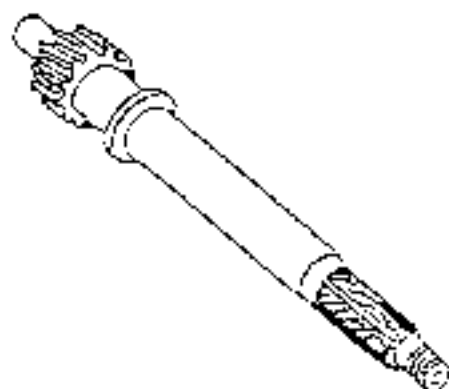


5. Remove final reduction gear and idle gear shaft.
6. Remove driving shaft from gear box.

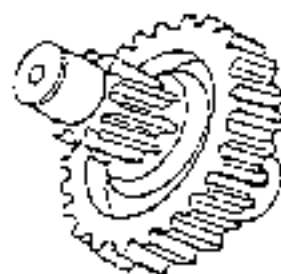


C. Check the final transmission mechanism:

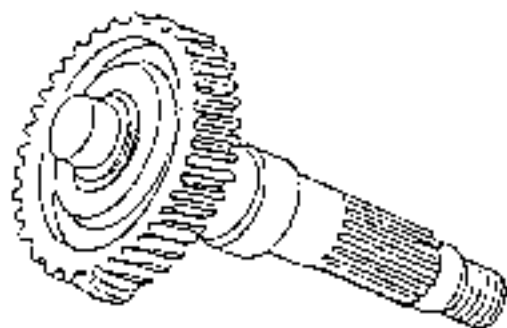
1. Check wearing condition of driving shaft and gears.



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



3. Check wearing condition of final reduction gear.



4. Check wearing condition of
oil seal and shaft.

D. Assemble the final trans-
mission mechanism, please
refer the opposite
procedure of 6isassembly
ing.

Inject 110cc oil (SAE 90)

after locking drain bolt

locking torque: M6 1.0~1.2kg.m

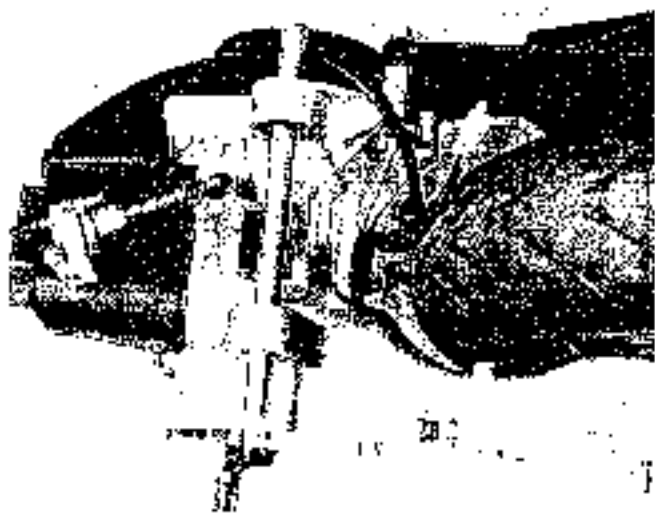
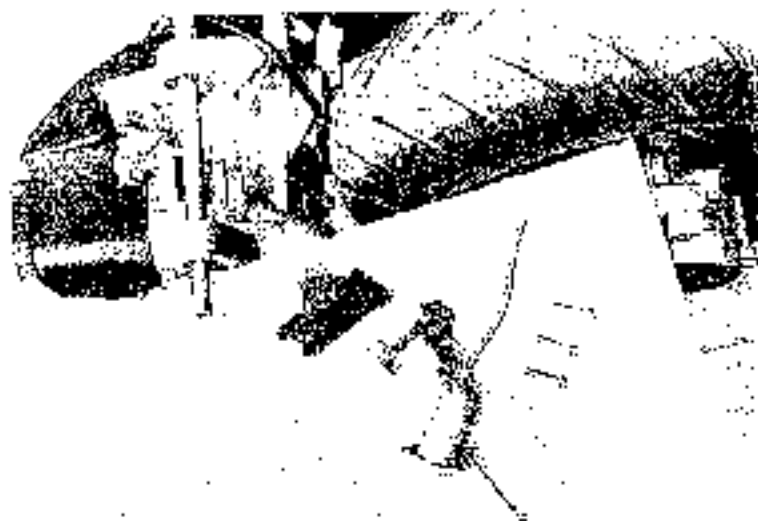
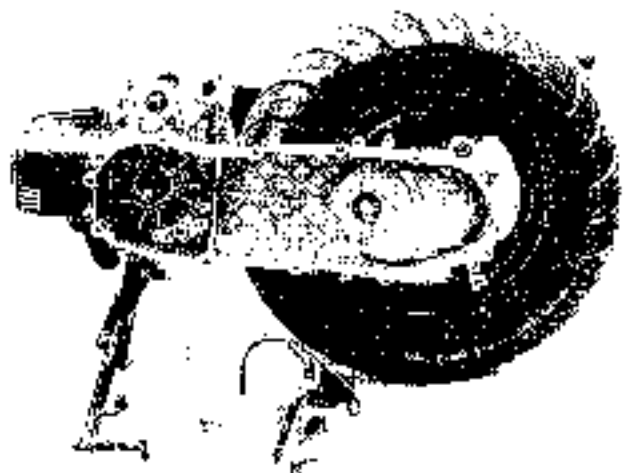
M10 3.5~4.0kg.m

drain bolt M8:1.8kg.m

(8)Crankcase , Crankshaft :

- A. disassembling diagram.
- B. troubleshooting.
- C. data
- D. remove crankcase and crankshaft.
- E. check crankshaft.
- F. assemble crankcase.

A. Disassembling Diagram



3. Troubleshooting.

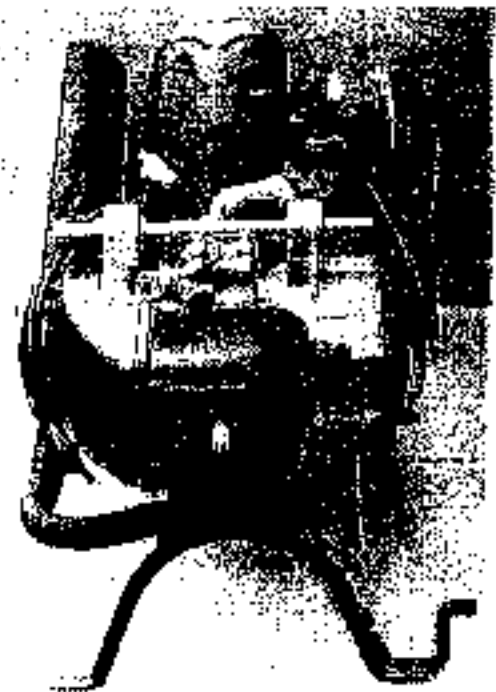
Engine noise:

- 1.The bearing of final transmission mechanism is slack.
- 2.Crank pin bearing is slack
- 3.The bearing of gear box is slack.

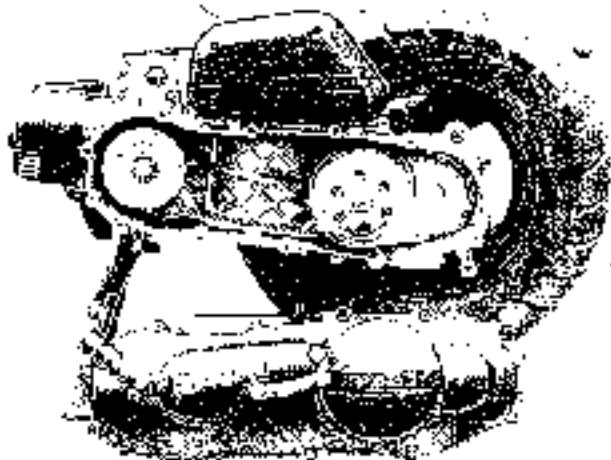
Item	standard value	limit of use.(mm)
Clearance of connecting rod big end axle-direction	0.20-0.50	0.71
Clearance of connecting rod big end radial direction.		0.04
Swingness of the crank shaft journal.	0.03	0.10

D. Remove crankcase and
crankshaft,
remove according to
the following proce-
dure:

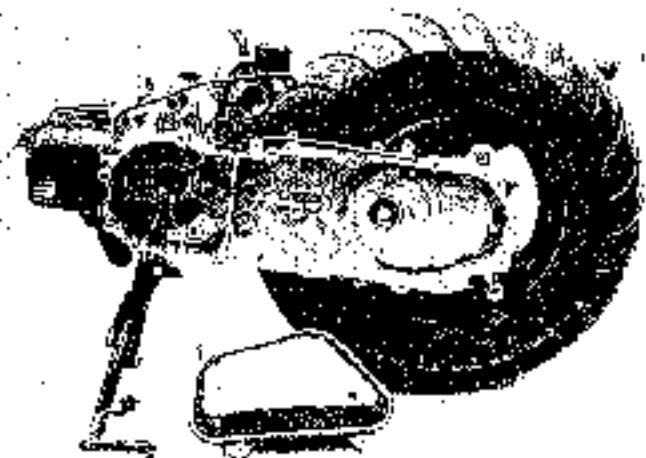
1. remove engine



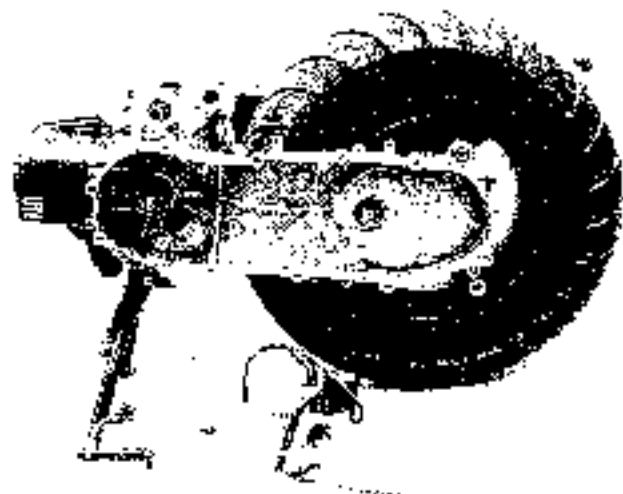
2. remove left E/C case and
air cleaner.



3. remove driving pulley (driving
plate), clutch and belt



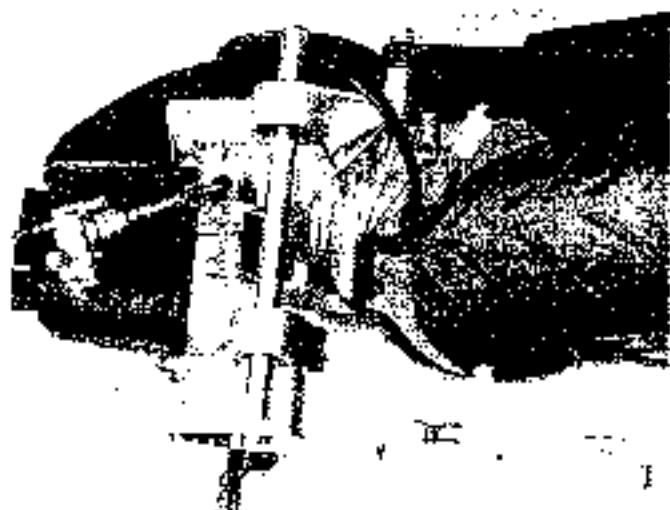
4. remove Carburetor.



5. remove Intake and Reed Valve



6. remove spark plug, fan cover
fan cowl and fan.



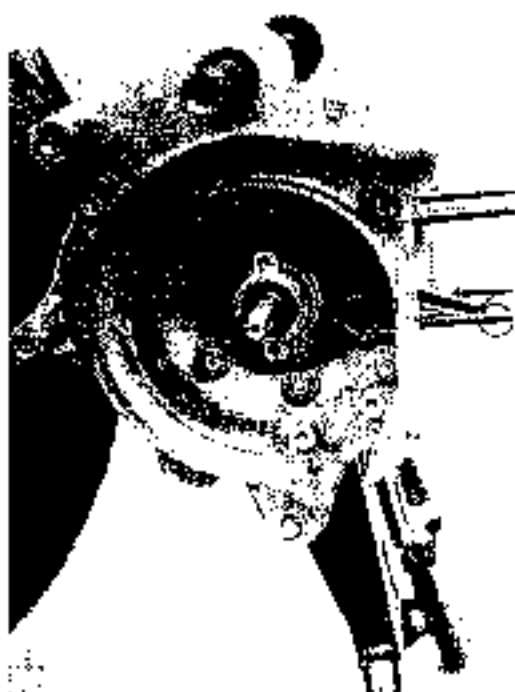
7. remove A.C. flywheel magneto.



8. remove the oil pump
and shaft of oil pump.

9. remove the cylinder head
cylinder and piston.

10. remove the left and right crankcase.



11. remove the central stand, L/R crankcase and take out the crankshaft.

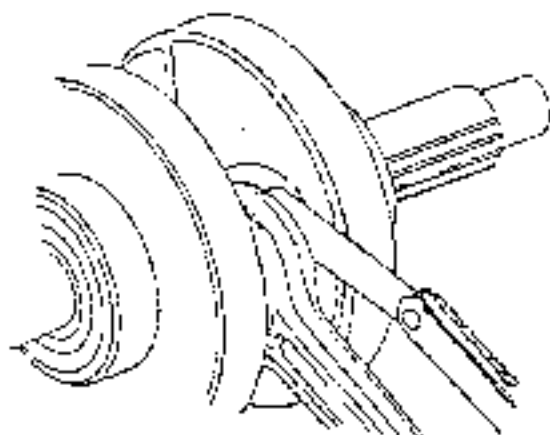


B. Check crankshaft:

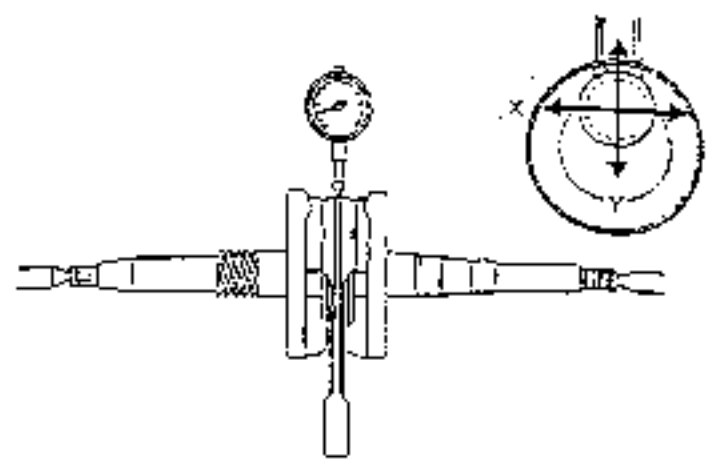
1. measure the clearance between crank webs and con-rod big end.

Limit of use : 0.71mm

change it as above 0.71mm

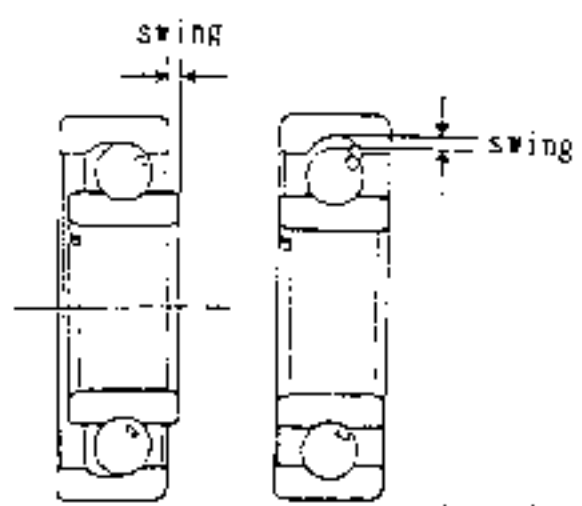
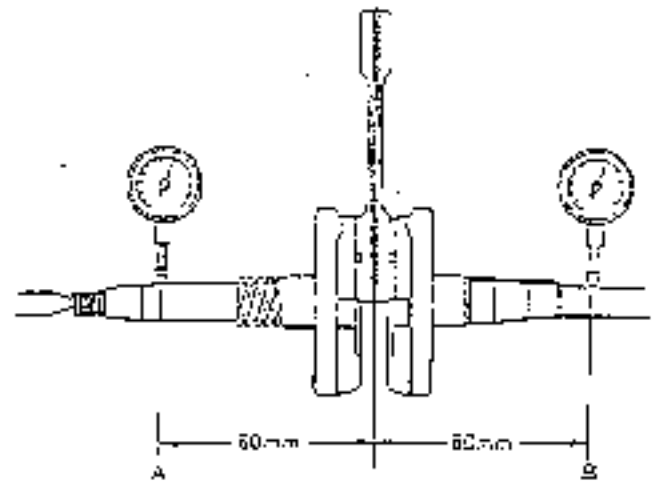


2. check the slackness of connecting rod big end in perpendicular X, Y directions.
 limit of use : 0.04mm
 change it as above 0.04mm



3. measure the swingness of crank shaft journal

limit of use	
A	B
change it as it is above 0.1mm	change it as it is above 0.1mm



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

horizontal direction vertical direction

F. Assemble crankcase:

1. assemble crankcase according to the opposite procedure of disassembling.
2. The locking torque of bolts and nuts are described in previous chapter please refer.

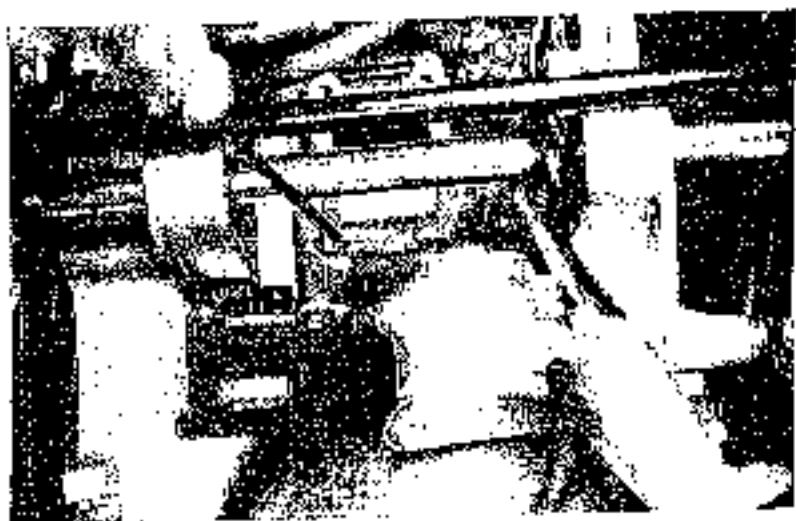
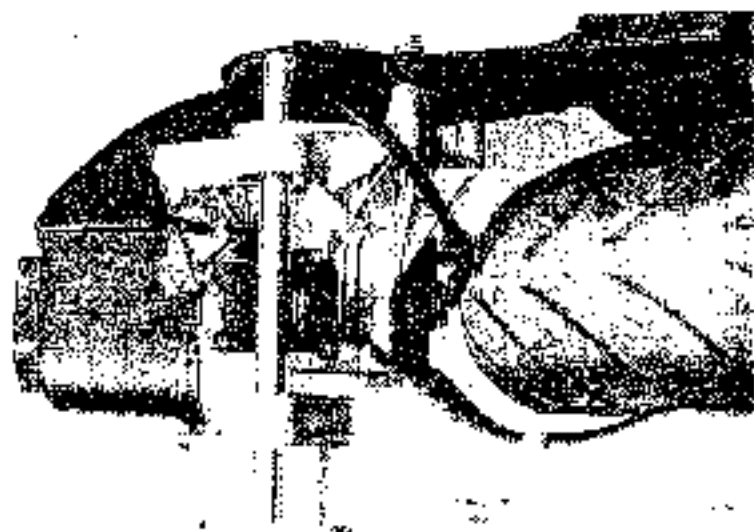
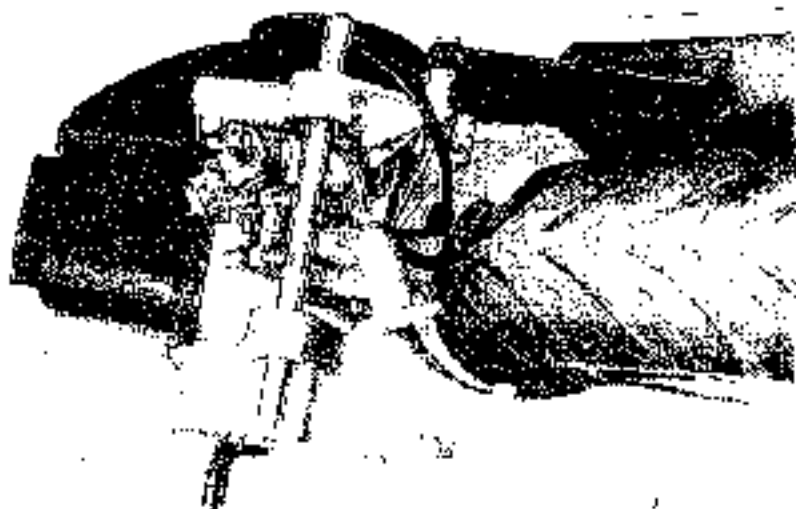
(9) Carburetor:

- A. fuel system diagram.
- B. carburetor disassembling diagram
- C. troubleshooting.
- D. dismantling carburetor.
- E. disassembling float, nozzle.
- F. reed valve
- G. checking fuel cock.

A. Fuel system diagram.



3. Carburetor disassembling



C. Troubleshooting :

a. Engine can't be started:

- 1.no fuel in fuel tank.
- 2.fuel pipe is blocked
- 3.too much fuel in cylinder.
- 4.air cleaner is blocked.

b. Engine idling RPM unsteady, running unsmoothly.

- 1.carburetor idle adjusted unproperly.
- 2.ignition disorder.
- 3.compression pressure is too low.
- 4.mixture is too thick.
- 5.mixture is too lean
- 6.air cleaner is blocked.
- 7.air injection is out order.
- 8.fuel is dirty.

c. mixture is too thick

- 1.main jet is blocked.
- 2.fuel tank cover ventilation hole is blocked.
- 3.fuel filter is blocked.
- 4.fuel pipe curved, squeezed or blocked.
- 5.float valve is abnormal.
- 6.oil level is too low.
- 7.air pipe is blocked.

d. mixture is too lean

- 1.float valve is abnormal.
- 2 oil level is too high.
- 3.air jet is blocked.

B. Dismantling carburetor:

1. remove the rear protector
luggage box



2. loose the hose clamp
between carburetor
and air cleaner, then
remove air cleaner.

3. unscrew carburetor
fuel draining screw,
drain the fuel (in-
side the carburetor)
off.

4. remove fuel pipe and
vacuum pipe which is
on carburetor.

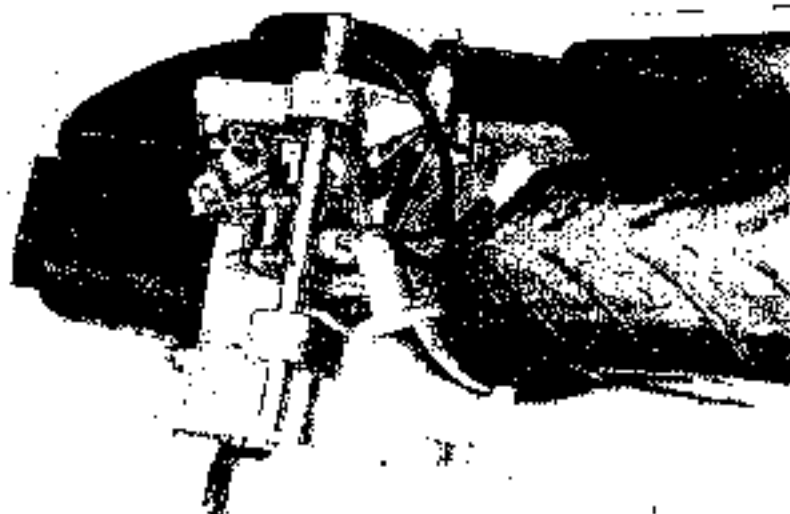
5. remove oil pipe on
carburetor.



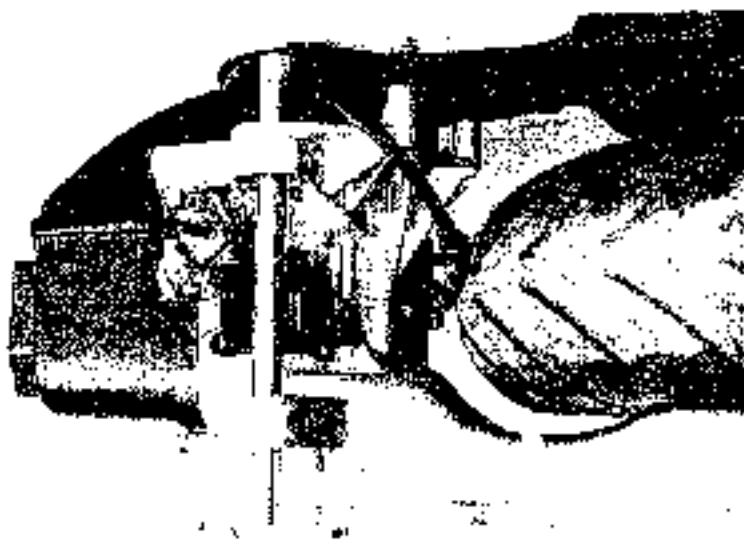
F. Reed valve.

1. dismantling reed valve.

- (a) remove air cleaner.
- (b) remove carburetor.

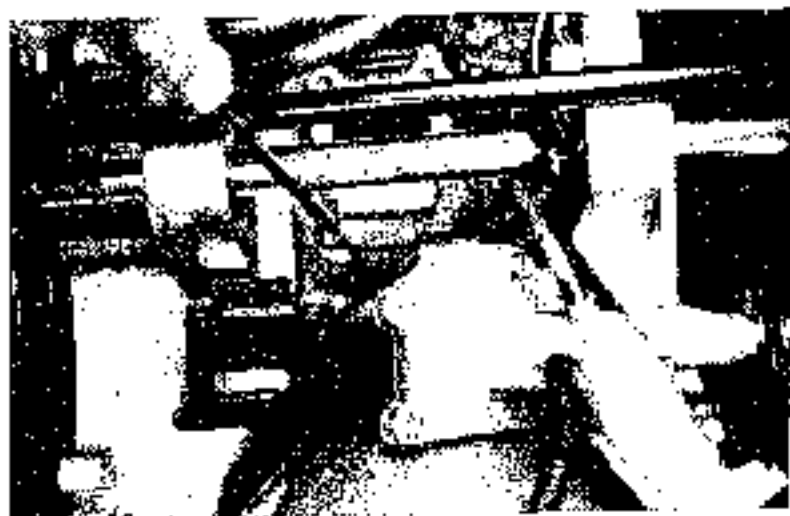


- (c) remove locking screw.



- (d) remove air inlet manifold.
- (e) remove reed valve.

- ### 2. checking the reed valve.
- change a new one when the reed valve is worn or distorted. Also change a new one when the base of reed valve is cracked, injured or distorted.



6. Checking fuel cock:

1. when engine stop, remove the fuel pipe and check is there fuel flow out.

It is normal when the residue fuel (5-10cc) flow out from fuel cock and fuel pipe. If it is continue to flow out, the vacuum pipe is blocked, please clean it.

2. remove vacuum pipe from carburetor and suck it to produce vacuum, the fuel should flow out then from fuel pipe, vice versa, if fuel don't flow out follow above operation, please check the following.

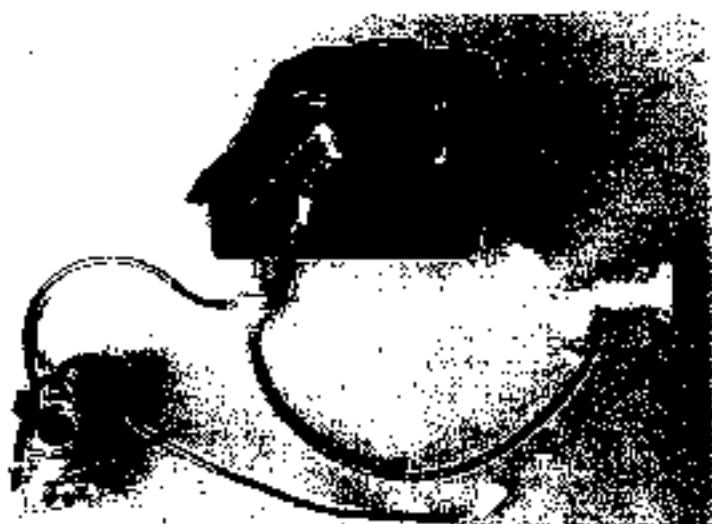
(a) clean out the blockage in vacuum pipe.

(b) blow air to fuel cock inlet pipe

3. Note:

Use the bowl under the end of fuel pipe to receive the drop.

Avoid fire even spark.



(10)Steering column, front wheel, frt disc brake
comp, frt drum brake comp, front fork:

- A. trocòleshooting
- B. dsta
- C. change speedometer cable
- D. steering handlebar
- E. front wheel
- F. front brake
- G. front fork

A. Troubleshooting

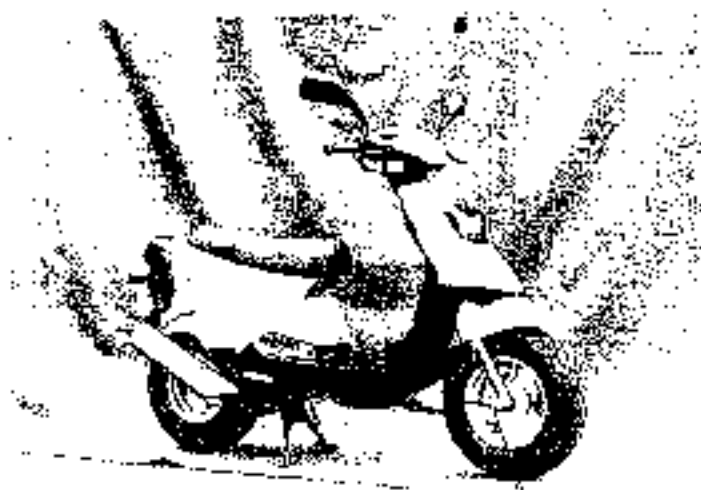
1. steering handlebar is abnormal, too tight.
 - a. steering mechanism; washer of conical base locked too tightly.
 - b. steering mechanism; steel ball is cracked.
 - c. steering mechanism; steel ball base and washer of conical base is injured.
 - d. wheel pressure is too low.
2. steering handlebar is 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 front brake	4.0	3.5
disk of front brake	3.6	3.1
swingness of front/rear wheel		2

C. Changing speedometer cable:

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



3. Remove the fixed screw of speedometer cable on the front right wheel.
4. Draw out the damage speedometer cable.
5. 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 front handle cover.
3. Remove the rear handle cover, speedometer and plugs of switch.



4. Remove the terminal of rear brake cable and the switch plug of rear brake lamp.
5. Loosen the acceleration pulley clamp.
6. Remove the throttle cable and RH grip assembly.
7. Remove the locking bolt of front brake master cylinder on the steering handlebar, then remove front brake master cylinder.



8. Remove the bolts and nuts fixed the handlebar on the front damper.
9. Remove the steering handlebar.
10. Assemble the handlebar follows the opposite procedure of dismantling.
Locking torque M6:1.0~1.2kg.m M10:3.0~4.0kg.m
11. Put the grease onto the cables before assembling.



E. Front wheel:

1. Remove the lock nut of front wheel on the right side.

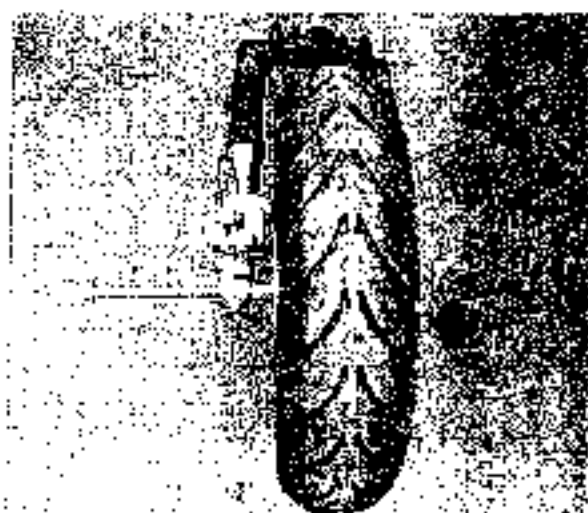


- 2 Draw out the axle of front wheel, remove the separated ring and take off the gear sets of speedometer.
3. Remove the front wheel assy.
4. Assemble the front wheel follows the opposite procedure of dismantling.

Locking torque: $M10: 3.0 \sim 4.0 \text{ kg.m}$

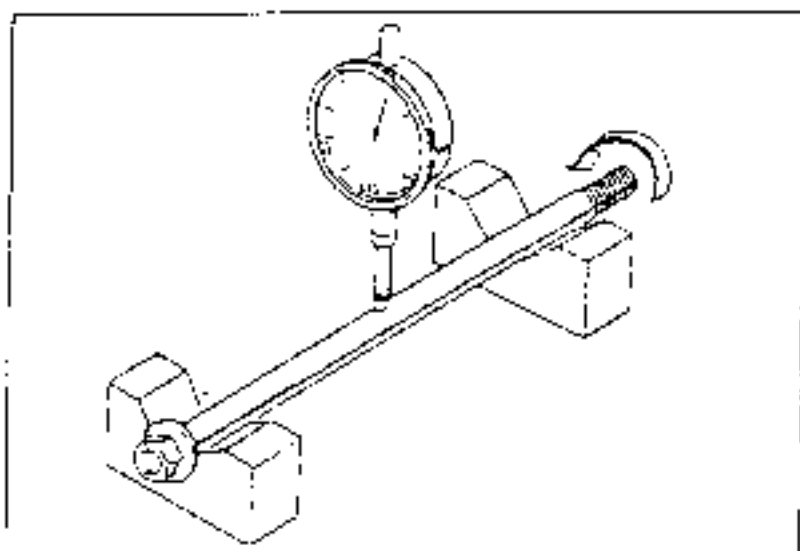
Note: 1. Put the braking block of speedometer gear assy upon the extension of the fct fork.

2. Put the grease onto the gear sets of speedometer before assembling.

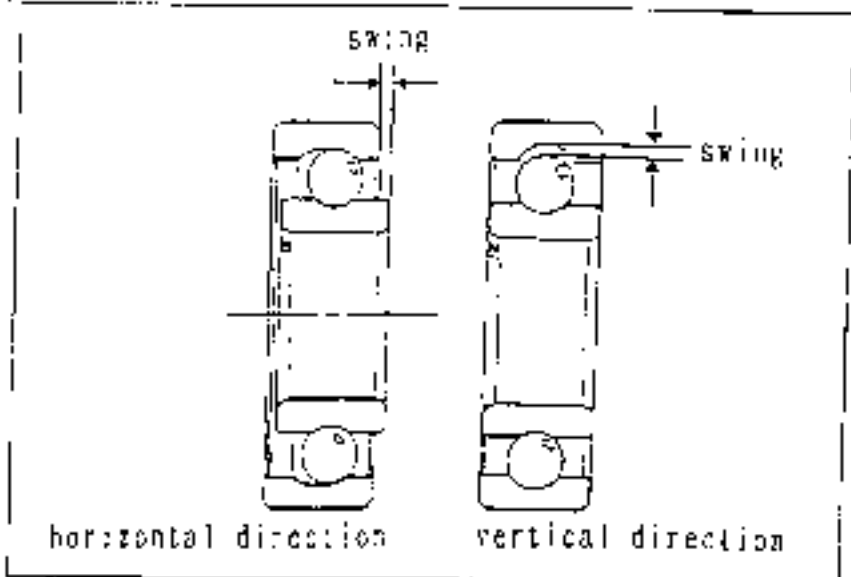


5. Checking front axle

- a. check the correctness of front axle.
- b. limit of use: change it as it is above 0.2mm

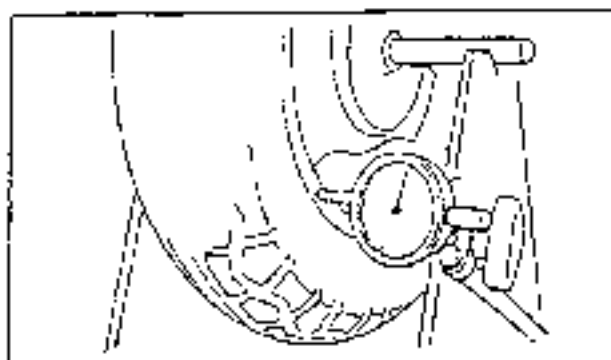


- ### 6. Checking the bearing of front wheel, rotate the wheel, if noise or slack occur in bearing, please change a new one.



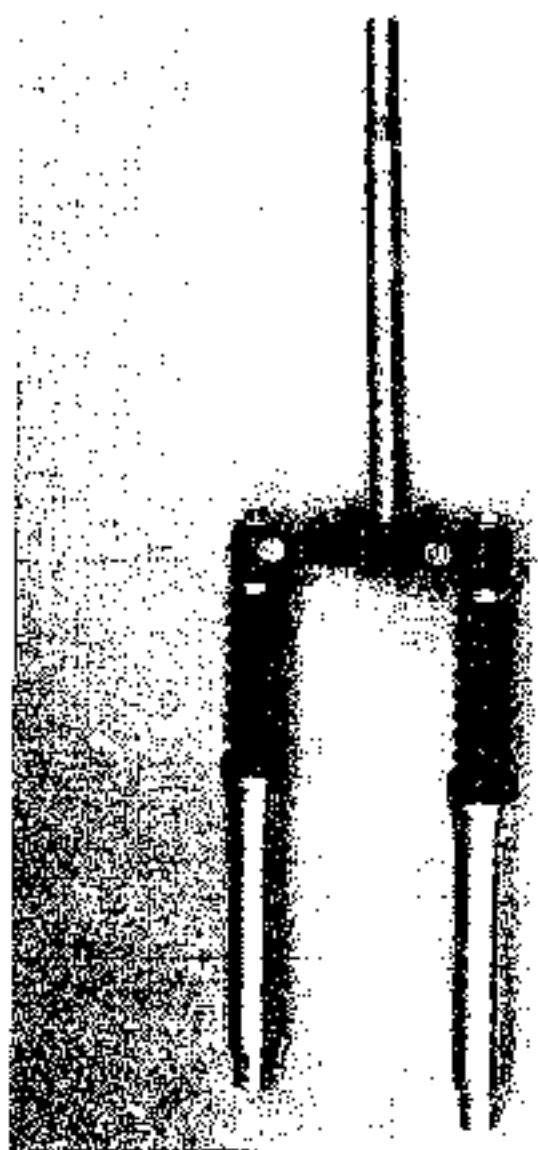
7. Front wheel rim checking

- (a) check the swingness of front wheel rim.
- (b) limit of use:
 - horizontal direction: change a new one when it is above 2.0mm.
 - vertical direction: change a new one when it is above 2.0mm



(F)Front brake

1. System diagram of front brake



2 Disassembling and assembling front brake comp.
a. remove two bolts fixed the frt. brake comp. on the front fork.

b. remove the front brake comp.

c. assemble the frt brake comp. follows the opposite procedure of dismantling.
locking torque.

N8 2.0~3.0kg.m

3. Air leakage of front brake comp.

The procedure of air leakage
a. inject proper brake oil to the storage tank.

b. Don't let the brake oil overflow from master cylinder or storage tank when assemble the master cylinder cover.

c. Put the spanner upon the leaking screw for cylinder.
d. Lock and unlock the screw several times till there is no bubble.

e. Operate slowly the brake lever several times.

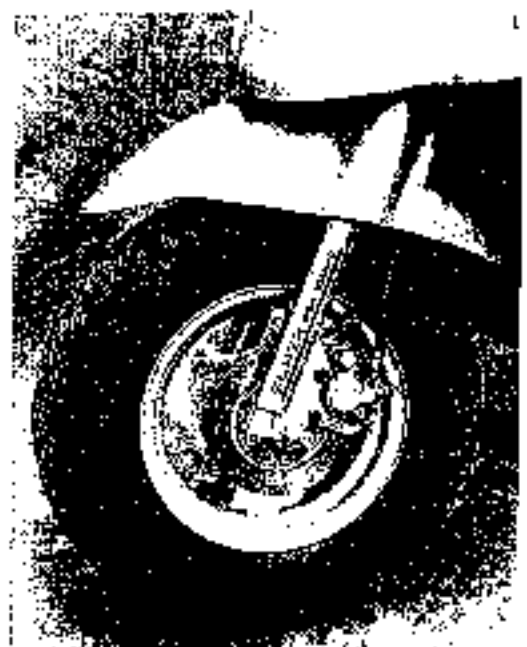
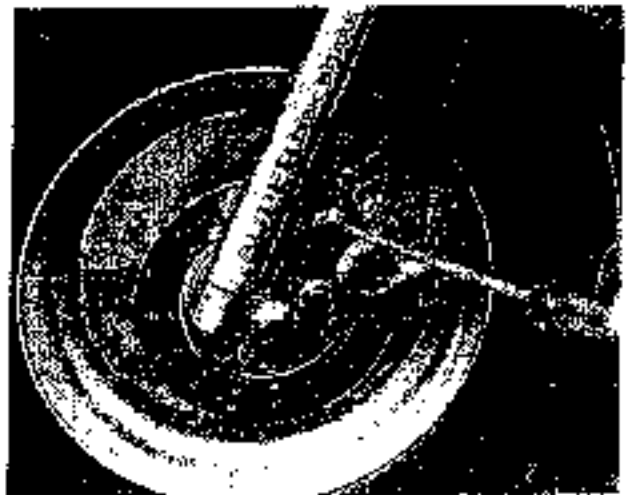
f. Push the brake lever to the end.

g. Loose the leaking screw, then move forward the lever to the limit.

h. Locking the leaking screw and then loose it when the lever on the end.

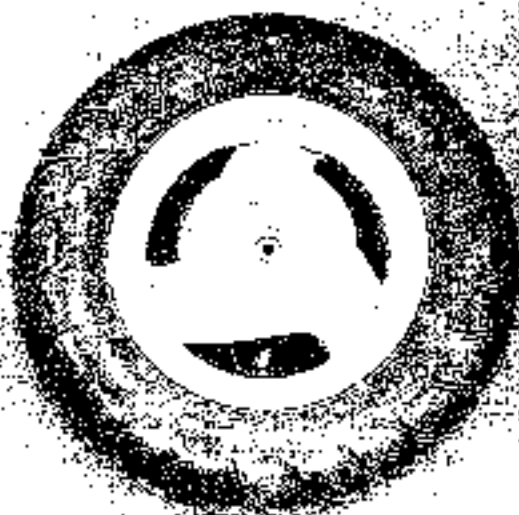
i. Repeat the above procedure until all of the air of brake system was leaked completely.

locking torque of leaking screw: 0.6kg.m



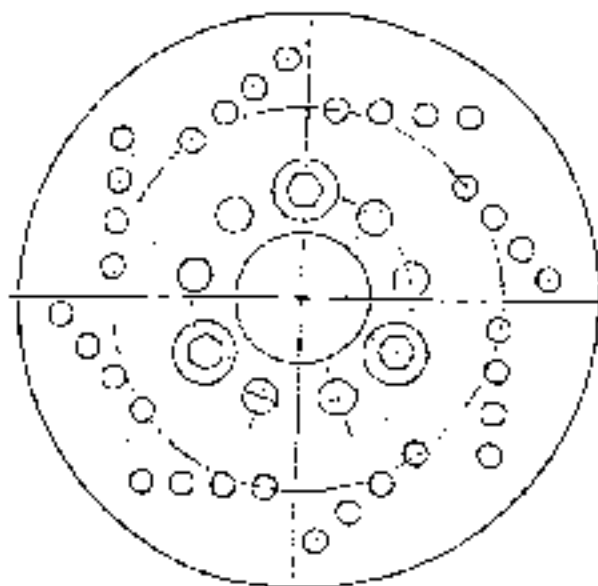
4. Disassembling and assembling the front brake-disk.

- 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 MR:2.0~3.0kg.n



5. Checking the front brake-disk.

- Standard thickness of disk : 3.0mm
limit of use:change it as below 3.1mm



6. Checking the front brake-lining.

- a. Standard thickness:4.0mm.
- limit of use:As the thickness is below 3.0mm, change it.
- Note:Prevent grease on the lining.



(11)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. unproperly 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.

3. Data

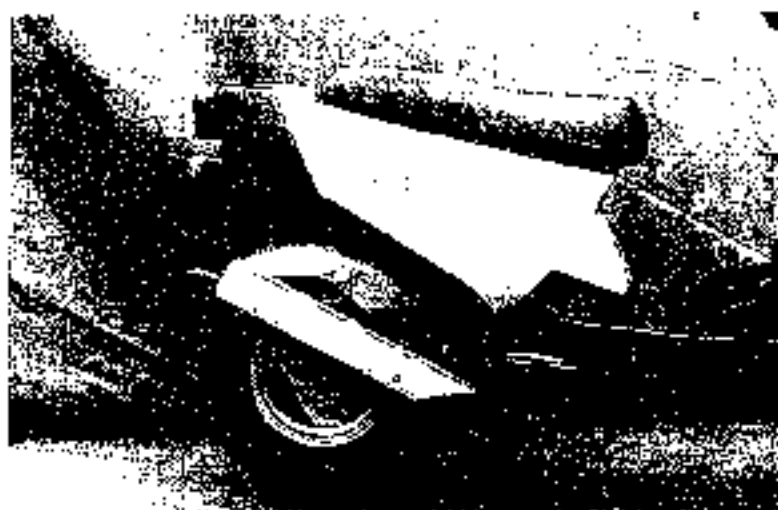
Item	Standard value(mm)	limit of use(mm)
The swingness of rear wheel	_____	2.0
Brake bob inner diameter	110	110.5
Thickness of brake lining	4.0	2.0

C. Dismantling and assembling the rear wheel.

1. Remove the rear mudguard.
2. Remove the muffler
3. Remove the nut on the rear wheel.
4. Remove the rear wheel.
5. Assemble the rear wheel follows the dismantling procedure.

Locking torque: M8: 0.7-1.1 Kg.m

M14: 8.0-10.0 Kg.m



D. Checking the rear wheel.

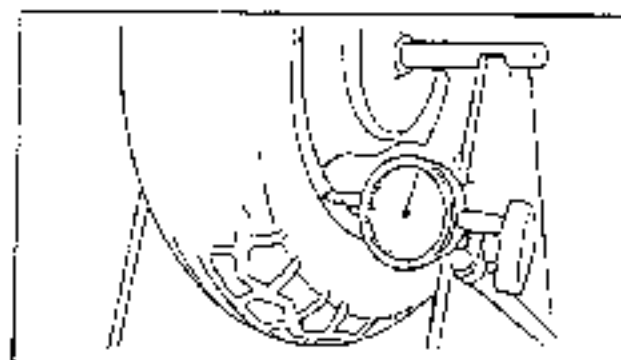
check the swingness of rear wheel.

radial direction:

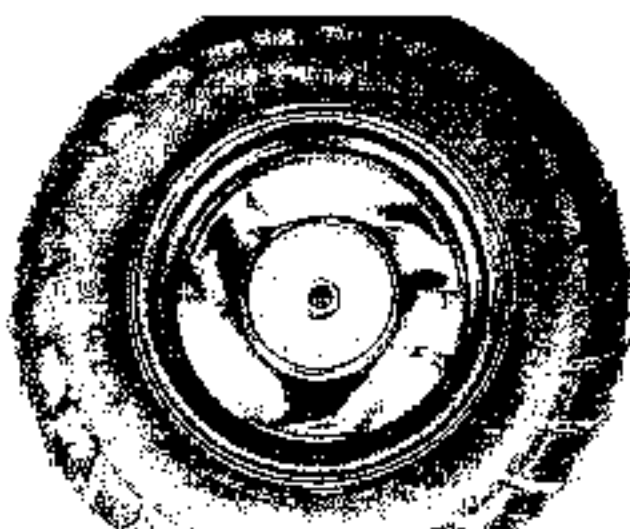
change it as it is above
2.0mm.

horizontal direction:

change it as it is above
2.0mm.



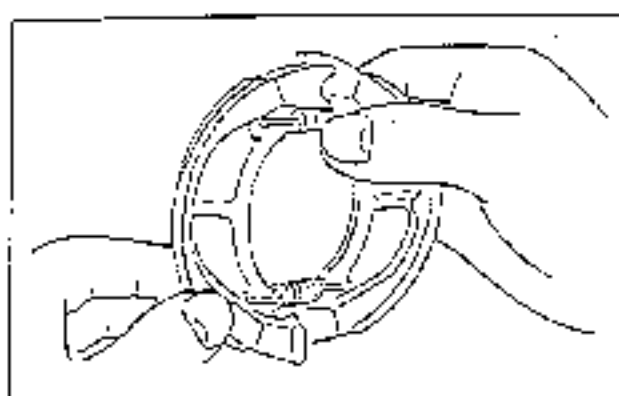
E. Rear brake:



1. Rear brake disassembling diagram.

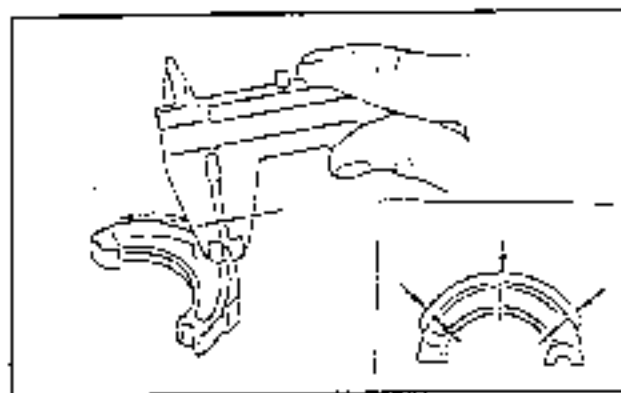
(1) Checking rear brake hub:

- a. measure the inner diameter of rear brake hub.
- b. limit of use: change it as the diameter is above 110.5mm.



(2) Checking brake lining:

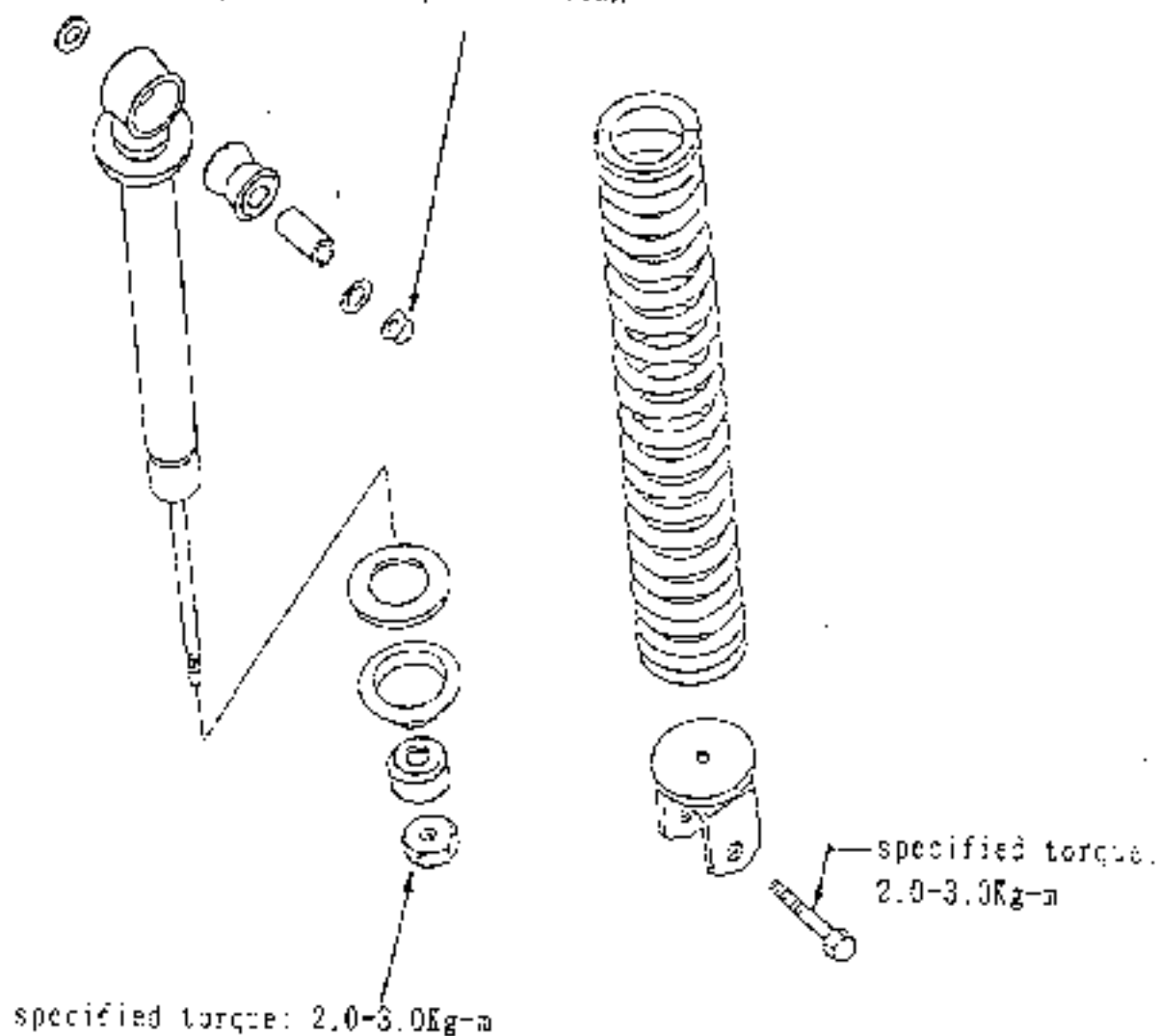
- a. measure the thickness of rear brake lining.
- b. limit of use: As the thickness is less than 2mm, change it.



F. Rear damper

1. Rear damper disassembling diagram:

specified torque: 3.0-4.0Kg·m



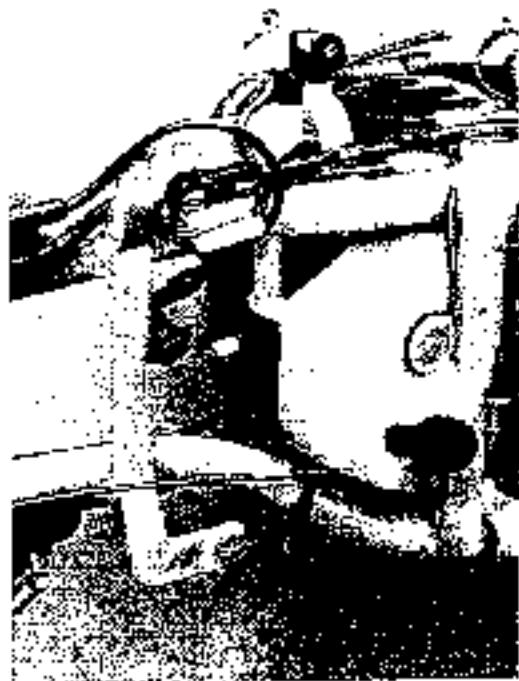
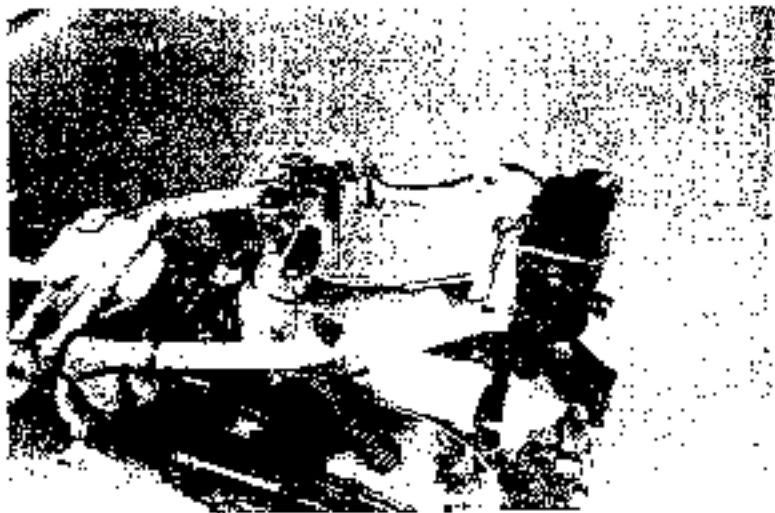
(12) Fuel tank, oil tank :

- A. Troubleshooting.
- B. Fuel tank disassembling diagram.
- C. Dismantling and assembling fuel tank.
- D. Oil tank disassembling diagram.
- E. Dismantling and assembling oil tank.

A. Troubleshooting:

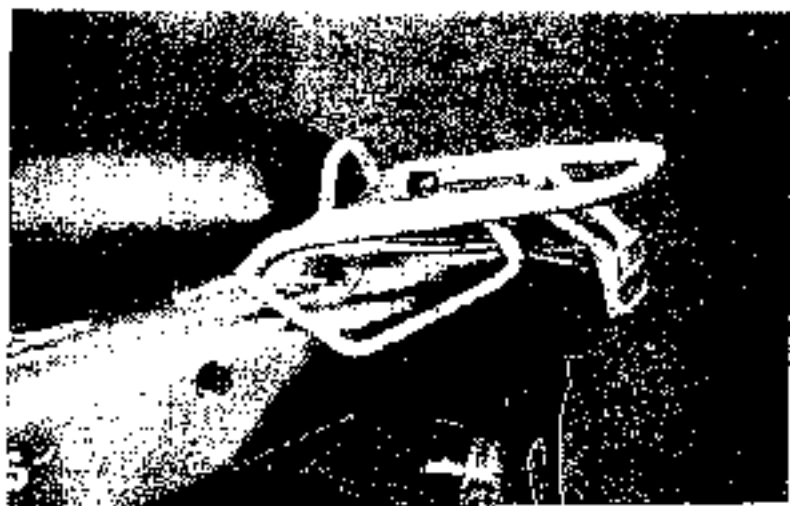
1. Engine can't be started:
 - a. No fuel in fuel tank.
 - b. Fuel pipe is blocked.
 - c. Auto cock and fuel filter is blocked.
 - d. The membrane of fuel cock over extended.
2. The mixture is too lean.
 - a. Ventilation hole is blocked.
 - b. Fuel pipe is crooked, squeezed, or blocked.
 - c. Auto cock and fuel filter is dirty.

(B) Fuel tank

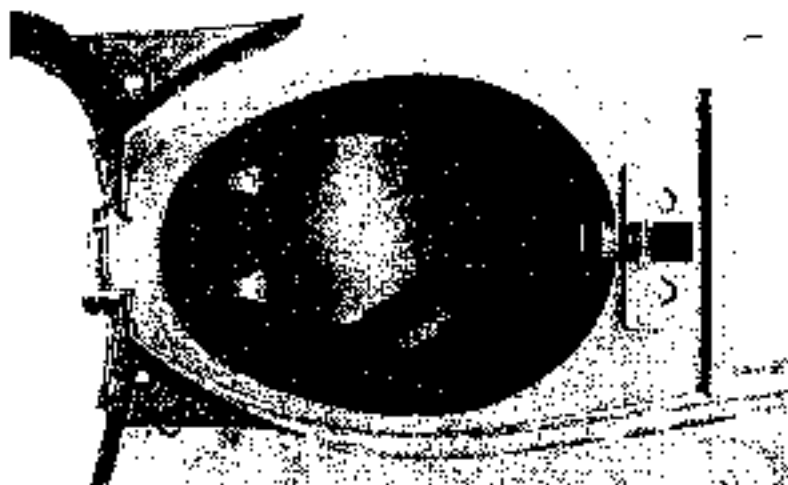


C. Fuel tank dismantling and assembling

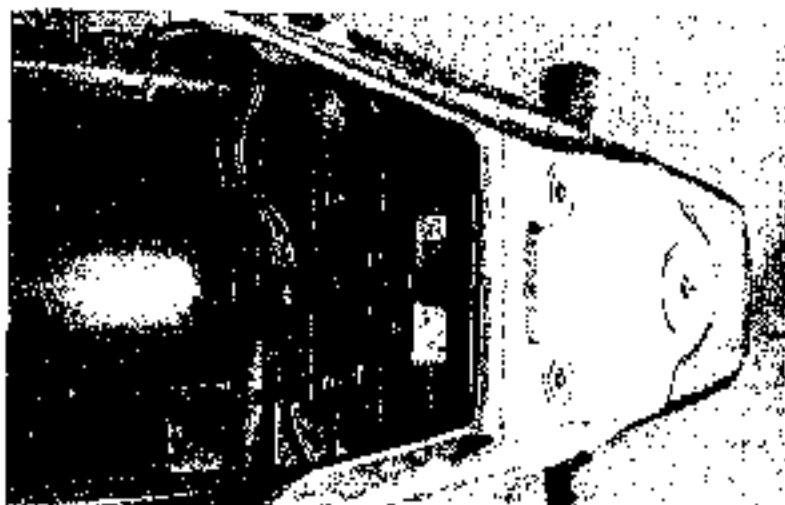
1. Remove the rear carrier(rear protector)



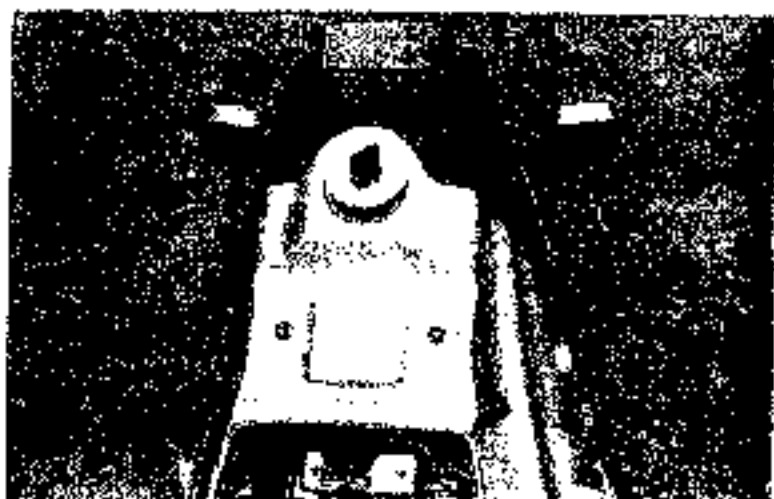
2. Open the seat.
3. Remove luggage box.



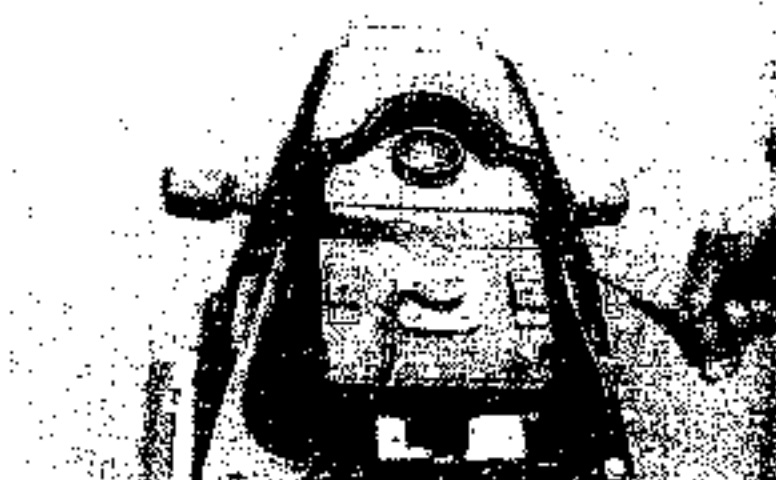
4. Take off the luggage box.



5. Remove the fuel cover and then take off the side cover.



6. Take off the rear lamp cover.



7. Remove the vacuum pipe and fuel pipe from the fuel tank & carburetor.
8. Remove the connecting terminal of fuel gauge.
9. Remove the fixing bolt from the fuel tank.



10. Take out the fuel tank.



11. Remove the correction terminal of oil gauge.
12. Remove the fixing belt of oil tank.
13. Take out the oil tank.
14. Re-assembling as the opposite procedure of disassembling, locking torque:
M6:1.0-1.2 kgf·m



D. Oil tank disassembling diagram:



E. Dismantling and assembling oil tank:

1. drain the oil off.
2. remove the cable plug of oil gauge.
3. remove oil tank.
4. clear the oil cleaner.
5. assemble oil tank just in the way opposite to dismantling.

五、Electric equipment:

- (1) Troubleshooting
- (2) Battery
 1. check specific gravity of electrolyte
 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

(1) Troubleshooting:

A. Recharge system:

a. No power:

1. battery over charge
 - ① No electrolyte in battery.
 - ② Battery becomes white.
 - ③ Short circuit in battery.
 - ④ Regulator
2. the connecting of wire is drop off.
3. fuse is broken.
4. power supply lock is abnormal.

b. Voltage is too low:

1. Battery recharges unsufficiently.
2. The connecting is abnormal.
3. Recharge system is abnormal.
4. Regulator

B. Ignition system:

a. The sparking of spark plug is abnormal:

1. Spark plug is abnormal.
2. Wire connects unproperly, broken or short circuit.
 - ① between A.C. flywheel magneto and CDI sets.
 - ② between CDI sets and H.T. coil.
 - ③ between CDI sets and main switch.
 - ④ between 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:

a. Starting motor can't rotate:

1. The fuse is broken
2. Battery recharges unsufficiently.
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.

c. Current is broken:

1. The wiring of battery connects unproperly.
2. Ignition system connects abnormally.
3. Ignition system is short circuit.
4. Lamp system connects abnormally or short circuit.

d. 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.

b. Engine rotate unsmoothly:

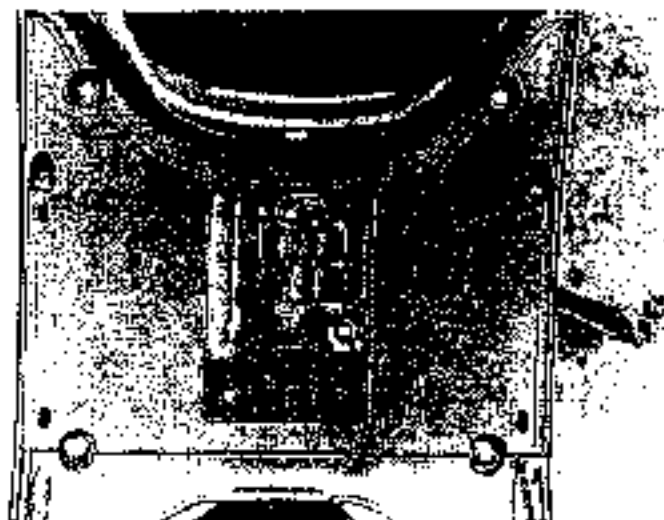
1. Ignition primary wiring
 - ① the wire or plug of wiring connects unproperly.
 - ② main switch disconnects.
2. Ignition secondary wiring
 - ① Ignition coil is abnormal.
 - ② Spark plug is abnormal.
 - ③ H.T. coil is abnormal.
 - ④ Spark plug cover electricity leakage.
3. Ignition period
 - ① A.C. magneto is abnormal.
 - ② A.C.G. coil disconnects.
 - ③ C.D.I. sets is abnormal.

a. Starting motor is out of order.

- b. Starting motor weak rotation:
 1. battery recharges unsufficiently.
 2. wiring disconnects.
 3. motor or gear some impure material drop in.
- c. 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(-)



Note:

- a. Unnecessarily refill the battery liquid.
- b. Do not take out the sealed bolt when recharging.



1. Recharge

connection method: recharger positive cable(+) connects with battery positive cable(+).

recharger negative cable(-) connects with battery negative cable(-).

recharge current:

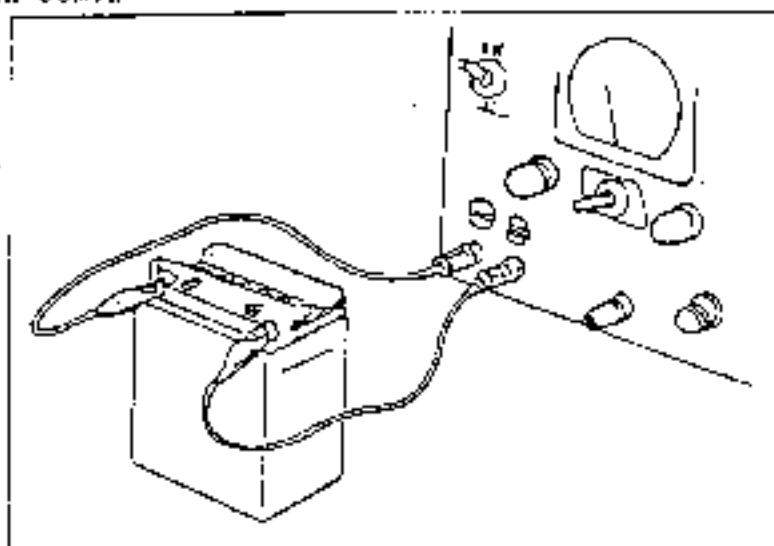
1. Please recharge according to the following current and time.

standard: 0.4-5-10hrs

rapid: 4A-30min

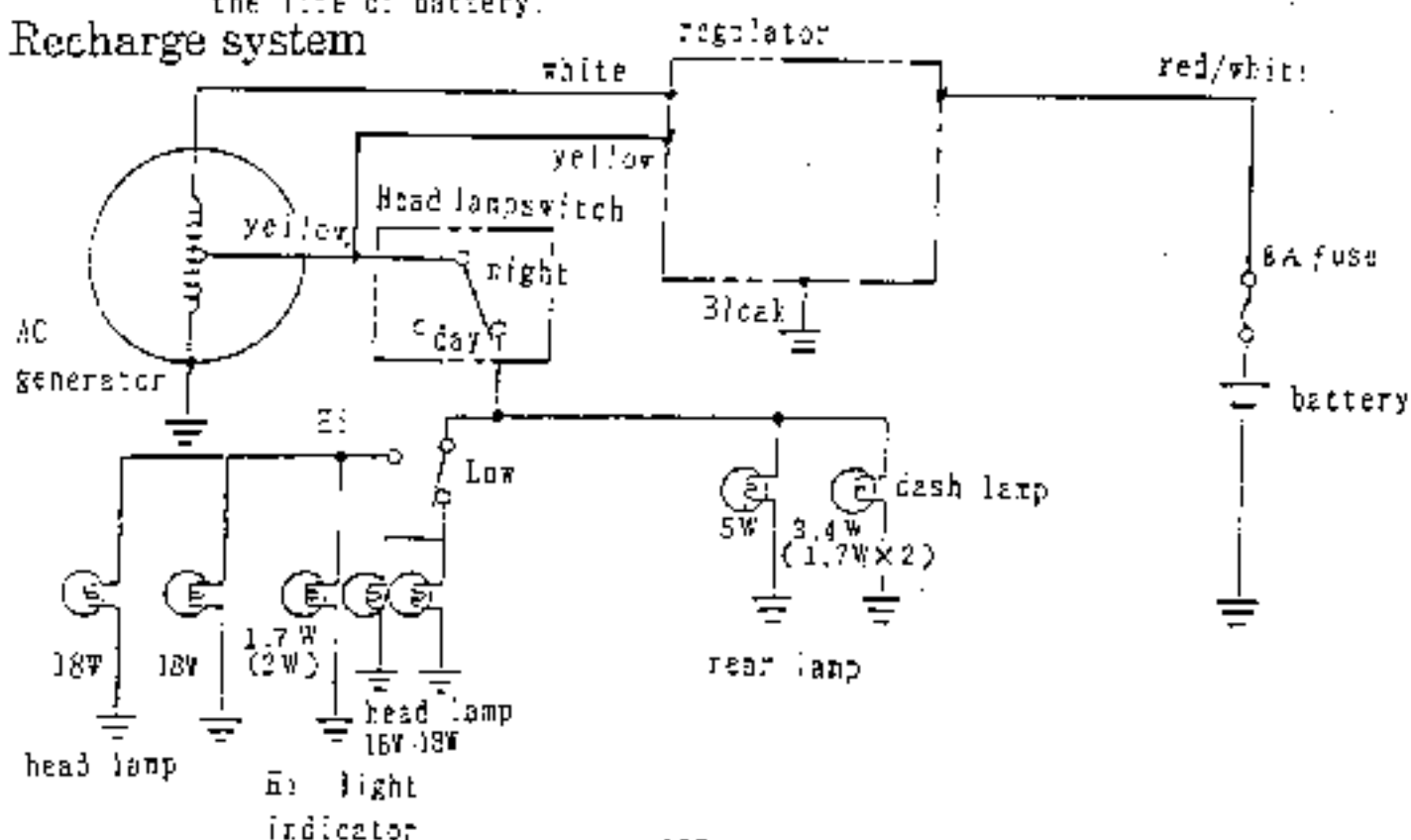
- avoid fire around the battery.
- recharge current "ON" or "OFF" should be operated by recharger's switch.

If suddenly disconnect or connect plugs sparks will occur and explosion will result.



Notice: Avoid using rapid recharge method because it will cause battery broken or to reduce the life of battery.

Recharge system



2. Measure recharge performance.

This test is performed when the battery had been fully recharged.

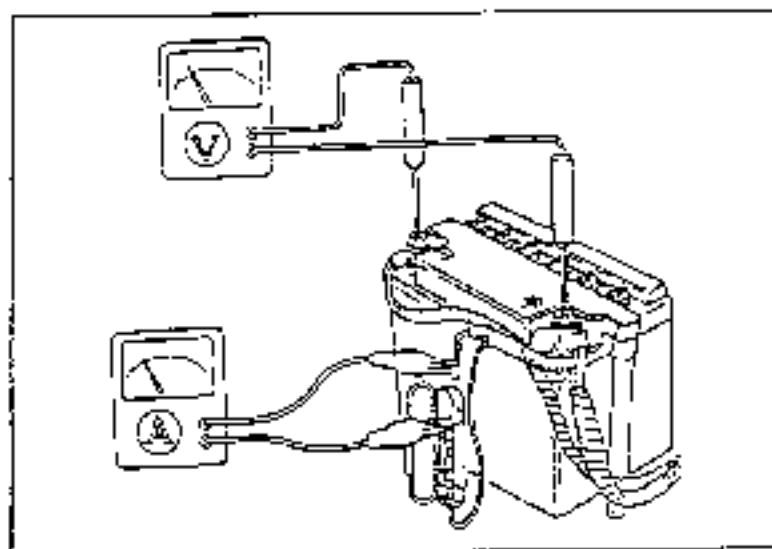
When performing this test, engine should be warmed up, remove the luggage, remove the orange wire of regulator, open fuse box, take off red/white wire. Connect galvanometer between red/white wire and fuse.

Red wire connected to galvanometer should not touch the chassis when being tested.

Head lamp switch is "OFF", the rpm of engine is 2000rpm, then test it.

Head lamp switch	recharge start, rpm	2,500rpm	5,000rpm
OFF (day)	below 1,800rpm	above 0.7A	below 1.3A
ON (night)	below 2,000rpm	above 0.5A	below 1.3A

When you can't get the standard value, check the regulator.



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



AC Magneto terminals

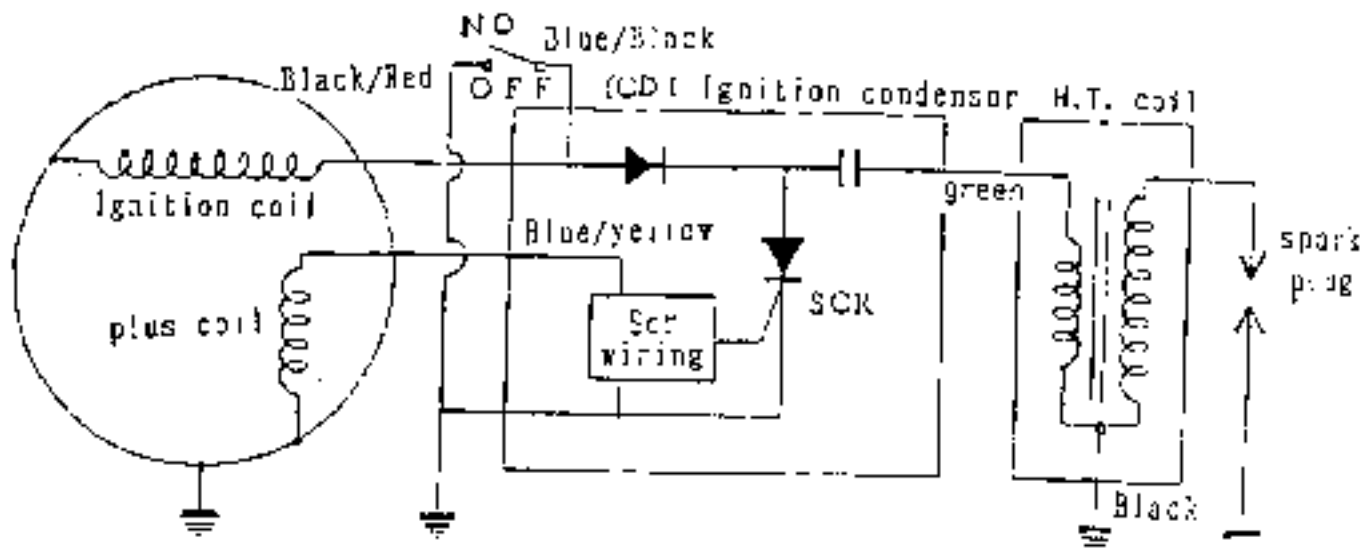
3. Check regulator measure the resistance value between each terminal, it should be in specified range, otherwise change a new one.



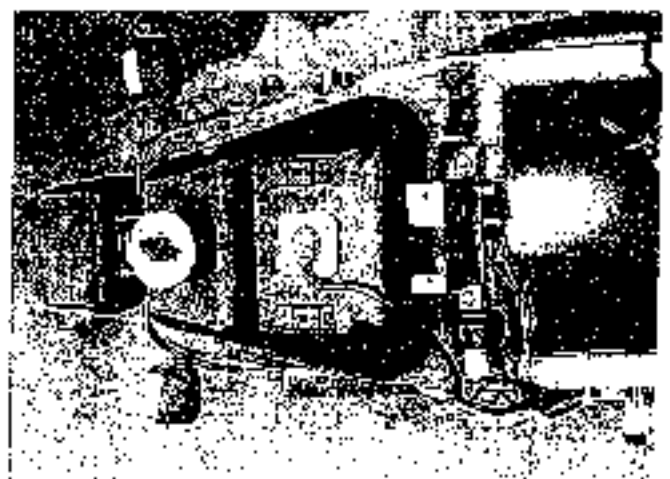
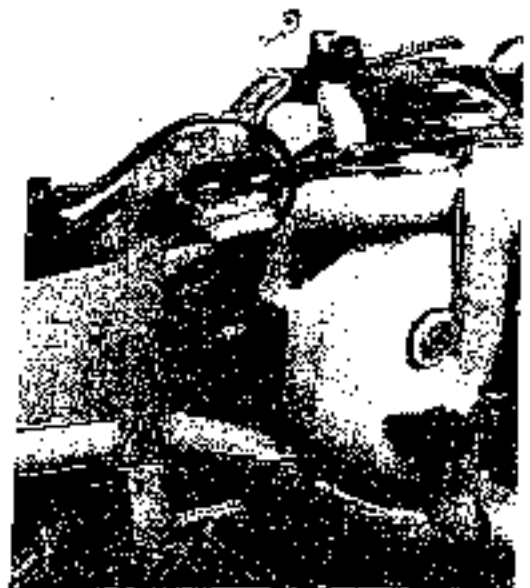
Regulator

(4) Ignition system:

1. the wiring of ignition

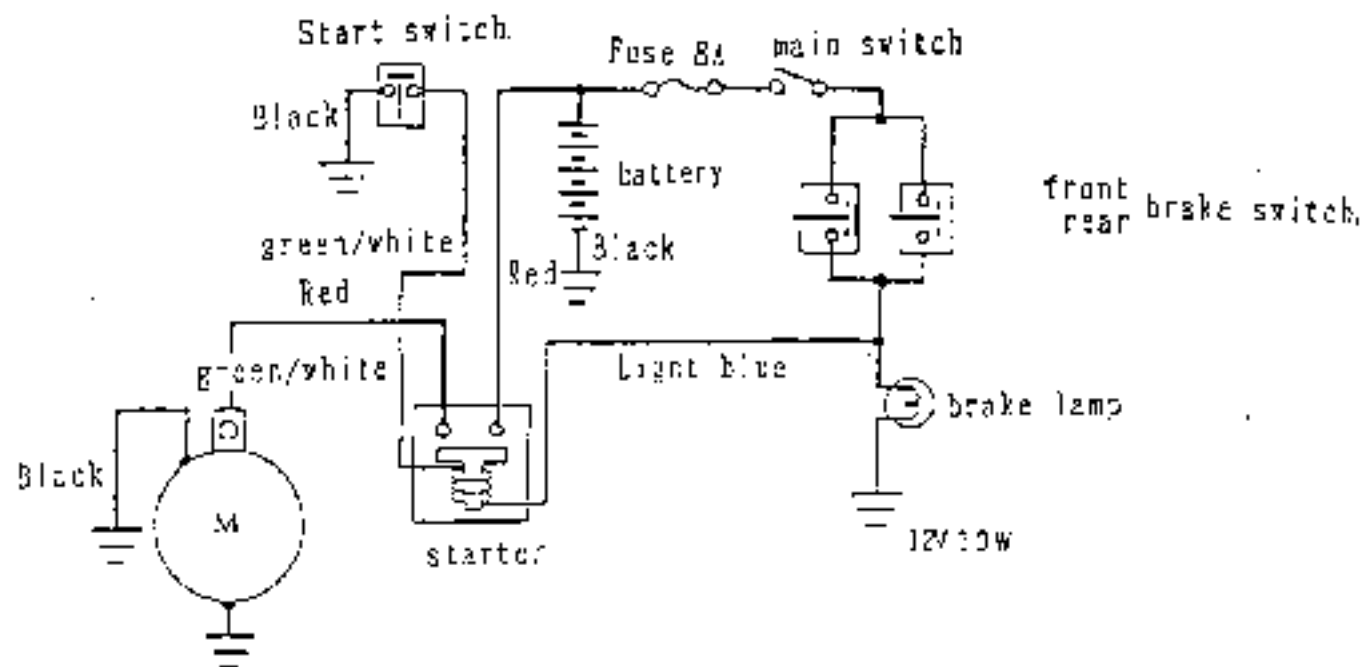


2. check spark plug.
3. check H.T. cable and H.T. coil.
check with CDI tester, follow the instruction manual.
4. check CDI sets.
check with CDI tester and follow the instruction manual.
If CDI is breakdown, please change a new one.

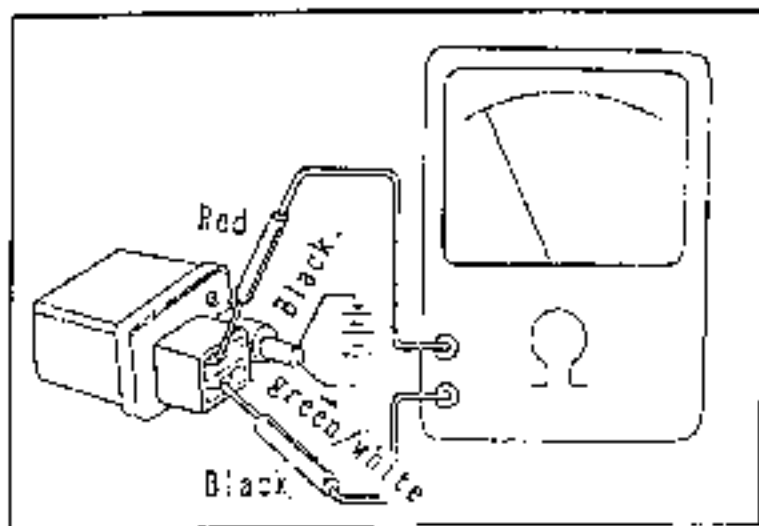


(5) The starting system :

1. The wiring of starting

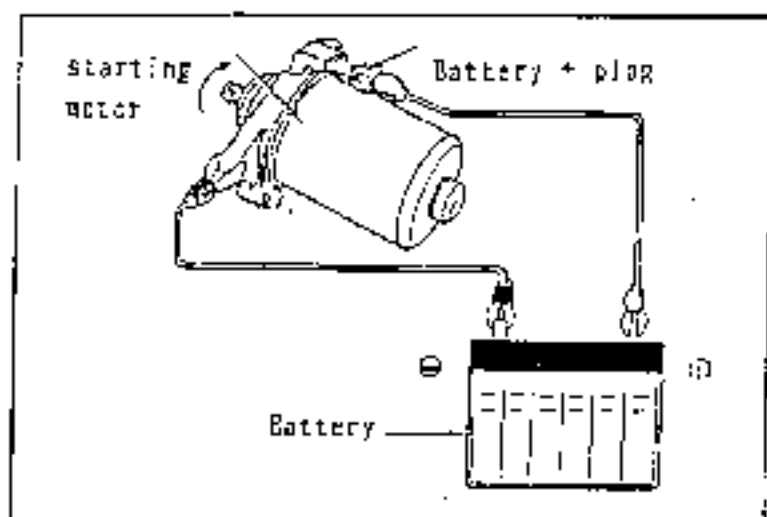


2. check the starter
 connect green/white + black
 -with 12v battery if it is and
 red with black is then it
 is good.



3. dismantling the starting motor

- (a) remove 2 screws on starting motor
- (b) remove starting motor cables.



4. checking the starting motor check the operation condition.

when connecting starting motor with battery.
 (watch if it is rotating cwly)

Do not operate starting motor for too long.



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