#### **PREFACE**

This manual offers all service specialist with professional techniques techniquess of maintenance and repairing for PM50 &PM110. It provides a Detailed guide for those whom may concern with how to maintain, repair, Reassemble, and exchange parts of their scooters.

At every section, we illstrate each important point by assembling Procedures, explosive diagrams and photographs.

Although we have tried our best to make this manual as perfect as Possible, please kindly inform us if any fault needs to be corrected in this manual.

Thank you for purchasing our POG scooters.

FACTORY:

Motive Power Industry Co.,Ltd.

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## **SCOOTER SPECIFICATION (1)**

Name	PMX SPORT50	ERAME	STEEL	
TYPE	PM-50D	SUSPENSIO	N SYSTEM	
DIMENS	SION	FRONT TELESO	COPIC	
TOTAL LENGTH	1820	REAR UNIT-A	BSORBER	
TOTAL WIDTH	660	TRANSM	ISSION	
TOTAL HEIGHT	1090	RPIMARY RATIO	1	
WHEELBASE	1220	SECONDARY RATIO	52/13*44/13	
DRY WEIGHT	94KG	CLUTCH	C.V.T.	
FRONT	37KG	TIR	RE .	
REAR	57KG	FRONT	120/70-12	
TOTAL	94KG	REAR	130/70-12	
LOAD	2 PERSONS(110KG)	BRAKE S	YSTEM	
LOADED V	VEIGHT	FRONT	DISC BRAKE	
FRONT	69KG	REAR	DRUM BRAKE	
REAR	135KG	LIG		
TOTAL	204KG	HEAD LIGHT(H/L)		
		TAIL LIGHT	12V-5W	
CYCLE	2	BRAKING LIGHT	12V-21W	
FUEL	UNLEADED	TURN LIGHT	12V-10W	
CYLINDER NUMBER	1			
ARRANGEMENT	HORIZONTAL			
DISPLACEMENT	49C.C.			
BORE	<b>≈</b> 40.0mm			
STROKE	39.2mm			
COMPRESSION RATIO	6.8:1			
MAX. POWER/RPM	3.0KW/7000RPM			
AMX. TORQUE/RPM	5.2N.m/6500RPM			
IDLE RPM	$1900 \pm 100$			
IGNITION	CDI			
SPARK PLUG	NGK BP7HS			
COOLING	FORCE AIR			
STARTER	ELECTRIC, KICK			
FUEL MIXING	OIL PUMP			
LUBRICATION	SEPARATED			
VEHICLT PERI	FORMANCE			
TOP SPEED	65KM/H			
FUEL CONSUMPTION	43KM/L			
CLIMBING ABILITY	20 °			

#### SCOOTER SPECIFICATION (2)

Name	PMX SPORT110	ERAME	STEEL	
TYPE	PM-110D	SUSPENSIOI		
DIMENS		FRONT TELESO		
TOTAL LENGTH	1820		ABSORBER	
TOTAL WIDTH	660	TRANSM	ISSION	
TOTAL HEIGHT	1090	RPIMARY RATIO	1	
WHEELBASE	1220	SECONDARY RATIO	49*16*43/13	
DRY WEIGHT	94KG	CLUTCH	C.V.T.	
FRONT	37KG	TIR		
REAR	57KG	FRONT	120/70-12	
TOTAL	94KG	REAR	130/70-12	
LOAD	2 PERSONS(110KG)	BRAKE S		
LOADED V		FRONT	DISC BRAKE	
FRONT	69KG	REAR	DRUM BRAKE	
REAR	135KG	LIGI		
TOTAL	204KG	HEAD LIGHT(H/L)		
		TAIL LIGHT	12V-5W	
CYCLE	2	BRAKING LIGHT	12V-21W	
FUEL	UNLEADED	TURN LIGHT	12V-10W	
CYLINDER NUMBER	1			
ARRANGEMENT	HORIZONTAL			
DISPLACEMENT	106.2C.C.			
BORE	<b>≈</b> 52.0mm			
STROKE	50.0mm			
COMPRESSION RATIO	6.6:1			
MAX. POWER/RPM	5.7KW/7000RPM			
AMX. TORQUE/RPM	8.4N.m/6500RPM			
IDLE RPM	$1900 \pm 100$			
IGNITION	CDI			
SPARK PLUG	NGK BP7HS			
COOLING	FORCE AIR			
STARTER	ELECTRIC, KICK			
FUEL MIXING	OIL PUMP			
LUBRICATION	SEPARATED			
VEHICLT PERI	FORMANCE			
TOP SPEED	82KM/H			
FUEL CONSUMPTION	38KM/L			
CLIMBING ABILITY	20 °			
	<u> </u>	<u> </u>	<u> </u>	

#### 2. Service information:

- (1)The operation notice
- (2)Locking torque value
  - a.For engine
  - b. For chassis
  - c. Others
- (3) Lubrication instruction
  - a.For engine
  - b. For chassis
  - c. Wheel bearing
- (4)Wiring diagram
- (5)Troubleshooting
  - 1. Difficult starting or can't
  - 2. Weak acceleration
  - 3. Engine running unsmoothly (low speed)
  - 4. Engine running unsmoothly(high speed)
  - 5. Clutch, drive, driven pulley
  - 6. Handlebar steering astrayed when running
  - 7. Front, rear damper not balanced
  - 8.Bad braking
  - 9.Oil indicator malfunction
  - 10. Fuel indicator malfunction
  - 11. The starting motor malfunction
  - 12.No sparking
  - 13. Charging abnormal

#### (1) The operation notice:

- 1. For parts like the gasket, o-ring, clips and circlets, please change a new part whenever re-assembled.
- 2. When trying to tighten screws or nuts, please lock tightly according to each recommended locking torque and in the sequence of the"X" pattern.
- 3.Please use PGO recommended parts.
- 4.After dismantling, please clean all parts involved or used for checking and grease all contact surfaces when reassembling.
- 5.Use grease recommended by P.G.O.
- 6. When removing battery, please disconnect the negative cable(-) first. However, please connect the positive cable(+) first when assembling.
- 7.Before installing a new fuse, please be sure that the specification is correct.
- 8. After reassembling please re-confirm that all connecting point, locking parts, circuits, polar characteristics are functioning well befor selling out.

## (2) Locking Torque Value:

## 1.Engine

No	Locking location	Thread dia	Locking	Remarks
		(mm)	torque kg-m	
1	Cylinder head	7	1.0~1.4	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	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	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	Spark plug	14	2.5~3.0	
16	Fan cover	6	1.0~1.2	
17	Fixed plate, drive clutch	6	1.0~1.4	
18	Nut of rear wheel axle	16	8.0~10.0	U TYPE NUT
19	Kick starter	6	1.0~1.2	
20	Muffler bolt on crankcase	8		

## 2.chassis

1	Steering stem nut	10mm	3.0~4.0	
2	Front axle nut	12mm	5.0~6.0	
3	Fixed nut fasten eng. and	12mm	5.0~6.0	
	chassis	1211111	5.0~0.0	
4	Fixed bolt fasten hanger and	10mm	3.5~4.5	
	chassis			
5	Rear shock absorber(upper)	10mm	3.0~4.5	
	Rear shock absorber(lower)	8mm	2.4~3.0	
6	Lock nut faster frt. brake disk	8mm	2.0~3.0	
	and frt. wheel rim			
7	Lock bolt between frt. brake	8mm	2.0~3.0	
	caliper and frt. absorber			
8	Lock bolt of frt braking hose	10mm	3.0~3.5	

## 3.Other parts: Please refer the following table:

Standard torque values:

No	Item	Torque kg-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

## B. Chassis parts



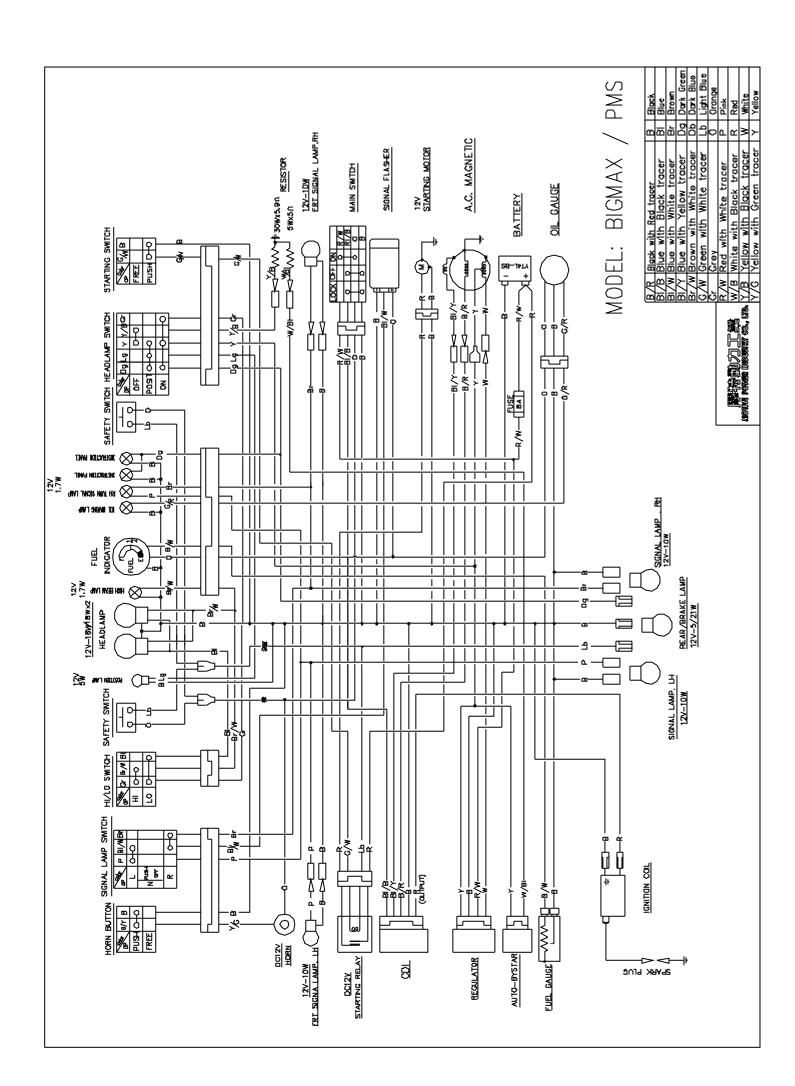




## C. Wheel bearing part

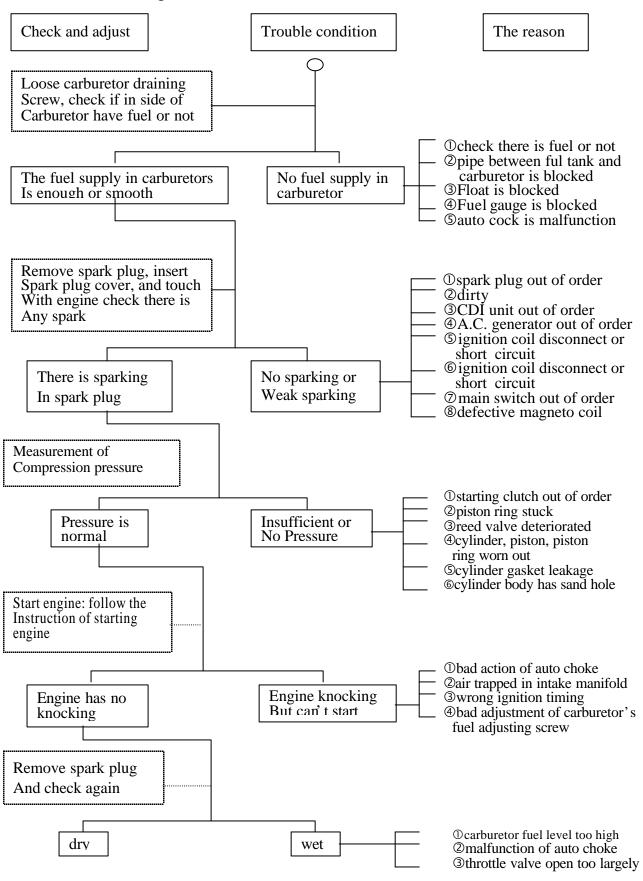




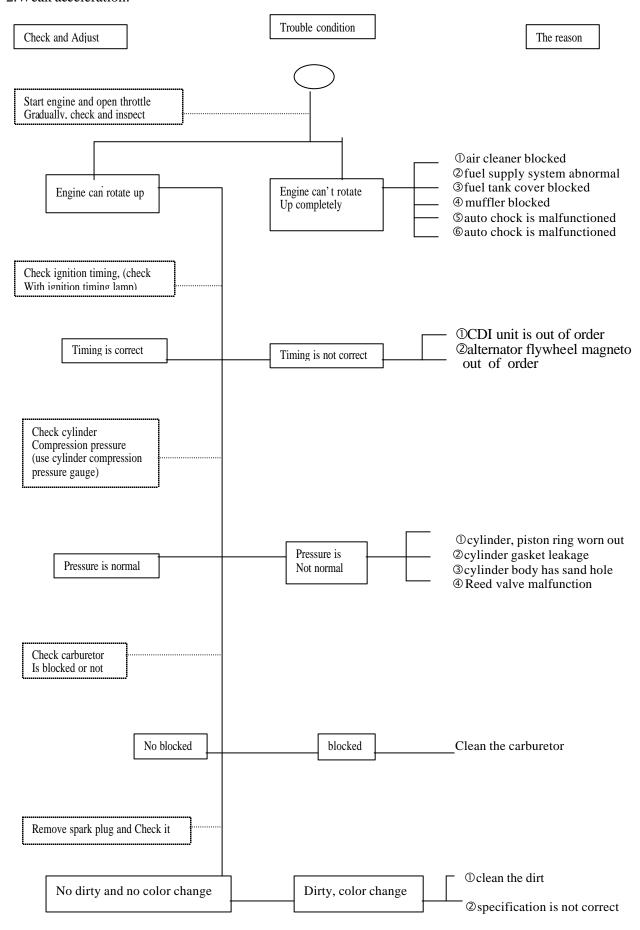


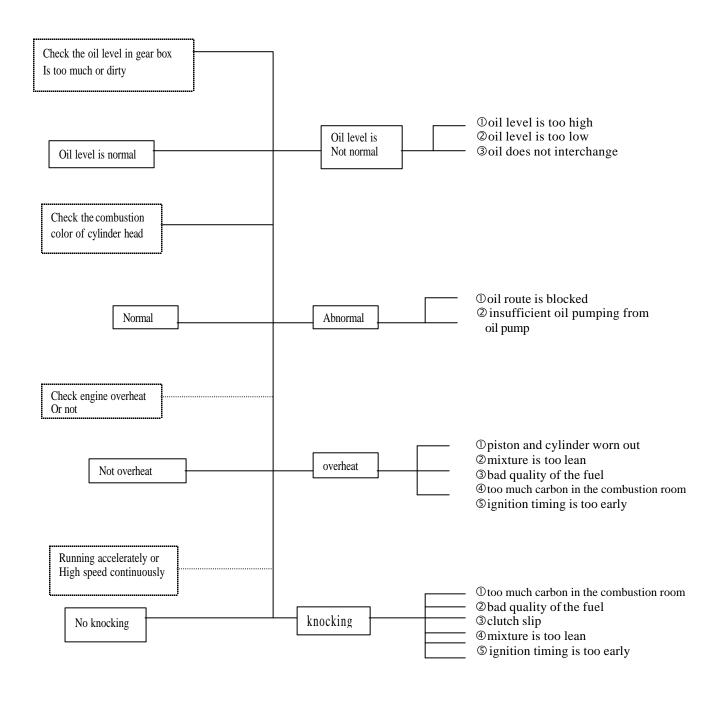
### (5) Trouble shooting:

1.difficult starting or can't start:

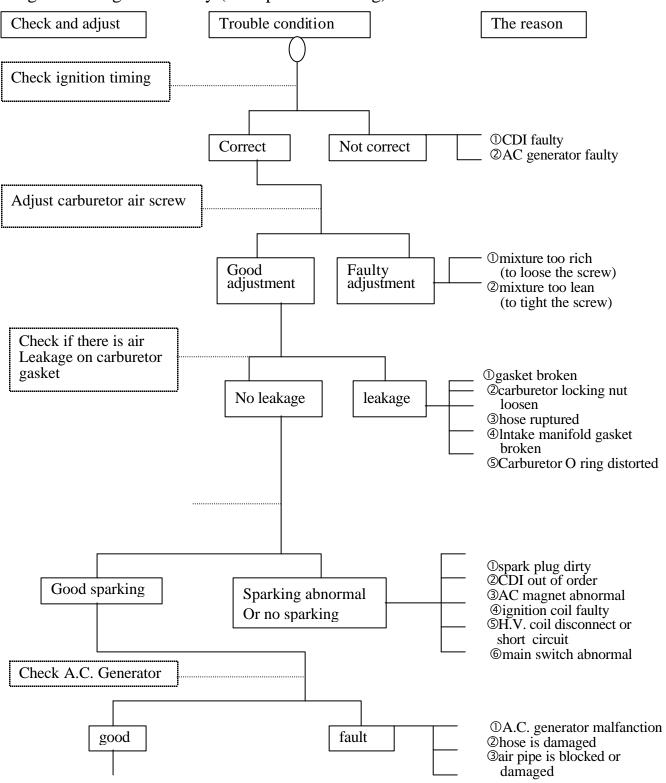


#### 2. Weak acceleration:

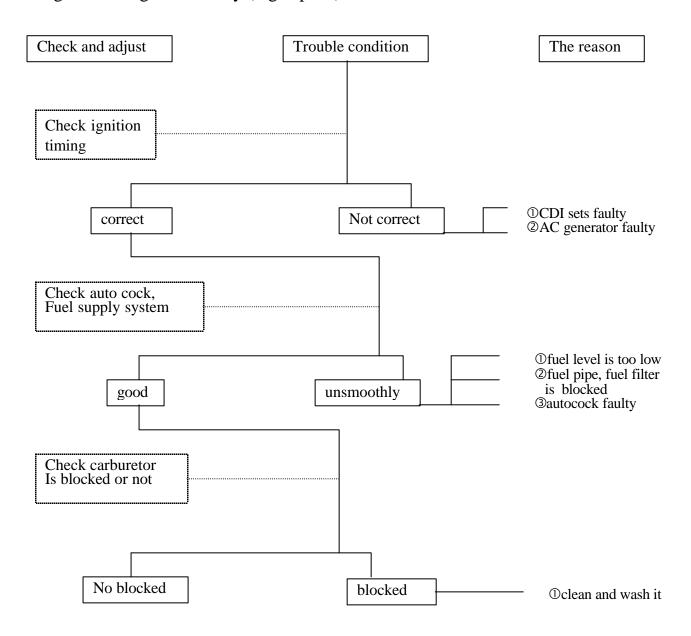




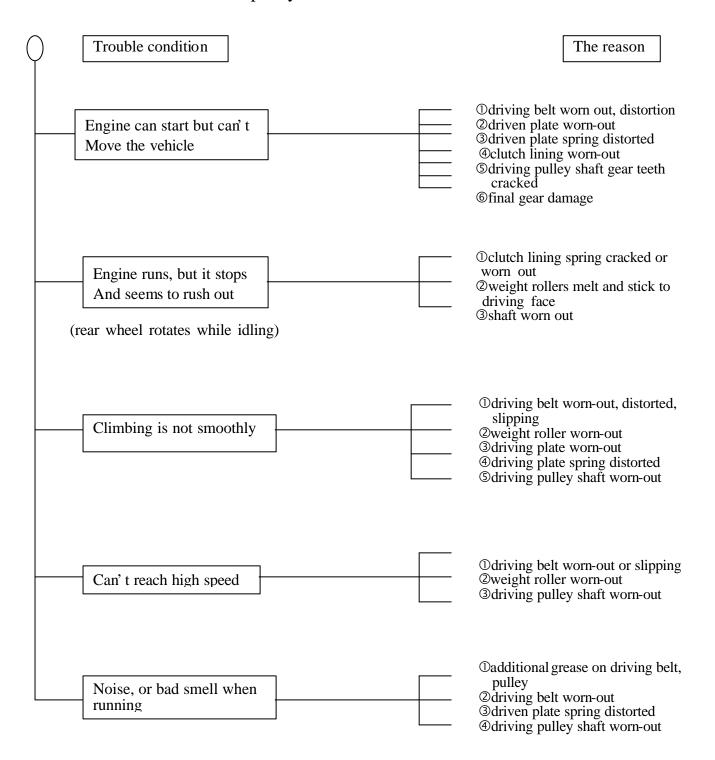
#### 3. Engine running unsmoothly (low speed and idling)



## 4. Engine running unsmoothly (high speed)

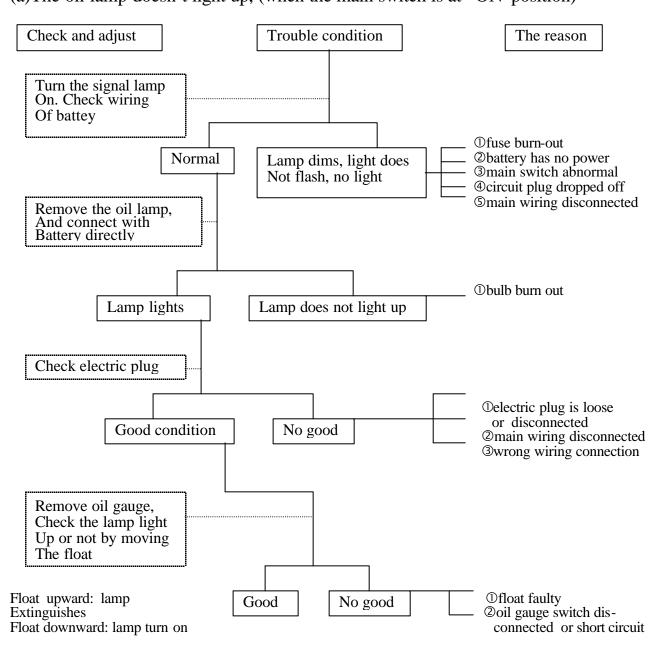


#### 5.Clutch, drive and driven pulley

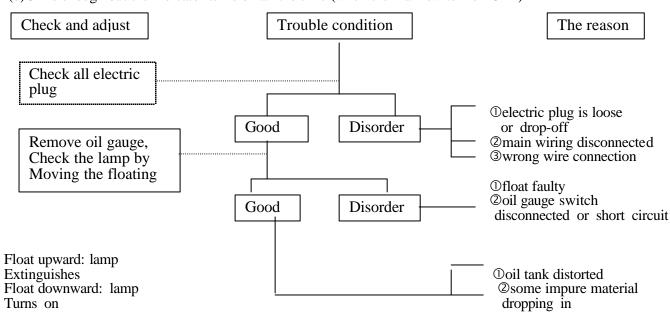


#### 6.Handlebar steering astrayed when running. Trouble condition The reason (front and rear wheel pressure are normal) ①steering column lock nut locked too tightly Handlebar operates heavily ©steel ball cracked Orear, front wheel bearing swings Front and rear wheel swings Ofront, rear wheel rim distorted 3 front axle nut is loose Ofront and rear wheel center not well-Handlebar astrayed to one direction aligned Ofront fork crooked 7. Front, rear damper not in balanced Trouble condition The reason (front and rear wheel pressure is normal) ①damper spring is too soft ©carrying weight is too large Damper is too soft 3 damper oil leakage ①front fork guide rod crooked Damper is too heavy ②damper and damper cover cracked ①problems in damper tube and spring Damper has abnormal noise ②damper and damper cover cracked 8.Brake disorder. Trouble condition The reason (adjustment according to standard procedure) Brake plate" "mark ①brake lining worn-out ②bake lining cam worn-out points 3brake cam worn-out **4** brake hub worn-out ①brake lining worn-out Noise when brake ②Alien material attached on brake lining 3 Contact surface of the wheel hub becomes rough Faulty performance ①brake cable over stretching or moving unsmoothly ②brake lining contacting surface not evenly 3 water or sand drop into brake system Osome grease on brake lining surface

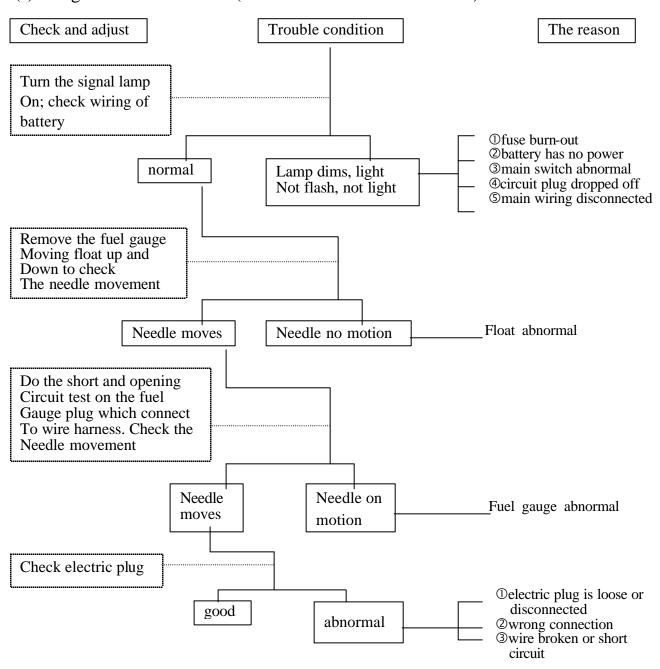
## 9.Oil indicator malfunction (a) The oil lamp doesn't light up, (when the main switch is at "ON" position)



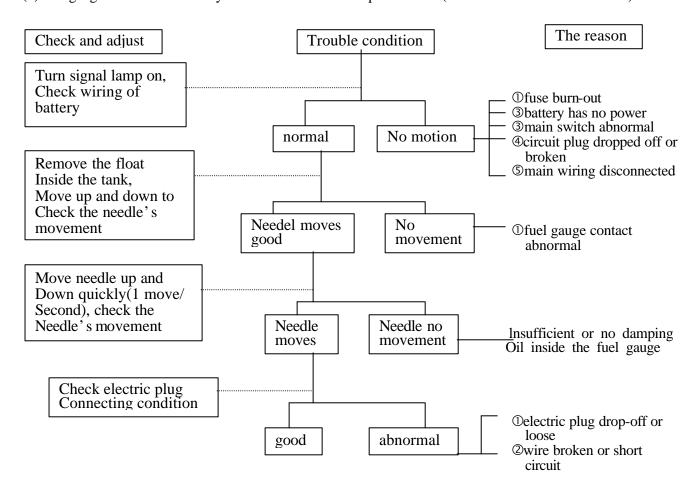
#### (b)Oil is enough but the indicator turns on all the time (when the main switch is "ON")



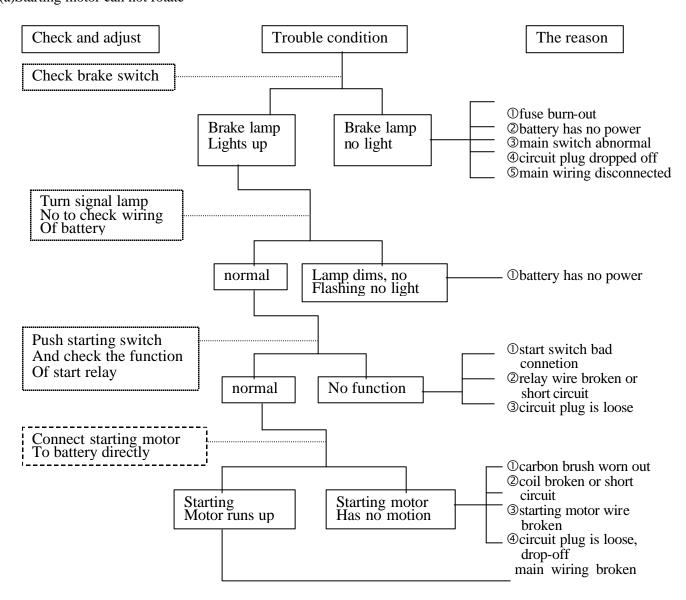
# 10.Fuel indication malfunction (a)wrong fuel level indication(when the main switch is "ON")



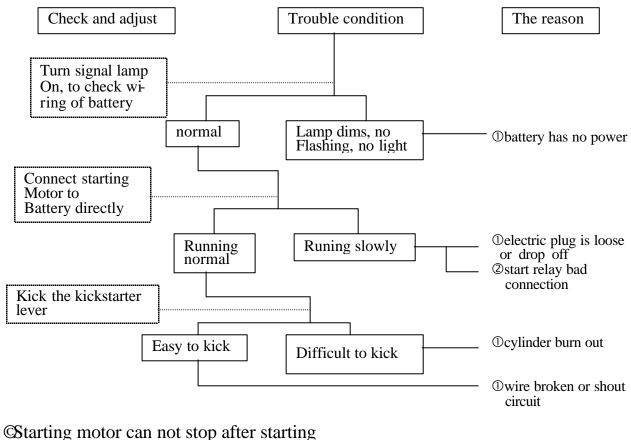
(b)Fuel gauge needle is not steady and sometimes moves up and down (when the main switch is "ON")

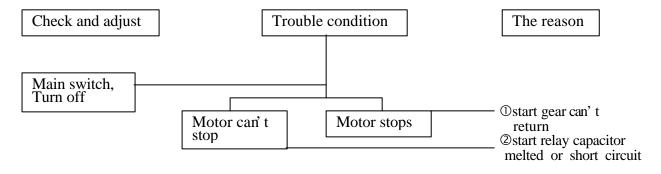


# The starting motor abnormal (a)Starting motor can not rotate

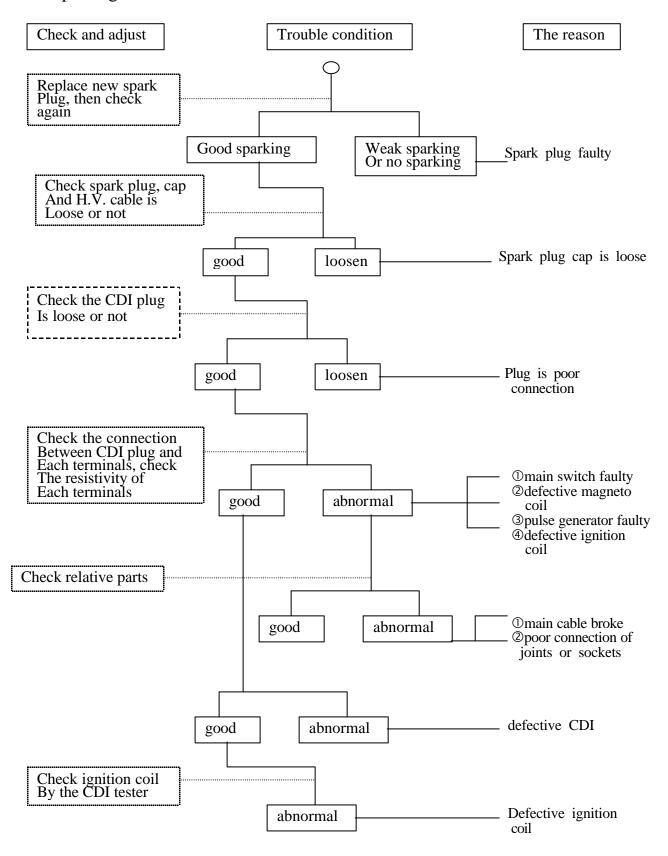


#### (b)Starting motor running slowly or no pick-up

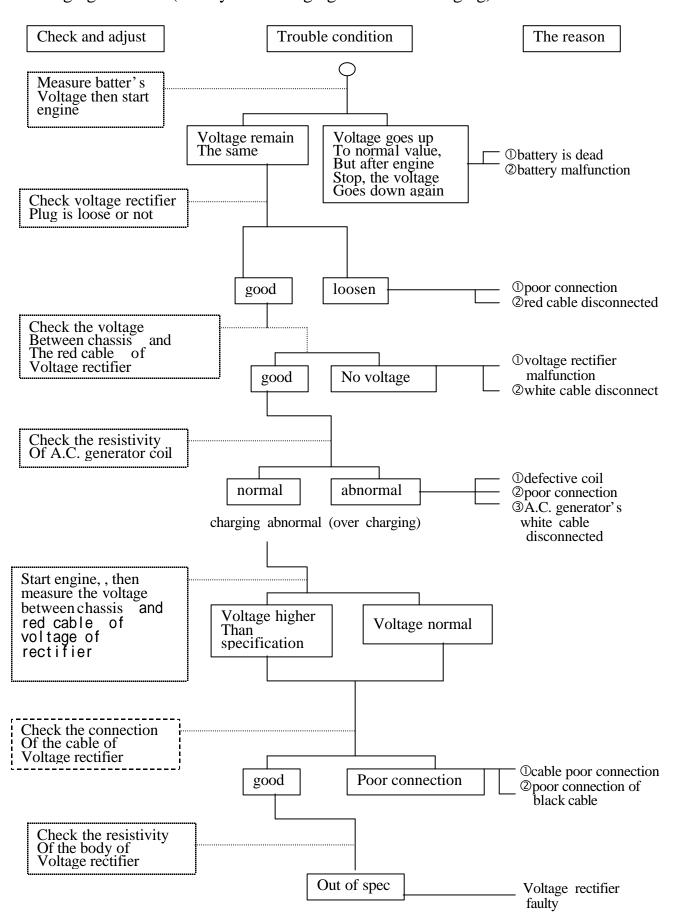




#### 12.No sparking



#### 13. Charging abnormal(battery over charging or over discharging)



## 3. Checking and Adjustment:

- (1)Regular checking table
- (2)Battery
- (3)Cleaning air cleaner
- (4)The final reduction 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)Regular checking table:1. [O] mark indicates periodical checking2. [ ] indicates changing the parts

					Cł	necking	period					
l l		gen-era	first		ome		office		١,,			
	Item		1	month	every6	every12	every1	every3	every12		ement	Remark
	_		che-cki	or Initial	months	months	months	months	months	stan	dard	
			ng	500km	or 5000km	or 10000km	or 1000km	or 2500km	or 10000km			
	Handlebar	Loose or swing										
0.0	steering	Operation										
us	column	Turning angle										
pe		Damaged										
Suspension	front fork	Shaft fixed condition										Check from Stering column
		Shaft:loose								- Cl		Check from Stering column
	Lever	a. clearance								Front:	rance: 5 -7mm 5 -7mm	
		b. movement of brake										
	D 1 11	loose or damage										
	Brake cable	Change brake cable								ever	y 2 ears	
Br	Brake cam	worn out										
Brake		a. clearance between hub										
	Wheel hub and brake shoe	and lining										
		b. brake shoe and brake lining worn-out										
		c. wheel hub worn and									dard l 10.0mm	
		damaged	damaged								lim	it of
	Front wheel									use:rear:	111.0mm	
	axle	damaged or distorsion										
	Rear wheel axle	damaged or distorsion										
										unit: kg/c	mʻ;1 driver	
		Pressure								front tire	rear tire	]
										2.0	2.0	1
	tire	Cracked or damaged										
₹		tire thread worn out								Change tin according	e to mark	
Wheel		tire surface or other								ueeorumg	1111111	
_		intruders								Front axle	nut torque	
										5.6-6.0kg		
	Axle	Tighten the bolt and nut								rear axle n	ut torque	
										11.0-13.01	cg-m	
										Swingness Vertical: b	limit	
	Rim	swingness and damage								Vertical: b 2.0mm	eiow	
	Killi	condit-ion								2.011111 Horizpmta	ıl:be:pn	
L					<u> </u>			<u> </u>		2.0mm	, , ,	

					Cł	necking	period				
Item		gen-era	first		ome	Î	office		T 1		
		1	month or	every6	every12	every1	every3	every12	Judgement standard	Remark	
			chec-ki	Initial	months or	months or	months or	months or	months or	Standard	
			ng	500km		10000km	1000km	2500km	10000km		
۷.		Clearance on									
wheel	Bearing	Front axle									
el		Clearance on rear axle									
	G	Damage									
	Spring	Condition									
	Ass' y part	loose									
	Cnnecting	loose or damage									
Re	part	condition loose or damage									
ear	Brake cam	condition									
Rear Damper	Suspension	Looseness on									
dur	arm	Connecting									
er		Part Oil leakage									
		Damaged									
	Absorber	Condition									
		Loose on ass' y									
	Cl · l · l	part Function									
	Clutch and Shift mec-	Gear oil	_								LH crank
T	hanism	leakage									case
Transmission	Gear oil	Change gear oil								every 2 ears	90C.C.
	Ignition	Spark plug								Clearance: 0.6~0.7mm NCK:BP7HS OR SAME SPEC	
	Start Mechanism	Starting motor gear									
Electric	Wiring	Recharge Function									
tric	Rattery	Electrolyte level								Level between "UPPER" and "LOWER"	
	Battery	Electrolyte gravity								When 20 Specific gravity: 1.270-1.290	
	Wire	Looseness or									
<u> </u>	circuit	Damage on plug		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>

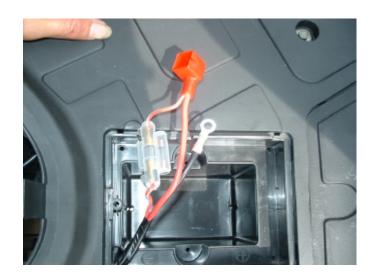
				Ch	necking	period					
		gen-era	first		me		office		Judgement		
	Item		l che-cki	month or	every6 months	every12 months	every1 months	every3 months	every12 months	standard	Remark
			ng	Initial	or	or	or	or	or	Startage	
			8	500km	5000km	10000km	1000km	2500km	10000km		
		Performance, Noise									
		Low speed, Acceleration								Idling:1900± 100rpm	
		Exhaustion									Check the color of exhausting-air
	_	Air cleaner									
	Engine parts	Cylinder, cyl- Inder head, inlet Pipe, locking Condition								Locking torque Cylinder head: (cold) 1.0-1.2KG-m inlet pipe: cold) 1.0-1.2kg-m	
Eng		Compression pressure								Using starting motor. 7kg/c m²-500rpm 6kg/c m²-600rp m	for 110cc for 50cc
jine		Oil leakage									
me	Lubrication system	Oil quantity, Dirty									
cha	icati	Oil quantity,									
Engine mechanism	on	Oil filter blocked									
		Fuel quantity									
	Fue	Fuel leakage									
	Fuel system	Clean Carburetor									
	em	Carburetor's Throttle and Choke function					_	_	_		
		Carburetor Float height									
		Carburetor Adjustment									
		Change fuel pipe								every 4 years	

Item				Cł						
		gen-era first home		ome	office			Judgement		
		l che-cki	month or Initial	every6 months or		every1 months or	every3 months or	every12 months or	standard	Remark
		ng	500km	5000km	10000km	1000km	2500km	10000km		
<b>T</b>	Function									
Lamp system	Dirty or broken									
Horn, signal Lamp, reflector	Function									
lock	Function									
Rear view mirror	Dirty or broken									
License plate	Dirty or damaged									
Dashboard	Function									
Muffler silencer	Losseness or Damage on Ass' y part									
	Function									
chassis	Loose or Damaged									
The previous Abnormal case	Confirm it does Not happen Again									
others	Chassis Lubrication									
	Decarbonate on Combusion room And muffler									

#### (2)Battery: Recharge when power is out

- 1. Open the cover and remove the battery cover.
  - $\rightarrow$  Take out the battery,
- 2.Remove the negative cable and then the positive Cable, → take out the battery to recharge.
- 3.To re-assemble the battery, please follow the opposite Procedure of disassembling after recharging





#### Note:

A. The battery is totally sealed, do not remove seal bolts when recharging

B. It's no need to add any electrolyte for this re-filling free battery

Please recharging(12V) by the following current

Standard recharging: 0.5A × 5-10 hr or rapid recharging: 5A × 30min. (110c.c.)

Standard: 0.4A \* 4-10Hr or Rapid:4A \* 30min(50cc)

#### (3)Cleaning air cleaner

- 1.Remove air cleaner cover
- 2. Take out the air cleaner filter
- 3.Clean the filter by the compressor air
- 4. Assemble the air cleaner by reversing above procedure

Note: Do not start the engine When the air cleaner is Not installed





#### (4) The final reduction 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 90c.c. gear oil and then lock the filling bolt.
  - e. Locking torque:1.8kg-m



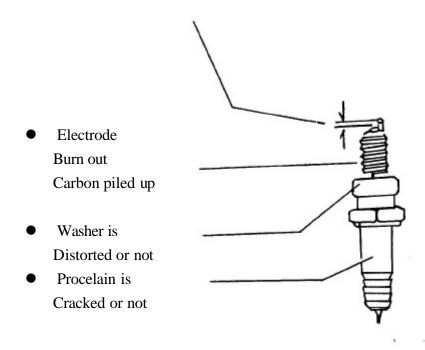
Note: Be sure the crankcase, tire or wheel are cleaned if there is grease/oil on it

## (5)Spark plug

- 1.Remove spark plug
- 2.Check the spark plug electrode and check if it is Burnt out or not and carbonized or not
- 3.Clean the electrode, if it is dirty
- 4.Spark plug specification

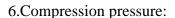
NGK:BY7HS or same spec.

• Gap of spark plug:0.6~0.7mm



#### (6)Compression pressure measurement:

- 1. Measure it when the engine is warm.
- 2. Open the seat, remove the luggage.
- 3.Remove the cover.
- 4.Remove spark plug then place comp-Ression pressure gauge.
- 5. Fully open the throttle, kick on kickstarter 5
  Times continuously, measure the compression
  Pressure.



110cc: 7kg/c m<sup>2</sup>-500rpm 50cc: 6kg/c m<sup>2</sup>-600rpm

7.when the compression pressure is too low, check the following:

- a. cylinder head gasket cracked.
- b. piston cylinder worn out.
- c. piston ring worn out.
- 8.If the comperssion pressure is too high it is due To carbon piled up on combustion chamber and Piston tip.





### (7) Ignition timing:

This scooter is using CDI set, it is no need to adjust ignition timing.

If ignition timing is not correct, check the CDI sets AC magneto, change it if it is abnormal.

checking ignition timing:

- 1. Open the seat, remove the luggage compartment
- 2.Remove the body cover
- 3. Remove fan case.
- 4.Check with ignition timing lamp.

keep the engin running at 1,900  $\pm$  100 r.p.m If the checking mark should lay in  $\pm$  3 apart

From "F", mark.

5.ignition timing: B.T.D.C.

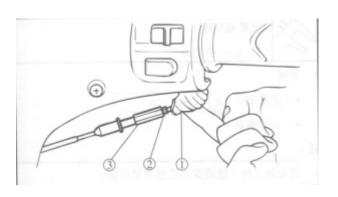
17° ±3° /@ 1900rpm

### (8)Throttle cables adjustment:

- 1.check the clearance of throttle twist grip.
- 2.Normal clearance:1.5-3.5mm
- 3.Adjust it by:
  take away the rubber
  loosen the nut

rotating the adjuster nut to adjust the

clearance, change it if the throttle cables can't be adjusted.



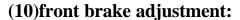


## (9) Idle adjustment:

- 1.remove left body cover
- 2.start the engine and connect the tachometer
- 3.adjust the throttle valve screw to the specified revolution 1900 ± 100rpm
- 4.if the idling rpm is still unsteady or fuel up is not smooth, please adjust it by followings.
  - a. Screw in the air adjust screw clockwise, then screw out counterclockwise.

Recommended loop:

- b. Rotate air adjust screw clockwise and counterclockwise to find out the highest revolution location.
- c. Rotate the throttle valve screw to idling condition.
- d. Fuel up gradually until the idling running rpm is steady.
- e. If the rpm is still not steady please repeat above procedure.



1.check the clearance of front brake lever.

Clearance:2-5mm

- 2.if the clearance is beyond, check whether:
  - a. The air mix into the pipe/caliper.
  - b. The disk brake system is leaking.

### Note:

Trybrake lever to see if it's loose. Check the brake fluid. Once air mixed in The fluid pipe, which will reduce or Damage the brake efficiency or even its Function.

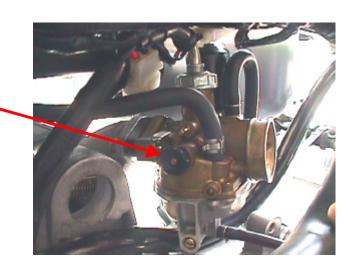


#### 3.check the brake fluid level:

- a. Refill the brake fluid when the fluid eel is under the LOWER line.
- b. Brake fluid specification:SAEJ-1703F-DOT3&DOT4.

#### Note:

- a. To prevent the fluid 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 fluid not complied with spec.
- d. In case the fluid 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

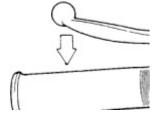
Beyond the above standard,

Adjust it by rotating the

Adjuster nut.

a. Lefthanded rotation enlarge the clearance.

b. Righthanded rotation reduce the clearance.



### Note:

When the arrow of rear brake indicator lay in The arrow of left crankcase, change the brake Lining.



## (12)Tire:

1.Check the tire air pressure Notice:

Check the tire before running

2. Tire pressure:

Front tire: 2.0 kg/c m<sup>2</sup> Front tire: 2.0 kg/c m<sup>2</sup>

3. Tire dimension:

Front tire: 120/70-12 Rear tire: 130/70-12

4.Check is there any sharp Object pierce the tire.

5.Check the depth of tire Thread.

a. Depth(front & rear):

According to mark of tyre

"to change a new tyre



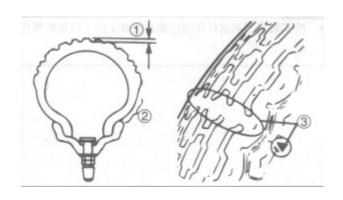
a. check and adjust the tire pressure when it is too low.

The pressure is according to the carrier, Driver, passenger, accessories and cruise Speed.

- b. Proper loading is very important for steering, riding, braking, performance and safety.
- c. Never carry any parcel unfastened.
- d. Load the heaviest parcel on the center of vehicle, balancing the weight on both sides.
- e. 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.







# 4.Dismantling, maintaining, repairing and assembling operation:

- (1)Lubrication system
- (2)Plastic parts
- (3)Engine dismantling
- (4)Drive pulley, starter, clutch, driven pulley
- (5)Cylinder head, cylinder, piston
- (6)AC Generator flywheel magneto
- (7)Final transmission mechanism
- (8) Crankcase, crankshaft.
- (9)Carburetor, reed valve, auto cock
- (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.

- A. If there is too much white fume from exhaust system, which means too much Carbon piled up on the spark plug or the oil quality is not good.
- B. Engine over heating:
  - a. The adjustment of oil pump is not properly.(1ack of oil)
  - b. The quality of oil is not good.
- C. Piston over burning.
  - a. There is air in the oil pump system.
  - b. Oil pump is out of order.
- D. The route from oil tank to oil pump is blocked.
  - a. Ventilation hole on the tank cover is blocked.

Note:1. When removing oil pump, do not drop any unexpected objects into the oil pipe.

- 2.Please release the air if there is air trapped in the oil pipe.
- 3.Locking torque of oil pump:0.8-1.2kg-m

# 3.Removing oil pump.

Clean the oil pump and Crank case before operation

- a. Remove the luggage and rear bracket.
- b. Remove the input/output oil pipe.
- c. Take out the oil pump by removing
  The locking screw on oil pump and
  Oil gauge cable.



4.check oil pump.

Remove oil pump and check:

- a. O-ring is distorted or not.
- b. contactpart of crankcase is injured or not.
  - d. Oil pump body is damaged or not
  - e. The gears are damaged or not.
  - f. Check seal and see if there Is oil leakage or not.
  - g. Never dismantle oil pump itCan not function well afterDismantling.



- 5. Assemble the oil pump.
  - a. Assemble the oil pump by reversing

Above procedure.

O-ring of oil pump should be lubricated by

Grease or oil, then place on cankcase.

The contact surface of oil pump and crank

Case should be assembled firmly.

The gears of oil pump should be lubri-

Cated by grease.

b. Be sure oil pump screw is tightened nitely Locking torque:0.8~1.2kg-m

After assmebling, check the following:

- a. the adjustment of control cables
- b. Is there air in oil pipe.
- c. oil leakage at any location.
- 6.Releasing air in the oil pump.
  - a. If there is air in the oil pipe, it will cause engine lubrication trouble
  - b. Releasing air operation means the release of air trapped in the air pipe oil pipe and oil pump. Please firstly release air from the oil pipe
- (a) Fill up specific amount of oil to oil tank.
- (b)Place dry cloth under the oil pump.
- ©Remove oil pipe.
- (d)Use injector to fill up the oil in the oil pump body and oil pipe. Be sure the oil pipe and oil pump are full of oil before assembling.
- (e)After assembling, check if there is still air trapped in the oil pipe.

# (2)Dismantling & assembling of plastic parts

1.screwing out the screws of front windshield



2. Screwing out the screws of windshield & front inner cover.

→take off the windshield.



- 3.Screwing out the screws of the rear carrier
  - → take off the rear carrier



- 4.Open the seat, screwing out the 9 screws of luggage compartment
  - →take off the luggage compartment.



- 5.Screwing out the screws of front body cover
  - →take off the front body cover.



6.Screwing out the screws of left side cover

→ take off the left side cover.



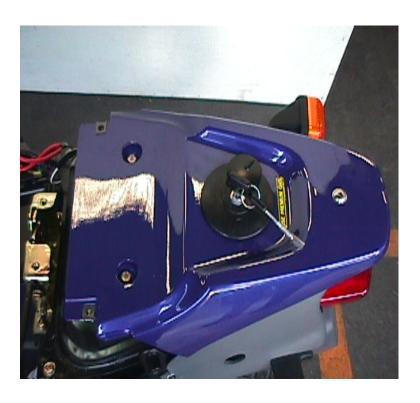
7.Screwing out the screws of right side cover

→ take off the right side cover.





# 8.Screwing out the screws of rear cover → take off the rear cover.



9.Take off the upper & lower handle cover firstly, then screwing off the screws of front fender.





10.screwing out the screws of front inner cover.



11.screwing out the screws of front mudguard.



12.Before taking off the step floor, screwing out the screws of battery cover firstly 
→ take off the battery cover.



13.Disconnect the negative cable firstly, then positive cable 
→ take out the battery.



- 14.Screwing out the four screws of the step plate
  - → take off the step plate.
- 15. Screwing out the screws of step floor & lower mudguard
- →take off the step floor & lower mudguard.



Locking torque: M6:0.7-1.1kg-m M5:0.35-0.5kg-m

Note: Pay attention not to clamp or scraping the cables by the plastic parts when assembling.

# (3)Dismantling Engine

- A. Dismantling engine.
  - 1. Take off the luggage compartment.



2.Remove vacuum pipe, fuel pipe, oil pipe. Cable of auto choke and carburetor.



4.Remove the cap of spark plug.



5.Remove engine hanger shelf's nut, rear damper blot and rear brake cable.



6.Remove the engine.



# B. installing engine.

- 1.Install engine please reserse above procedure.
- 2.Locking torque:

M8:2.0~3.0kg-m

M10:3.0~4.0kg-m

M12:5.0~6.0kg-m

- 3. After installing, inspect and adjust the following:
  - a. the wire connecting.
  - b. throttle cable, oil control cable.
  - c. fuel and oil route.
  - d. rear brake adjustment.

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

- 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
  - 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 stain on the driving belt and driven plate.

### B. Measurement data

Item	Standard value(mm)	Limit of use(mm)
	110cc	110cc
The bush inner dia of Slide driving plate	23.98-24.052	24.240
Driving plate's boss Outer dia	23.974-23.960	23.934
Weight roller outer Dia	15.992-16.008	15.500
Clutch cover	120.0-120.2	120.500
Driven plate spring Free length	154.600	149.300
Driving plate sets Outer dia	33.965-33.985	33.940
Slide driven plate Inner dia	34.000-34.025	34.050

# C. Driving pulley.

1.Remove the 10 screws of left cover.



# 2.Take off the left cover.



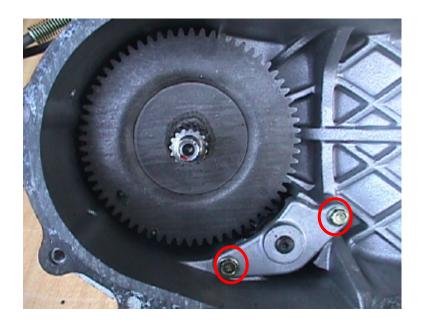
3.Remove the fixing nut of clutch.



4. Take off the ramp plate, belt & rear clutch, and the driving plate.



7. Loosen 2 hexagon screws, and take off the driving gear starter fixing plate set.



# 8.Remove the start idle gear set.



9. Assenbke driving pulley, please reverse above procedure.

Locking torque:

1.M10 nut of driving pulley:3.5~4.0kg-m 2.M10 nut of clutch outer:3.5~4.0kg-m

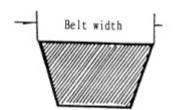
### 10. Checking the driving belt

- (1) check whether it is cracked or its rubber and fiber are loose or not also check if they are extraordinarily worn out.
- (2)driving belt width:

limit of use: change it when below 16.5mm.

### 11. Disassemble slide driving plate set

- (1)Remove bush of slide driving plate
- (2)Remove screw, and disassemble the cover of slide driving plate.
- (3)Remove ramp plate.
- (4)Remove weight rollers.



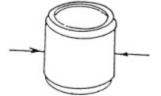
### 12.Checking list:

- (1) Check the wearing condition of weight roller. limit of use:change it when below 15.5mm.
- (2) Check inner dia of slide driving plate's gasket.

Limit of use:

Change it when above 20.068 mm

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



Check the wearing condition

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

Limit of use: change it when

Below 23.934mm