

### **3. INSPECTION/ADJUSTMENT**

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# **3**

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## **INSPECTION/ADJUSTMENT**

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# 3. INSPECTION/ADJUSTMENT

## SERVICE INFORMATION

### GENERAL



#### WARNING

- Before running the engine, make sure that the working area is well-ventilated. Never run the engine in a closed area. The exhaust contains poisonous carbon monoxide gas which may cause death to people.
- Gasoline is extremely flammable and is explosive under some conditions. The working area must be well-ventilated and do not smoke or allow flames or sparks near the working area or fuel storage area.

## SPECIFICATIONS

### ENGINE

Throttle grip free play : 2\_ 6mm  
 Spark plug : NGK: BR8HSA  
 Spark plug gap : 0.6\_ 0.7mm  
 Idle speed : SH10DA:2000±100rpm SF10DA:1900±100rpm

### Lubrication oil capacity:

At disassembly : 1.7 liter

At change : 1.4 liter

### Gear oil capacity :

At disassembly : 0.12 liter

At change : 0.10 liter

Cylinder compression : 11.8±2kg/cm<sub>2</sub>

Ignition timing : BTDC 13.5°±2°/2000rpm

Coolant capacity : 1165cc

Radiator capacity : 825cc

Reserve tank capacity : 340cc

### CHASSIS

Front/rear brake free play: 20\_ 30mm

### TIRE

	1 Rider	2 Riders
Front	1.75kg/cm <sub>2</sub>	1.75kg/cm <sub>2</sub>
Rear	2.00kg/cm <sub>2</sub>	2.25kg/cm <sub>2</sub>

### TIRE SPECIFICATION:

Front : 120/70-12

Rear : 130/70-12

### TORQUE VALUES

Front axle nut : 49.0\_ 68.6N-m

Rear axle nut : 107.8\_ 127.4N-m

### 3. INSPECTION/ADJUSTMENT

#### INSPECTION AND MAINTENANCE SCHEDULE

(Note) 1. ○ means time for inspection.

2. ☆ means regular replacement for the specified parts.

This inspection and maintenance schedule is based upon average riding conditions.

Machines subjected to serve use, or ridden in unusually dusty areas, require more frequent servicing.

Inspection & Maintenance Item			Frequency				Judgment Standards	Remarks									
			Preride	1st month	Every 6 months	Every 12 months											
Suspension	Steering handlebar	Check for looseness and vertical play				○											
		Operating performance	○			○											
		Right/left turning angle				○											
	Front fork	Damage			○	○											
		Check for front fork pivot installation			○	○		Check steering stem									
		Check front fork pivot for looseness and abnormal noise				○		Check steering stem									
Brake System	Brake Lever	Front/rear brake lever free play			○	○	Free play: 10_ 20mm										
		Brake lever operation	○														
		Brake performance		○	○	○											
	Lever/Cable	Looseness, abnormal noise and damage		○		○											
	Brake disk/lining(Brake drum/shoe)	Disk-to-lining clearance			○	○											
		Brake disk(shoe) and lining wear				☆											
		Brake drum wear and damage				○	Standard:  Rear : 110 mm Service Limits:  Rear : 111 mm										
Moving Device	Tire	Tire pressure	○		○	○	<table><tr><td></td><td>Front</td><td>Rear</td></tr><tr><td>1 rider</td><td>1.75 kg/cm</td><td>2.25 kg/cm</td></tr><tr><td>Tire Size</td><td>120/70-12</td><td>130/70-12</td></tr></table>		Front	Rear	1 rider	1.75 kg/cm	2.25 kg/cm	Tire Size	120/70-12	130/70-12	
	Front	Rear															
1 rider	1.75 kg/cm	2.25 kg/cm															
Tire Size	120/70-12	130/70-12															

### 3. INSPECTION/ADJUSTMENT

Inspection & Maintenance Item			Frequency				Judgment Standards	Remarks
			Per ride	1st month	Every 6 months	Every 12 months		
Moving Device	Motor-cycle	Tire crack and damage	○		○	○		
		Tire groove and abnormal wear	○		○	○	Groove Depth: Front: 0.8mm Rear : 0.8mm	
		Imbedded objects, gravel, etc.	○		○	○		
		Axle nut looseness			○	○	Torque Values: Front axle nut 49.0_ 68.6N-m Rear axle nut 107.8_ 127.4N-m	Axle nut torque
		Check wheel rim, rim edge and spoke plate for damage		○		○	Rim runout at rim end: Front: Axial 2.0mm Radial 2.0mm Rear: Axial 2.0mm Radial 2.0mm	
		Check front wheel bearing for excessive play and abnormal noise				○		
		Check front wheel bearing for excessive play and abnormal noise				○		
Damping Device	Frame Spring	Damage						Shock spring free length
	Suspension arm	Connecting parts loose-ness and arm damage				○		
	Shock absorber	Oil leakage and damage				○		
		Assembly parts loose-ness abnormal noise				○		
Power Drive System	Clutch	Operation		○	○	○		
	Transmission case	Oil leakage and oil level			○	○	Oil level: Oil check bolt hole at lower hole edge	Rear wheel transmission case
Electrical Equipment	Ignition device	Spark plug condition			○	○	Plug gap: 0.6-0.7mm	
	Battery	Terminal connection				○		
	Wires	Loose connection and damage				○		

### 3. INSPECTION/ADJUSTMENT

Inspection & Maintenance Item			Frequency				Judgment Standards	Remarks
			Preride	1st month	Every 6 months	Every 12 months		
Engine	Body	Performance and abnormal noise			○	○		
		Conditions at low and high speeds		○	○	○		
		Exhaust smoke			○	○		
		Air cleaner			○	○		
	Lubrication system	Oil quality and quantity			○	○	<input type="checkbox"/> Oil level indicator Indicator light comes on when oil is insufficient	
		Oil leakage			○	○		
		Oil level	○					
		Check oil filter for clogging				○		
	Fuel System	Fuel leakage						
		Carburetor, throttle valve and auto bystarter				○		
		Check fuel filter for clogging				○		
		Fuel level	○					
		Fuel tube replacement					☆ Every 4 years	
Lights & Winker	Operation							
	Winking action, dirt and damage		○					
Buzzer & Steering Lock	Operation					○		
Rearview Mirror & Reflector	Rearview mirror position		○					Rearview Mirror
Reflector & License Plate	Dirt and damage		○					
Counter	Operation					○		
Exhaust Muffler	Joint looseness and damage					○		
	Exhaust muffler performance					○		
Body & Frame	Looseness and damage					○		
Abnormal Conditions Happened Last Time	Check if the abnormal conditions occur again		○					
Others	Lubrication points				○	○		
	Remove carbon deposits on combustion chamber, breather hole and exhaust muffler					○		

### 3. INSPECTION/ADJUSTMENT

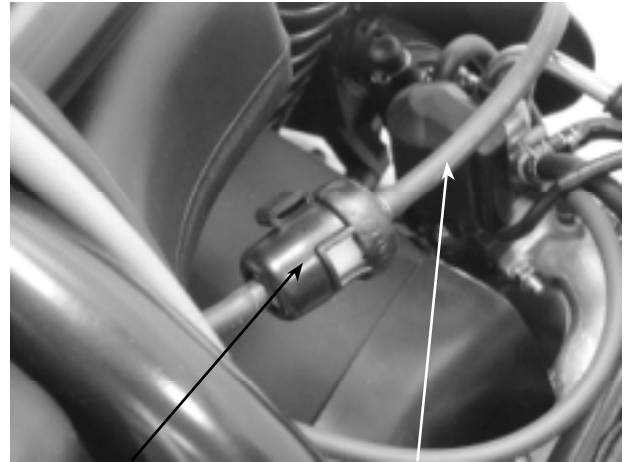
#### FUEL LINE/FUEL FILTER

Remove the center cover.

Check the fuel lines and replace any parts which show signs of deterioration, damage or leakage.

Check for dirty or clogged fuel filter and replace with a new one if it is clogged.

- \* Do not smoke or allow flames or sparks in your working area.



Fuel Filter

Fuel Line

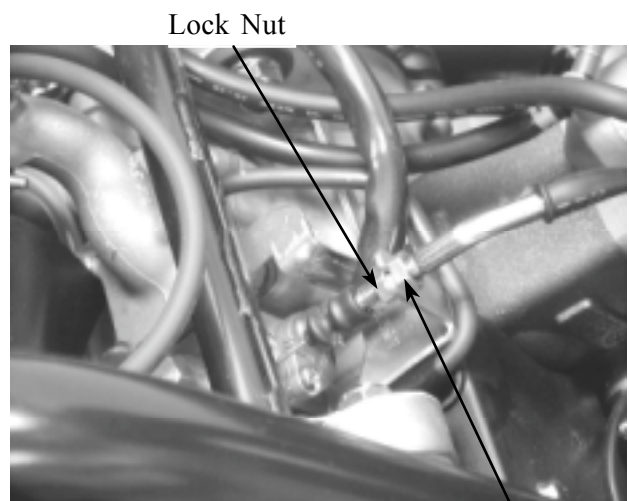
#### THROTTLE OPERATION

Check the throttle grip for smooth movement. Measure the throttle grip free play.

**Free Play:** 2\_ 6mm



Major adjustment of the throttle grip free play is made with the adjusting nut at the carburetor side. Adjust by loosening the lock nut and turning the adjusting nut.



Lock Nut

Adjusting Nut

### 3. INSPECTION/ADJUSTMENT

Minor adjustment is made with the adjusting nut at the throttle grip side. Slide the rubber cover out and adjust by loosening the lock nut and turning the adjusting nut.

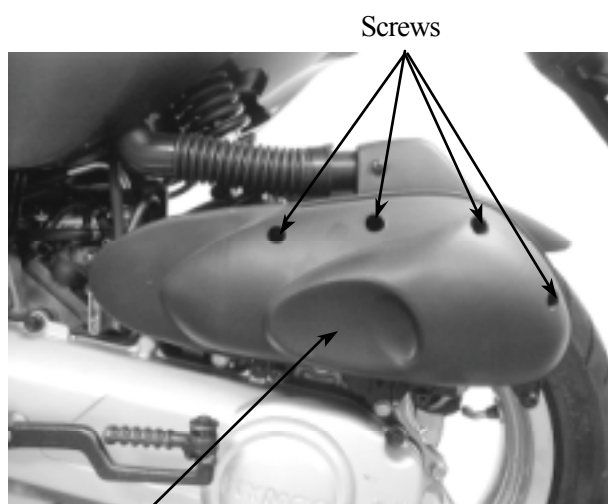


Adjusting Nut

Lock Nut

#### AIR CLEANER

Remove the seven air cleaner case cover screws and the cover.



Screws

Air Cleaner Case Cover

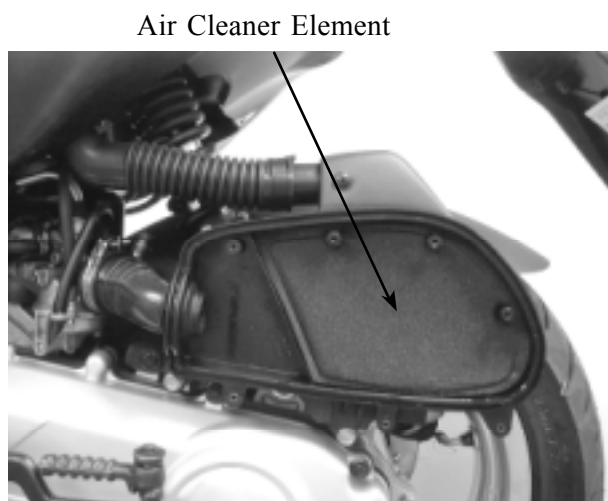
Remove the air cleaner element. Check the element and replace it if it is excessively dirty or damaged.

#### CHANGE INTERVAL

More frequent replacement is required when riding in unusually dusty or rainy areas.

**\***

- The air cleaner element has a viscous type paper element. Do not clean it with compressed air.
- Be sure to install the air cleaner element and cover securely.



Air Cleaner Element

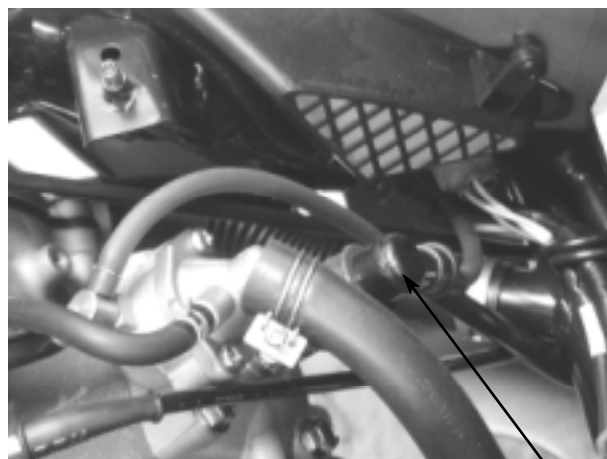
### 3. INSPECTION/ADJUSTMENT

#### SPARK PLUG

Remove the frame center cover.

Remove the spark plug cap and spark plug.  
Check the spark plug for wear and fouling deposits.

Clean any fouling deposits with a spark plug cleaner or a wire brush.



Spark Plug

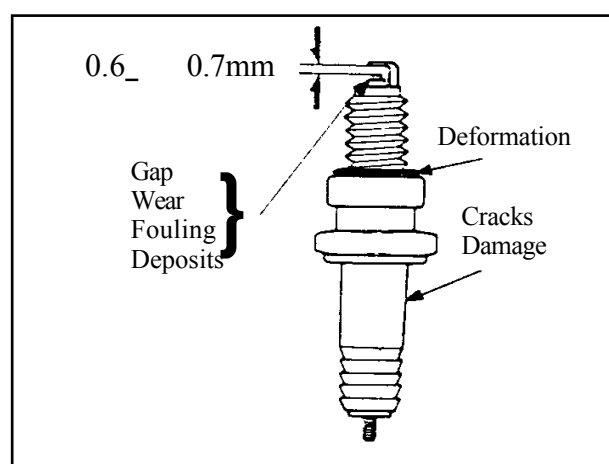
**Specified Spark Plug:** NGK: BR8HSA

Measure the spark plug gap.

**Spark Plug Gap:** 0.6\_ 0.7mm

- \* • When installing, first screw in the spark plug by hand and then tighten it with a spark plug wrench.

**Torque:** 7.8\_ 9.8N-m

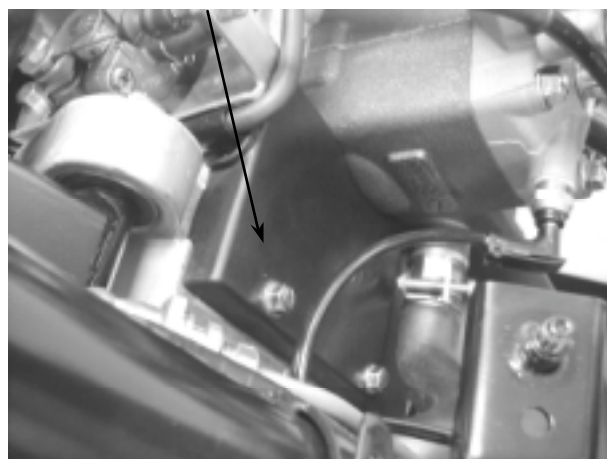


#### IGNITION TIMING

- \* • The CDI unit is not adjustable.  
• If the ignition timing is incorrect, check the ignition system,

Remove the two timing cap bolts and the timing cap.

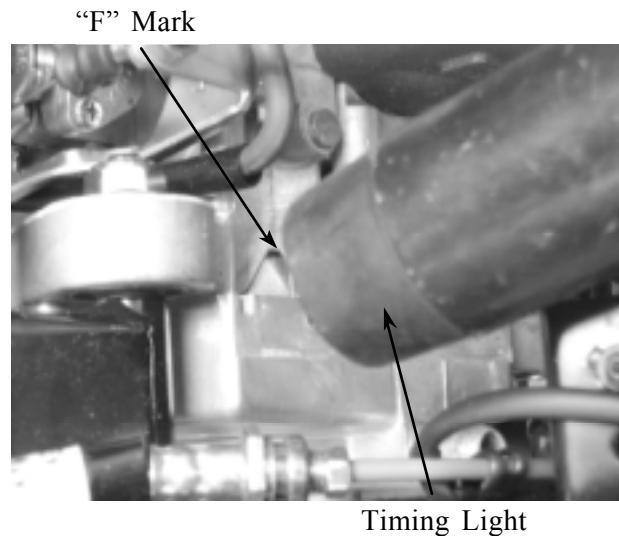
Timing Cap





### 3. INSPECTION/ADJUSTMENT

Check the ignition timing with a timing light. When the engine is running at the specified idle speed, the ignition timing is correct if the "F" mark on the flywheel aligns with the index mark on the crankcase cover. Also use a timing light to check the advance. Raise the engine speed to 4,000rpm. The index mark should be between the advance marks.



#### CYLINDER COMPRESSION

Warm up the engine before compression test. Remove the center cover and spark plug cap. Remove the spark plug. Insert a compression gauge. Open the throttle valve fully and push the starter button to test the compression.

**Compression:**  $11.8 \pm 2 \text{ kg/cm}^2$

If the compression is low, check for the following:

- \_ Leaky valves
- \_ Valve clearance too small
- \_ Leaking cylinder head gasket
- \_ Worn pistons
- \_ Worn piston/cylinder

If the compression is high, it indicates that carbon deposits have accumulated on the combustion chamber and the piston head.



Compression Gauge

### 3. INSPECTION/ADJUSTMENT

#### FINAL REDUCTION GEAR OIL

- \* Place the motorcycle on its main stand on level ground.

Stop the engine and remove the oil check bolt. The oil level shall be at the oil check bolt hole. If the oil level is low, add the recommended oil SAE90# to the proper level.

Install the oil check bolt.

- \* Make sure that the sealing washer is in good condition.

Oil Check Bolt Hole/Oil Filler



#### OIL CHANGE

Remove the oil check bolt.  
Remove the oil drain bolt and drain the oil thoroughly.  
Install the oil drain bolt.

**Torque:** 9.8N-m

- \* Make sure that the sealing washer is in good condition.

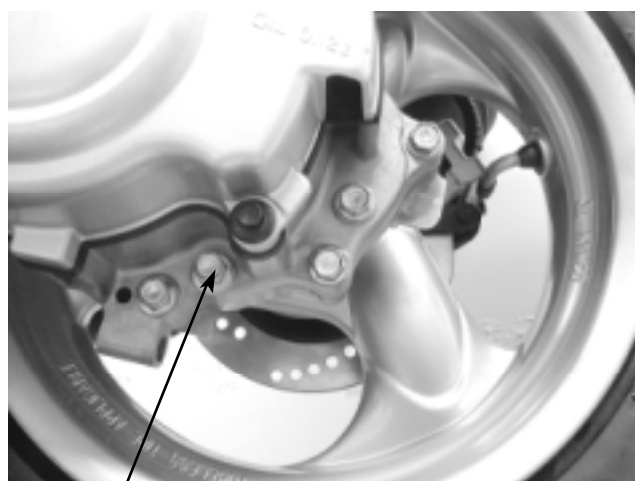
Fill the final reduction with the recommended oil SAE90#.

#### Gear Oil Capacity:

At disassembly : 120cc

At change : 100cc

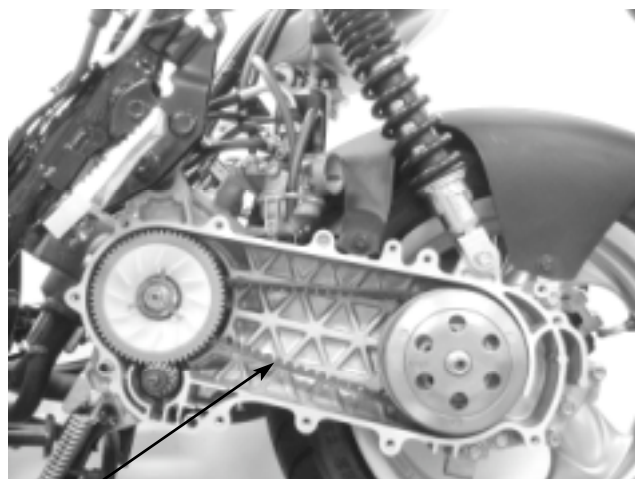
Reinstall the oil check bolt and check for oil leaks.



Oil Drain Bolt/Sealing Washer

#### DRIVE BELT

Remove the left crankcase cover.  
Inspect the drive belt for cracks or excessive wear.  
Replace the drive belt with a new one if necessary and in accordance with the Maintenance Schedule.



Drive Belt

### 3. INSPECTION/ADJUSTMENT

#### HEADLIGHT AIM

Turn the ignition switch ON.  
Turn on the headlight switch.  
Adjust the headlight aim by turning the headlight aim adjusting bolt.



Headlight Aim Adjusting Bolt

#### COOLING SYSTEM

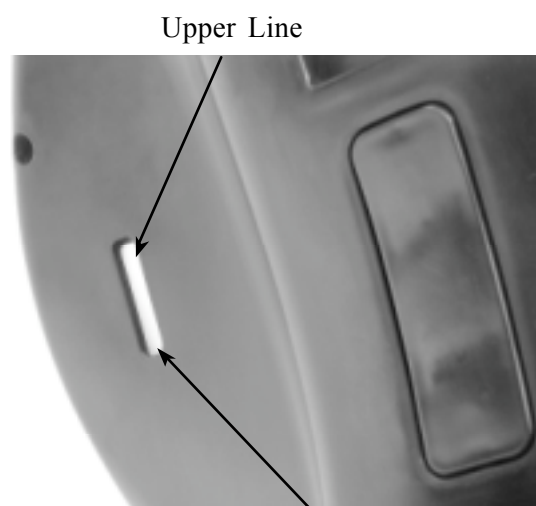
##### COOLANT LEVEL INSPECTION

Place the motorcycle on its main stand on level ground.

Check the coolant level of the reserve tank and the level should be between the upper and lower level lines.

If necessary, fill the reserve tank with recommended coolant to the "F" level line.  
**Recommended Coolant:** SIGMA Coolant  
(Standard Concentration 30%)

- \* The coolant level does not change no matter the engine is warm or cold. Fill to the "F" (upper) line.



Upper Line

Lower Line

##### COOLANT REPLACEMENT

- \* Perform this operation when the engine is cold.

Remove the front cover.

Remove the reserve cap.

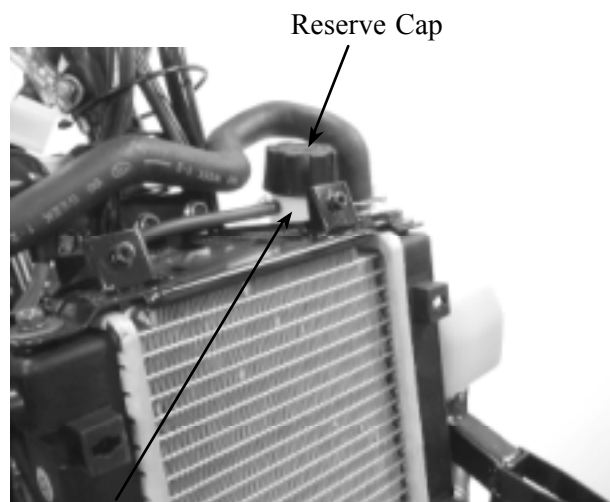
Remove the drain hoses to drain the coolant and tilt the motorcycle to the right and the coolant will drain more easily.

Drain the coolant in the reserve tank.

Reinstall the drain hoses.

Fill the radiator with the specified coolant.

- \* The coolant freezing point should be 5°C lower than the temperature of the riding area.



Reserve Cap

Reserve Tank

### 3. INSPECTION/ADJUSTMENT

Coolant capacity : 1165cc

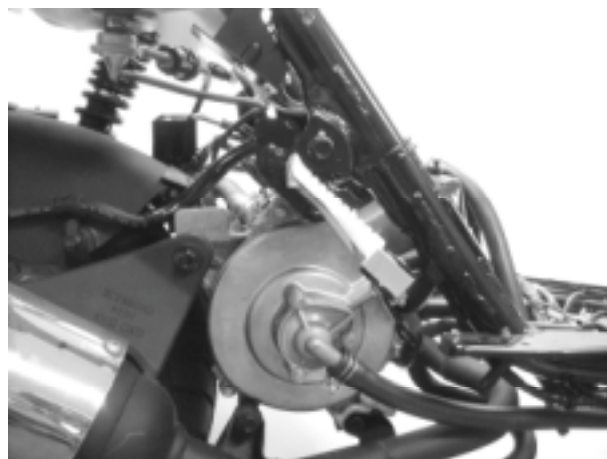
Radiator capacity : 825cc

Reserve tank capacity : 340cc

Start the engine and check if there is no bubbles in the coolant and the coolant level is stable. Reinstall the radiator cap.

If there are bubbles in the coolant, bleed air from the system.

Fill the reserve tank with the recommended coolant up to the upper line.

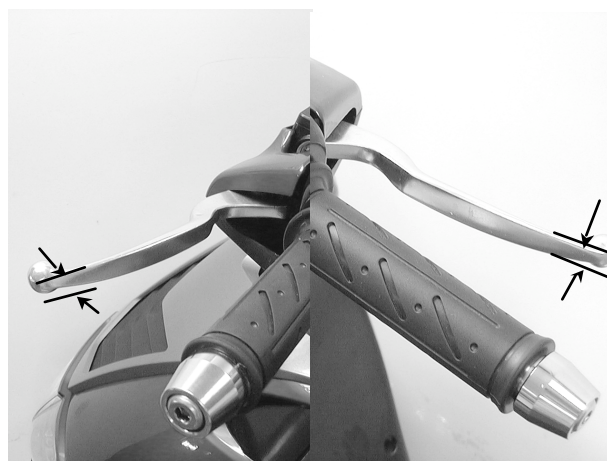


#### BRAKE SYSTEM

##### BRAKE LEVER

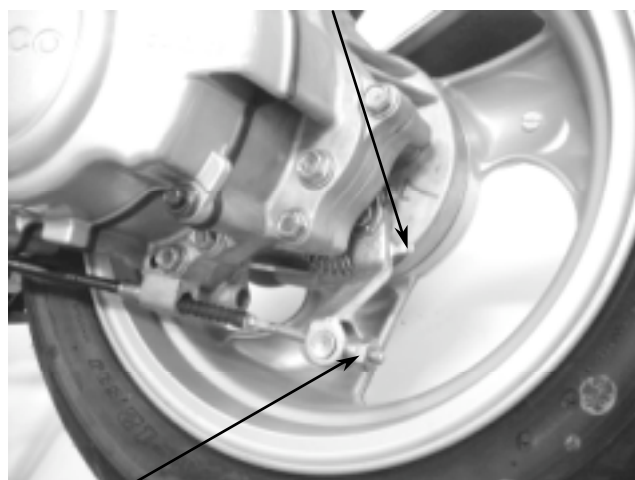
Measure the front and rear brake lever free plays.

**Free Play:** 10\_ 20mm



If the free plays do not fall within the limits, turn the right and left adjusting nuts for adjustment.

“Δ” Marks <Rear>



Adjusting Nuts



### 3. INSPECTION/ADJUSTMENT

#### **BRAKE FLUID**

Turn the steering handlebar upright and check if the front/rear brake fluid level is at the upper limit. If the brake fluid is insufficient, fill to the upper limit.

**Specified Brake Fluid:** DOT-4

- \* • The brake fluid level will decrease if the brake pads are worn.

Front Brake Reservoir

Rear Brake Reservoir



#### **BRAKE DISK/BRAKE PAD**

Check the brake disk surface for scratches, unevenness or abnormal wear.

Check if the brake disk runout is within the specified service limit.

Check if the brake pad wear exceeds the wear indicator line.

- \* • Keep grease or oil off the brake disk to avoid brake failure.



Wear Indicator Line

Brake Disk

#### **BRAKE DRUM/SHOE**

##### **《 Brake Shoe Wear 》**

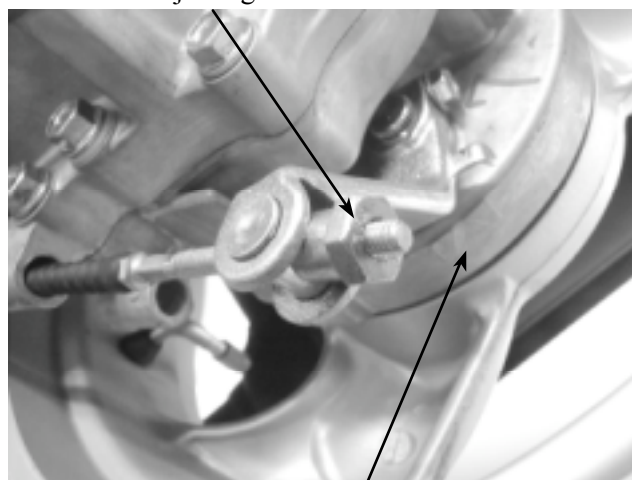
Replace the brake shoes if the arrow on the brake arm aligns with reference mark "Δ" on the brake panel when the brake is fully applied.

##### **《 Brake Drum Wear/Damage 》**

Check the brake drum appearance for damage. Check if the brake lining wear is within the specified service limit.

Check the brake operation for abnormal noise and brake drum inside for wear or damage.

Adjusting Nuts



"Δ" Marks

<Rear>

### 3. INSPECTION/ADJUSTMENT

#### NUTS/BOLTS/FASTENERS

Check all important chassis nuts and bolts for looseness.

Tighten them to their specified torque values if any looseness is found.

#### WHEELS/TIRES

Check the tires for cuts, imbedded nails or other damages.

Check the tire pressure.

- \* • Tire pressure should be checked when tires are cold.

Tire Pressure

	1 Rider	2 Riders
Front	1.75kg/cm <sub>2</sub>	1.75kg/cm <sub>2</sub>
Rear	2.00kg/cm <sub>2</sub>	2.25kg/cm <sub>2</sub>

#### STEERING HANDLEBAR

Raise the front wheel off the ground and check that the steering handlebar rotates freely.

If the handlebar moves unevenly, binds, or has vertical movement, adjust the steering head bearing.

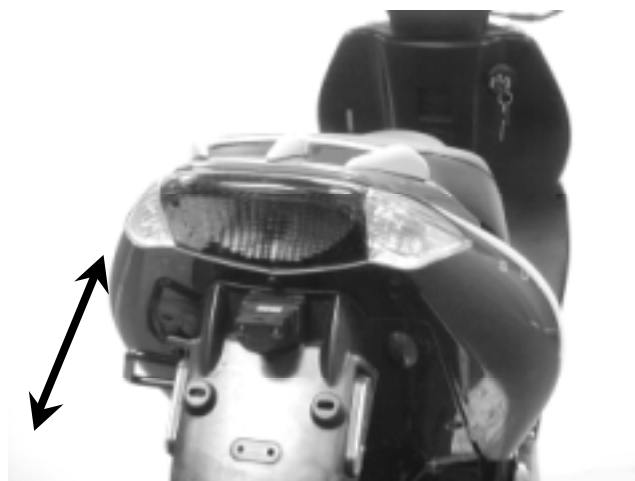
#### SUSPENSION

Check the action of the front/rear shock absorbers by compressing them several times. Check the entire shock absorber assembly for oil leaks, looseness or damage.

Jack the rear wheel off the ground and move the rear wheel sideways with force to see if the engine hanger bushings are worn. Replace the engine hanger bushings if there is any looseness.



Pressure Gauge



### 3. INSPECTION/ADJUSTMENT

#### LUBRICATION SYSTEM

##### 《 Oil Filter Cleaning》

Disconnect the oil tube at the oil pump side and allow oil to drain into a clean container. Remove the tube clip at the oil tank side and disconnect the oil tube. Remove the oil filter.

Clean the oil filter screen with compressed air.

Install the oil filter in the reverse order of removal and fill the oil tank with specified oil up to the proper level.

Bleed air from the oil pump and oil lines.

**\***

- Connect the oil tubes securely.
- Install the tube clip at the oil tank side and also install the clip to the lower oil tube that goes to the oil pump.
- Check for oil leaks.

##### 《 Oil Pump Condition》

**\***

Adjust oil pump control cable after the throttle grip free play is adjusted.

Open the throttle valve fully and check that the index mark on the pump body aligns with the aligning mark on the oil pump control lever.

Reference tip alignment within 1mm of index mark on open side is acceptable.

Start and idle the engine, then slowly open the throttle to increase engine rpm and check the operation of the oil pump control lever.

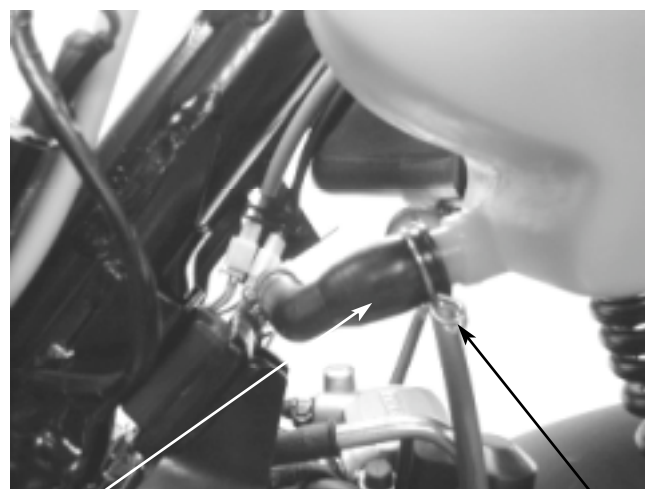
If adjustment is necessary, adjust the oil pump control cable by loosening the control cable lock nut and turning the adjusting nut. After adjustment, tighten the lock nut.

**\***

Reference tip alignment within 1mm of index mark on open side is acceptable. However, the aligning mark on the control lever must never be on the closed side of the index mark, otherwise engine damage will occur because of insufficient lubrication.

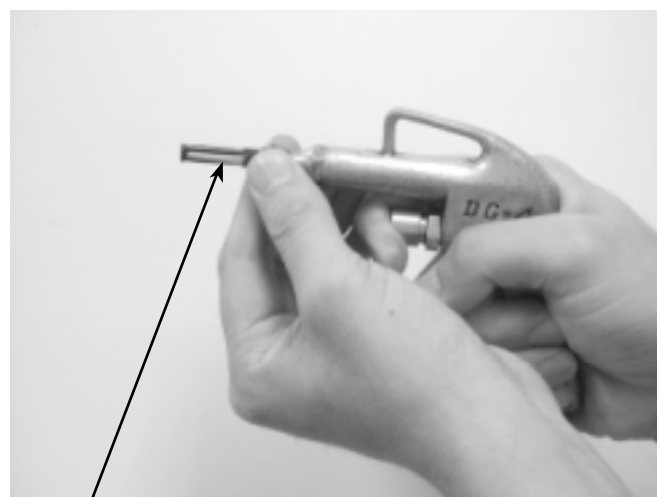
If the oil pump is not synchronized properly, the following will occur:

- Excessive white smoke or hard starting due to pump control lever excessively open
- Seized piston due to pump control lever insufficiently open

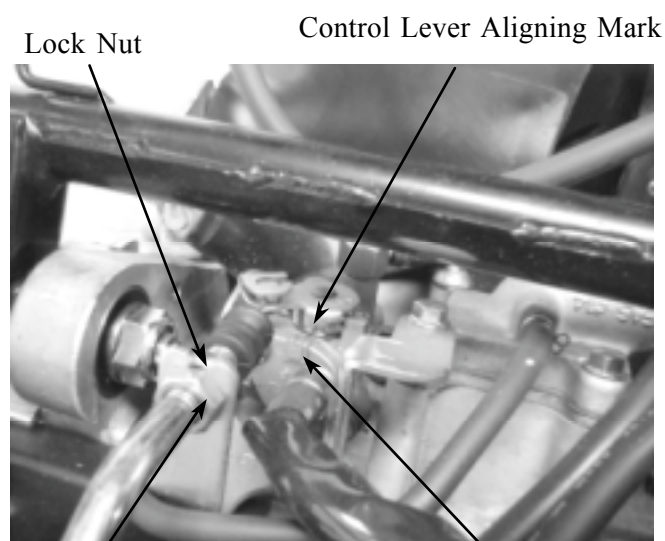


Oil Filter

Clip



Filter Screen



Lock Nut

Control Lever Aligning Mark

Adjusting Nut

Pump Body Index Mark