

## 3. INSPECTION/ADJUSTMENT

### INSPECTION/ADJUSTMENT

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## 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: DPR7EA9

Spark plug gap : 0.9mm

Valve clearance : IN: 0.1mm EX: 0.1mm

Idle speed : 1600rpm

Engine oil capacity:

At disassembly : 1.1 liter

At change : 0.9 liter

Gear oil capacity :

At disassembly : 0.20 liter

At change : 0.18 liter

Cylinder compression : 15±2kg/cm

Ignition timing : BTDC  $10^{\circ} \pm 3^{\circ}$ /1500rpm

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 56J

Rear : 130/70-12 59J

## TORQUE VALUES

Front axle nut : 14.8\_ 68.6N-m

Rear axle nut : 107.8\_ 127.4N-m

### 3. INSPECTION/ADJUSTMENT

#### MAINTENANCE SCHEDULE

Perform the periodic maintenance at each scheduled maintenance period.

I: Inspect, and Clean, Adjust, Lubricate or Replace if necessary.

A: Adjust C: Clean R: Replace T : Tighten

Item \ Frequency	Whichever comes first ⇨ ↓	Regular Service Mileage (km)					
		1000	2000	4000	6000	8000	10000
Engine oil		R New motorcycle 300km	R	R	R	R	R
Engine oil filter screen				C		C	
Fuel filter screen							R
Gear oil	Note 3	R New motorcycle 300km		R			R
Valve clearance			A	A		A	
Carburetor				I		I	
Air Cleaner	Note 2,3	I		R			R
Spark plug		Clean at every 3000km and replace if necessary					
Brake system		I	I	I	I	I	I
Drive belt						I	
Suspension				I		I	
Nut, bolt, fastener						I	
Tire				I		I	
Steeringhead bearing		I			I	I	
Brake fluid		Perform pre-ride inspection daily					
Radiator coolant		Replace every year or at every 10000km (R)					
Radiator core					I		I
Radiator cap					I		I
Brake lever				I			I
Brake shoe wear				I			I
Shock absorber				I			I

- In the interest of safety, we recommend these items be serviced only by an authorized KYMCO motorcycle dealer.

Note: 1. For higher odometer readings, repeat at the frequency interval established here.

2. Service more frequently when riding in dusty or rainy areas.

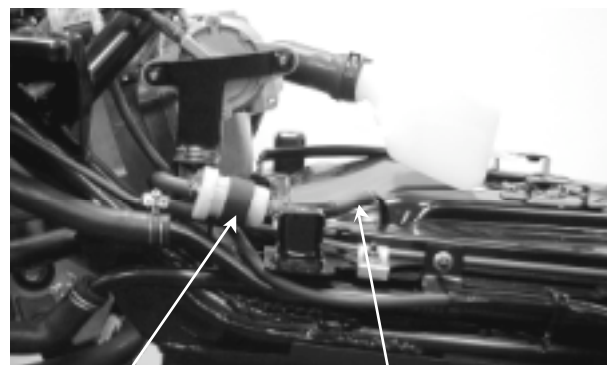
3. Service more frequently when riding in rain or at full throttle.

### 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.



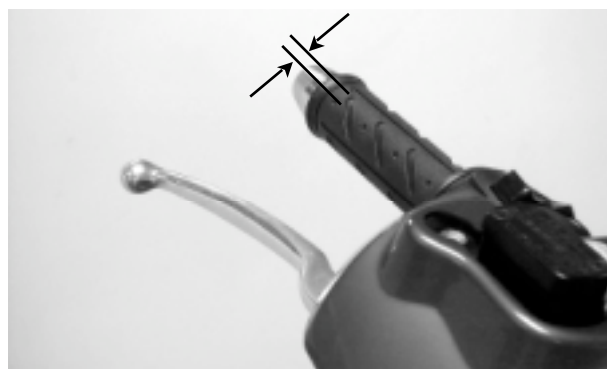
Fuel Filter

Fuel Line

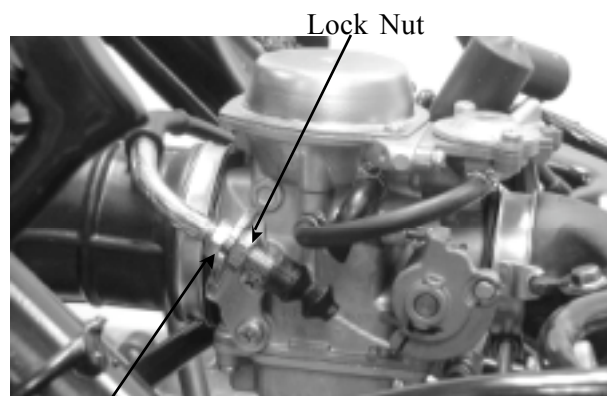
#### THROTTLE OPERATION

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

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

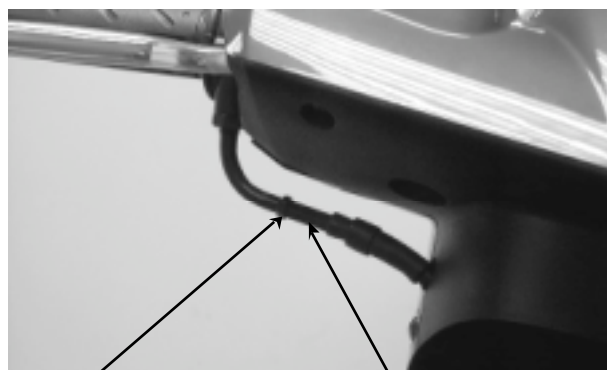


Major adjustment of the throttle grip free play is made with the adjusting nut at the carburetor side. Adjust by loosening the lock nut and turning the adjusting nut.



Adjusting Nut

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.



Lock Nut

Adjusting Nut

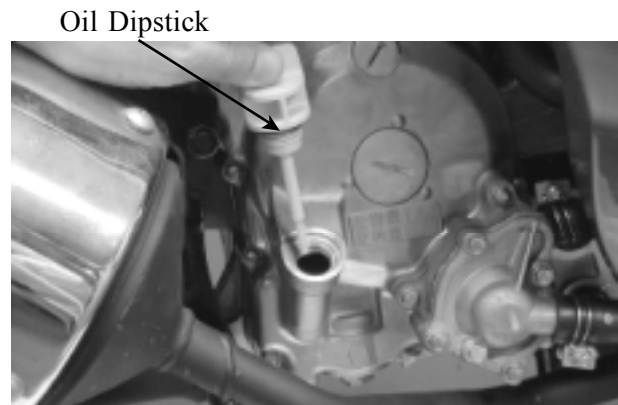
### 3. INSPECTION/ADJUSTMENT

#### ENGINE OIL

##### OIL LEVEL INSPECTION

Stop the engine and support the motorcycle upright on level ground.

Wait for 2\_ 3 minutes and check the oil level with the dipstick. Do not screw in the dipstick when making this check.



##### OIL CHANGE

- \* Drain the oil while the engine is warm.

Remove the oil drain bolt to drain the engine oil.

Install the aluminum washer and tighten the oil drain bolt.

**Torque:** 14.7N-m

- \* Replace the aluminum washer with a new one if it is deformed or damaged.

Pour the recommended oil through the oil filler hole.

##### Oil Capacity:

At disassembly: 1.1 liter

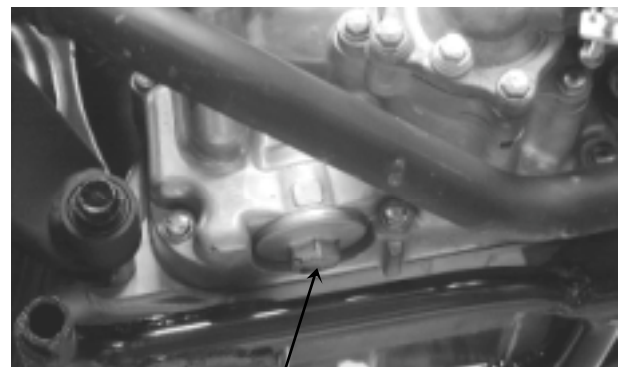
At change: 0.9 liter

##### Recommended Oil:

SAE: 15W40#

API: SG/CD

Start the engine and check for oil leaks.  
Stop the engine and recheck the oil level.



Oil Filter Screen Cap

##### OIL FILTER SCREEN INSPECTION

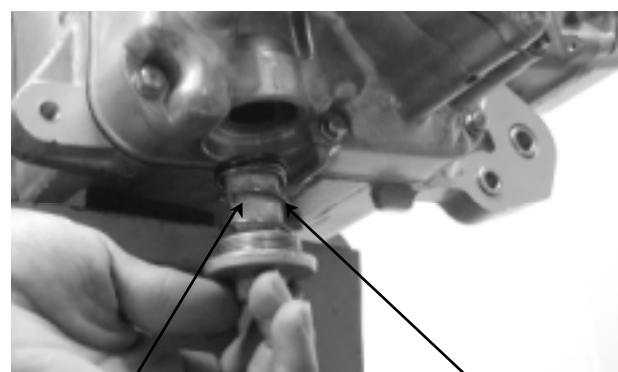
Drain the engine oil.

Remove the oil filter screen and spring.

Clean the oil filter screen.

Install the oil filter screen, spring, and filter screen cap.

Fill the engine with recommended engine oil.



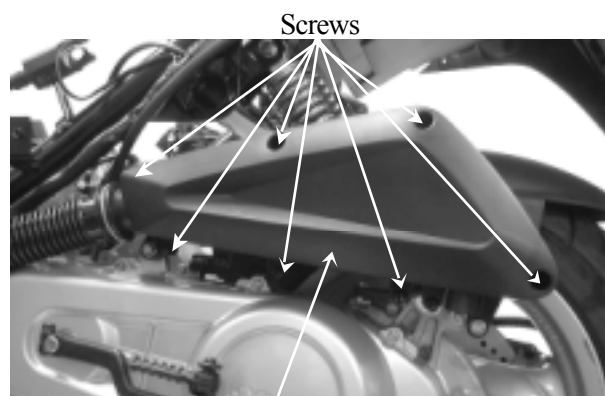
Oil Filter Screen

Spring

### 3. INSPECTION/ADJUSTMENT

#### AIR CLEANER

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



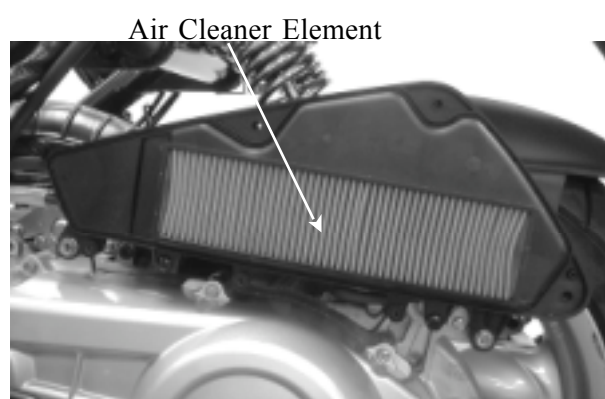
Air Cleaner Case Cover

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.

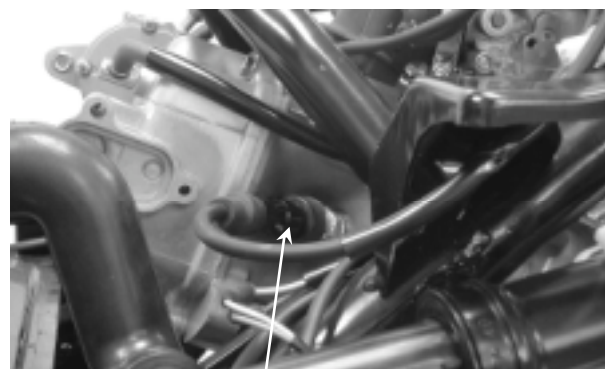
- \*
  - The air cleaner element has a viscous type paper element. Do not clean it with compressed air.
  - Be sure to install the air cleaner element and cover securely.



Air Cleaner Element

#### 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

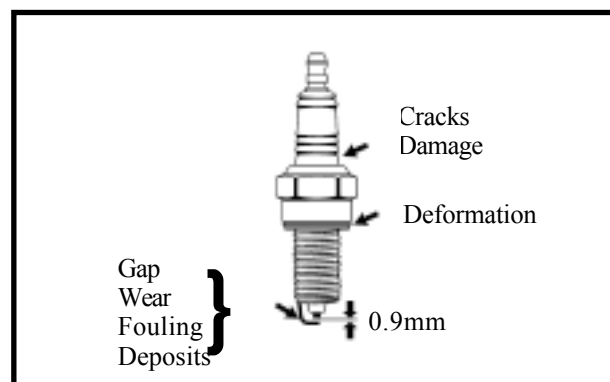
**Specified Spark Plug:** NGK: DP7EA9

Measure the spark plug gap.

**Spark Plug Gap:** 0.9mm

- \*
  - 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



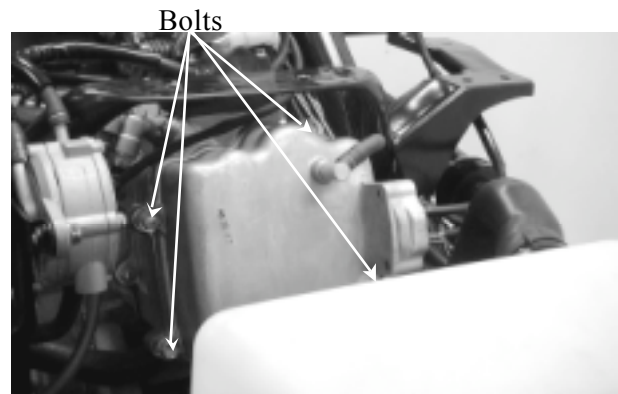


### 3. INSPECTION/ADJUSTMENT

#### VALVE CLEARANCE

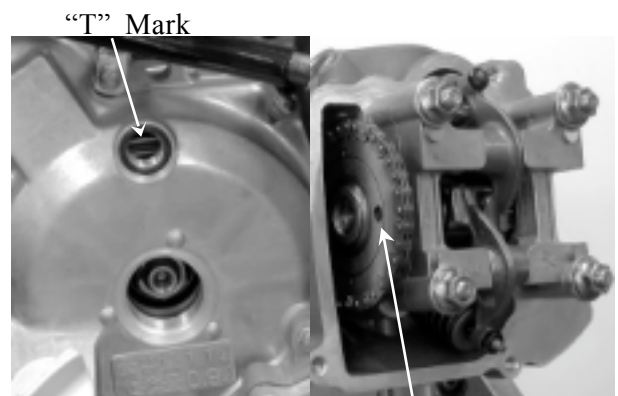
- \* Inspect and adjust valve clearance while the engine is cold (below 35°C ).

Remove the cylinder head cover.



Cylinder Head Cover

Turn the A.C. generator flywheel to the top dead center (TDC) on the compression stroke so that the "T" mark on the flywheel aligns with the index mark on the left crankcase cover.



Top Dead Center

Inspect and adjust valve clearance.

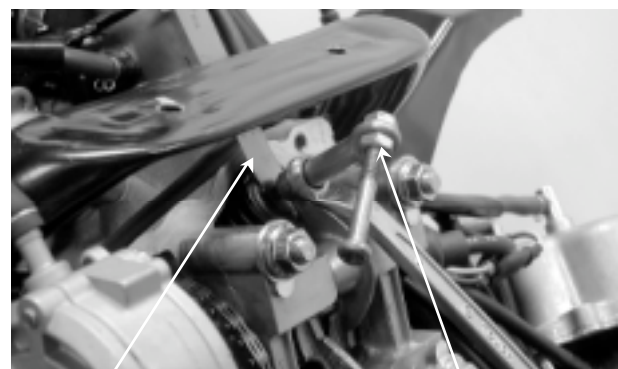
**Valve Clearance:** IN: 0.1mm  
EX: 0.1mm

Loosen the lock nut and adjust by turning the adjusting nut

**Special**

Valve Wrench

- \* Check the valve clearance again after the lock nut is tightened.



Feeler Gauge

Valve Wrench

#### CARBURETOR IDLE SPEED

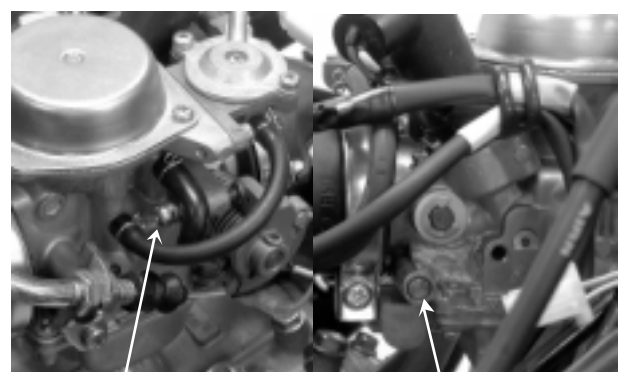
- \* The engine must be warm for accurate idle speed inspection and adjustment.

Lift up the seat and remove the inspection cover.

Warm up the engine before this operation. Start the engine and connect a tachometer. Turn the throttle stop screw to obtain the specified idle speed.

**Idle Speed:** 1600rpm

When the engine misses or run erratic, adjust the pilot screw.



Throttle Stop Screw

Pilot Screw

### 3. INSPECTION/ADJUSTMENT

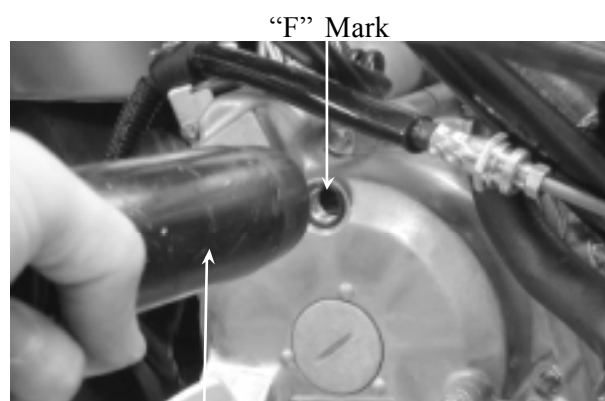
#### IGNITION TIMING

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

Remove the timing hole cap.



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.



Timing Light

#### CYLINDER COMPRESSION

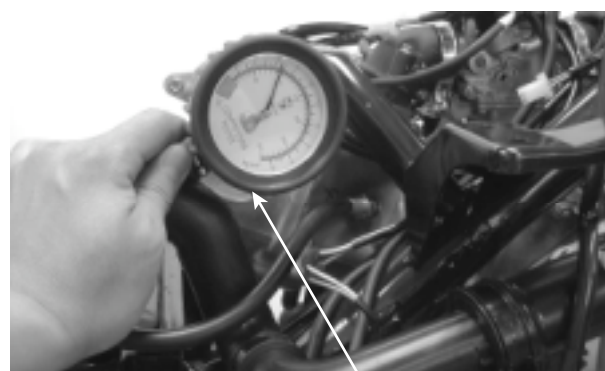
Warm up the engine before compression test. Remove the center cover and spark plug cap. Remove the spark plug. Insert a compression gauge. Open the throttle valve fully and push the starter button to test the compression.

**Compression:**  $15 \pm 2 \text{ kg/cm}_2$

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 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 : 200cc

At change : 180cc

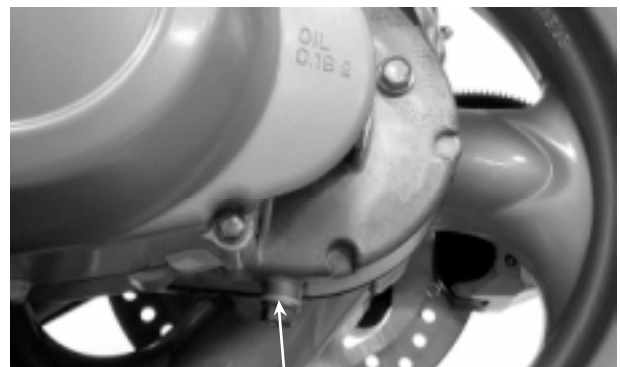
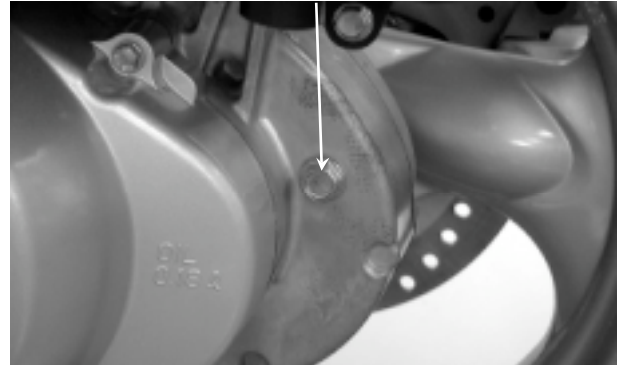
Reinstall the oil check bolt and check for oil leaks.

#### DRIVE BELT

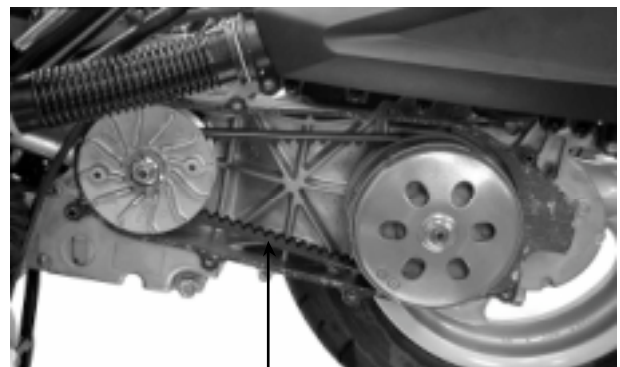
Remove the left crankcase cover.  
Inspect the drive belt for cracks or excessive wear.

Replace the drive belt with a new one if necessary and in accordance with the Maintenance Schedule.

Oil Check Bolt Hole/Oil Filler



Oil Drain Bolt/Sealing Washer



Drive Belt

### 3. INSPECTION/ADJUSTMENT

#### HEADLIGHT AIM

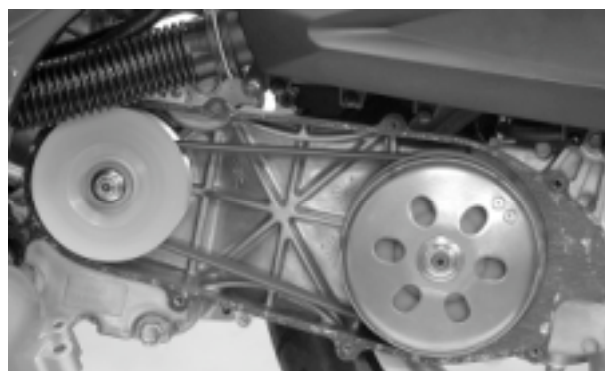
Turn the ignition switch ON.  
Turn on the headlight switch.  
Adjust the headlight aim by turning the headlight aim adjusting bolt.



Headlight Aim Adjusting Bolt

#### CLUTCH SHOE WEAR

Start the engine and check the clutch operation by increasing the engine speed gradually.  
If the motorcycle tends to creep, or the engine stalls, check the clutch shoes for wear and replace if necessary.



#### COOLING SYSTEM

##### COOLANT LEVEL INSPECTION

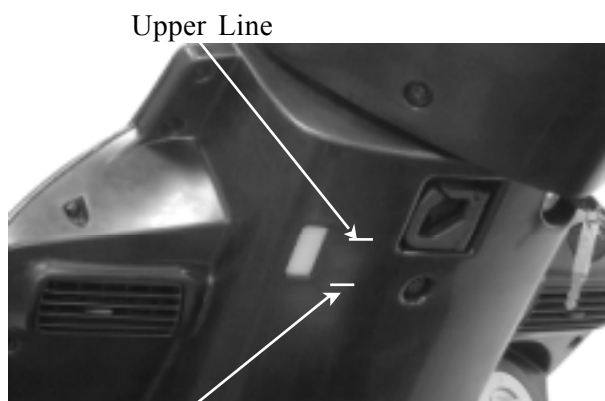
Place the motorcycle on its main stand on level ground.

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 radiator cap.

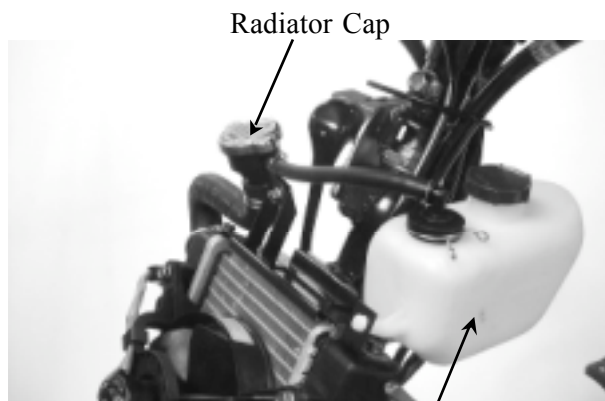
Remove the drain bolt to drain the coolant and tilt the motorcycle to the right and the coolant will drain more easily.

Drain the coolant in the reserve tank.

Reinstall the drain bolt.

Fill the radiator with the specified coolant.

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



Radiator Cap

Reserve Tank

### 3. INSPECTION/ADJUSTMENT

Coolant capacity : 1165cc

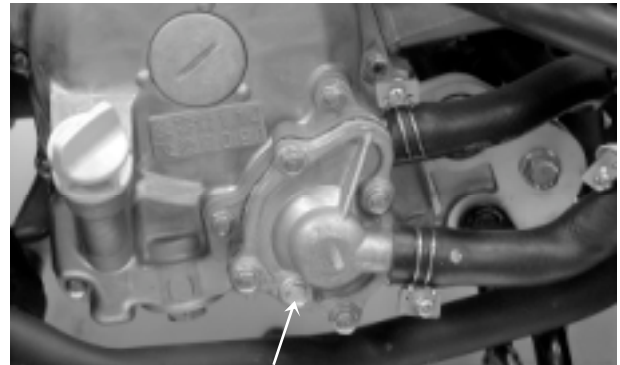
Radiator capacity : 825cc

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.



Drain Bolt

#### BRAKE SYSTEM

##### BRAKE LEVER

Measure the front and rear brake lever free plays.

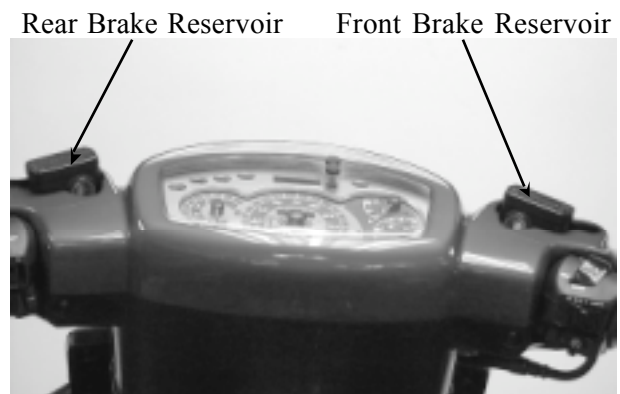


##### BRAKE FLUID

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-3

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



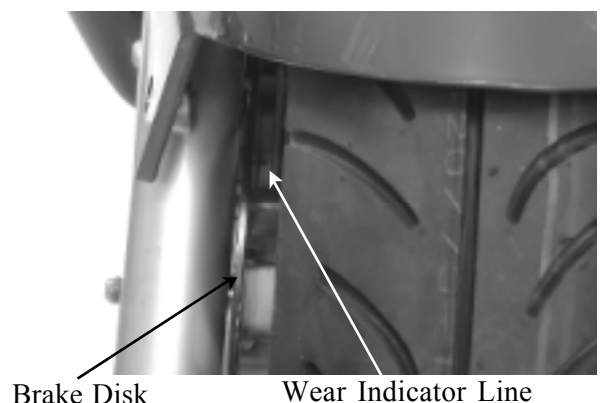
##### BRAKE DISK/BRAKE PAD

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.



### 3. INSPECTION/ADJUSTMENT

#### NUTS/BOLTS/FASTENERS

Check all important chassis nuts and bolts for looseness.

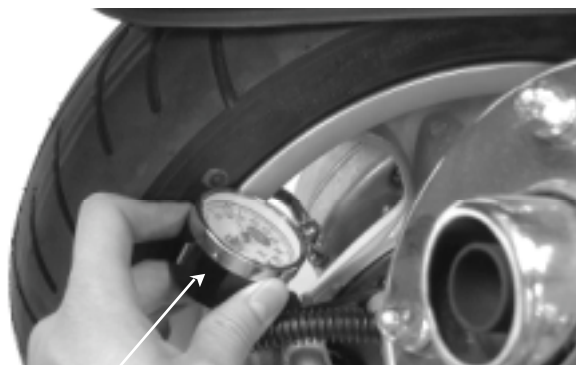
Tighten them to their specified torque values if any looseness is found.

#### 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.



Pressure Gauge

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.

