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

Throttle grip free play : 2 6 mm
Spark plug : NGK CR7E
Spark plug gap : 0.6~0.7 mm
Valve clearance : IN: 0.1 mm EX: 0.1 mm
Idle speed : 1800 rpm

Cylinder compression : 15 kg/cm²

Engine oil capacity:
At disassembly : 1.2L
At change : 1.0L
Gear oil capacity :
At disassembly : 0.13L
At change : 0.12L
Coolant capacity :
Ignition timing : ECU control

TIRE

	1 Rider (75 kg)	2 Riders (150 kg)
Front	2.0 kgf/cm²	2.00 kgf/cm²
Rear	2.25 kgf/cm²	2.25 kgf/cm²

TIRE SPECIFICATION:
Front :120/70-14
Rear : 150/70-13

MAINTENANCE SCHEDULE

Perform the pre-ride inspection at each scheduled maintenance period.

This interval should be judged by odometer reading or months, whichever comes first.

I: INSPECT AND CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY

C: CLEAN R: REPLACE A: ADJUST L: LUBRICATE

The following maintenance schedule specifies all maintenance required to keep your scooter in peak operating condition. Maintenance work should be performed in accordance with standards and specifications of KYMCO by properly trained and equipped technicians. Your KYMCO dealer meets all of these requirements.

＊Should be serviced by your KYMCO dealer, unless the owner has the proper tools and service data and is mechanically qualified.

＊＊In the interest of safety, we recommend these items be serviced only by your KYMCO dealer. KYMCO recommends that your KYMCO dealer should road test your scooter after each periodic maintenance is carried out.

MAINTENANCE SCHEDULE

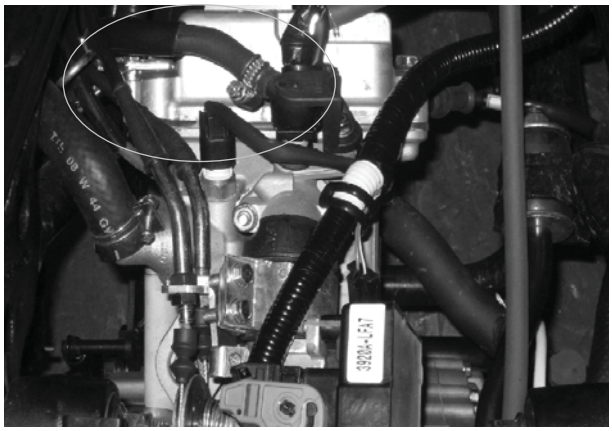
	ITEM \ FREQUENCY	WHICHEVER COMES FIRST	ODOMETER READING							
		X 1000 km	1	5	10	15	20	25	30	REFER TO PAGE
		X 1000 mi	0.6	3	6	9	12	15	18	
		MONTH	1	6	12	18	24	30	36	
*	AIR CLEANER			R	R	R	R	R	R	33
	SPARK PLUGS			I	R	I	R	I	R	34
*	THROTTLE OPERATION			I	I	I	I	I	I	33
*	VALVE CLEARANCE			I	A	I	A	I	A	-
*	FUEL LINE				I		I		I	-
	CRANKCASE BREATHER		C	C	C	C	C	C	C	-
*	ENGINE OIL		R	R	R	R	R	R	R	29
*	ENGINE OIL SCREEN			C	R	C	R	C	R	-
*	ENGINE OIL FILTER		R	R	R	R	R	R	R	-
*	ENGINE IDLE SPEED				I		I		I	-
*	TRANSMISSION FLUID		R	R	R	R	R	R	R	32
*	DRIVE BELT			I	I	I	R	I	I	-

	ITEM \ FREQUENCY	WHICHEVER COMES FIRST		ODOMETER READING [NOTE (1)]							
			X 1000 km	1	5	10	15	20	25	30	REFER TO PAGE
			X 1000 mi	0.6	3	6	9	12	15	18	
		NOTE	MONTH	1	6	12	18	24	30	36	
	CLUTCH SHOE WEAR					I		I		I	
	BRAKE FLUID				I	R	I	R	I	R	
	BRAKE PAD WEAR				I	I	I	I	I	I	
	BRAKE SYSTEM				I	I	I	I	I	I	
	BRAKE LIGHT SWITCH				I	I	I	I	I	I	
	STEERING BEARINGS				I	I	I	I	I	I	
	HEADLIGHT AIM				I	I	I	I	I	I	
	NUTS, BOLTS, FASTENERS				I	I	I	I	I	I	
	WHEELS/TIRES				I	I	I	I	I	I	

!

FUEL LINE

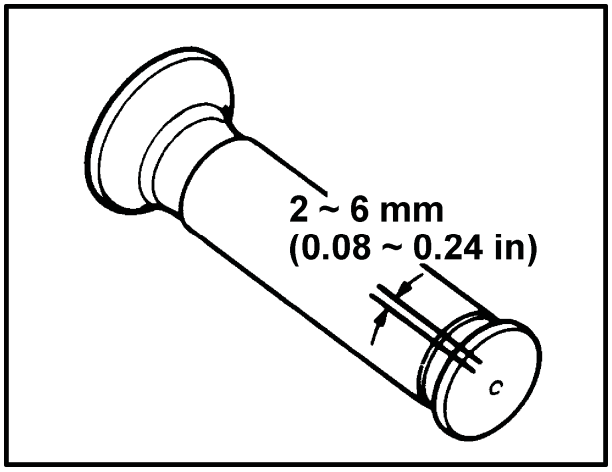
Check the fuel lines and replace any parts which show signs of deterioration, damage or leakage.



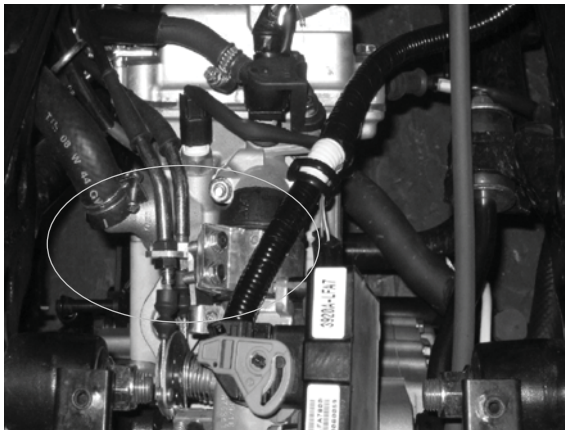
THROTTLE OPERATION

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

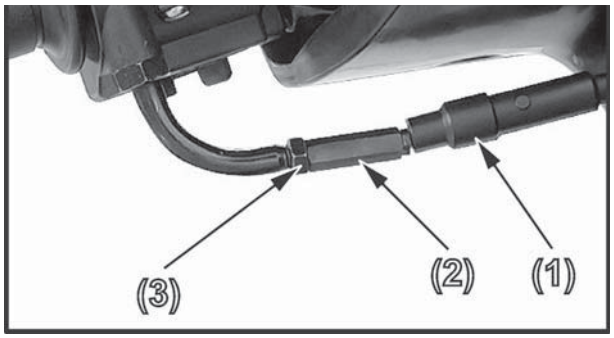
Free Play: 2 6 mm



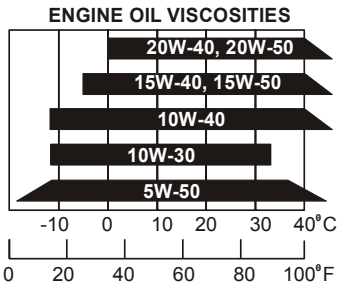
Major adjustment of the throttle grip free play is made with the adjusting nut at the throttle body side. Adjust by loosening the lock nut and turning the adjusting nut.



Minor adjustment is made with the adjusting nut at the throttle grip side.
Slide the rubber cover (1) out and adjust by loosening the lock nut (3) and turning the adjusting nut (2).



(Chart)



ENGINE OIL

Engine oil recommendation

Use a premium quality 4-stroke motor oil to ensure longer service life of your scooter. Use only oils which are rated, SJ under the API service classification. The recommended viscosity is SAE 15W-40. If a SAE 15W-40 motor oil is not available, select an alternative according to the chart.

Engine oil capacity:
At disassembly:
1.2 L
At change:
1.0 L

Engine oil level check

Check the engine oil level each day before riding the scooter.
The level must be maintained between the upper and lower level marks on the oil filler cap/dipstick.

1. Start the engine and let it idle for a few minutes.
2. Stop the engine and put the scooter on its center stand on level ground.
3. After a few minutes, remove the oil filler cap/dipstick, wipe it clean, and reinsert the oil filler cap/dipstick without screwing it in. Remove the oil filler cap/dipstick. The oil level should be between the upper and lower marks on the oil filler cap/dipstick.
4. If required, add the specified oil up to the upper level mark. Do not overfill.
5. Reinstall the oil filler cap/dipstick. Check for oil leaks.

* Let the engine and exhaust system cool before working in those areas.

Engine oil replacement

Engine oil quality is the chief factor affecting engine service life. Change the engine oil as specified in the maintenance schedule.
When running in very dusty conditions, oil changes should be performed more frequently than specified in the maintenance schedule.

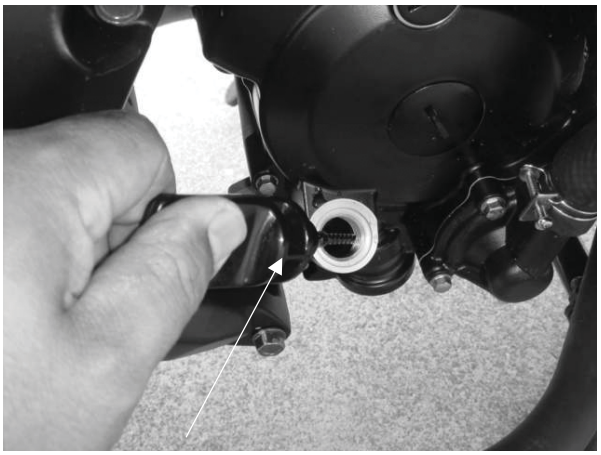
Please dispose of used engine oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash or pour it on the ground or down a drain.

Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

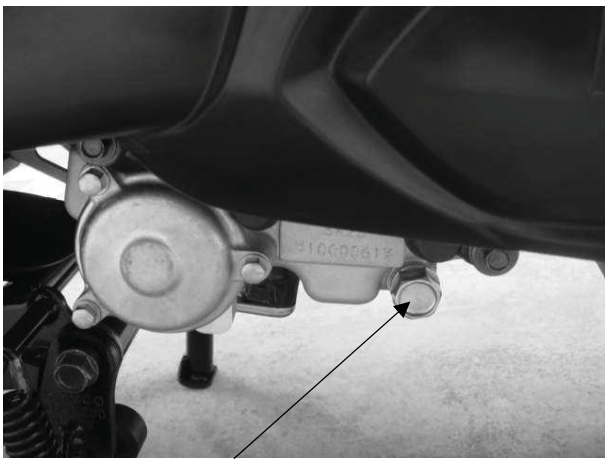
Change the engine oil with the engine at normal operating temperature and the scooter on its center stand to assure complete and rapid draining.

1. Remove the oil filler cap/dipstick(1) from the right crankcase cover.
2. Place a container under the left crankcase.
3. Remove the oil drain plug (2) to drain the oil.
4. Reinstall the drain plug and tighten the drain plug to specification.
   Oil drain plug torque:
   25 N-m (2.5 kgf-m,)
5. Fill the crankcase with the recommended grade oil and install the oil filler cap.
   Oil capacity (after draining):
   1.0 L
6. Start the engine and let it idle for 2－3 minutes.
7. Stop the engine and check that the oil level is at the upper level mark on the oil filler cap/dipstick with the scooter upright on firm, level ground. Make sure there are no oil leaks.

* Let the engine and exhaust system cool before working in those areas.



(1)



(2)

Oil strainer screen clean

Change the engine oil with the engine at normal operating temperature and the scooter on its center stand to assure complete and rapid draining.

> Let the engine and exhaust system cool before working in those areas.

1. Remove the oil filler cap/dipstick (1) from the right crankcase cover.
2. Place a drain pan under the crankcase and remove the oil strainer screen cap (2). The spring (3) and oil strainer screen (4) will come out when the drain plug is removed.
   Let the engine oil drain out.
3. Clean the oil strainer screen.
4. Check that the oil strainer screen, sealing rubber and drain plug O-ring are in good condition.
5. Install the oil strainer screen, spring and oil strainer screen cap.

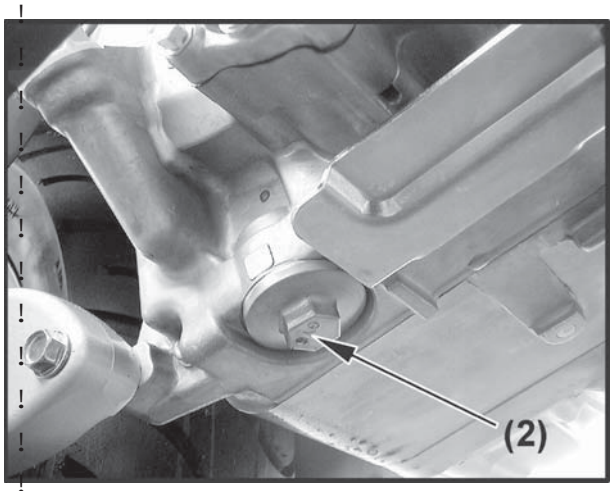
   Oil strainer screen cap torque:
   15N-m (1.5 kgf-m)

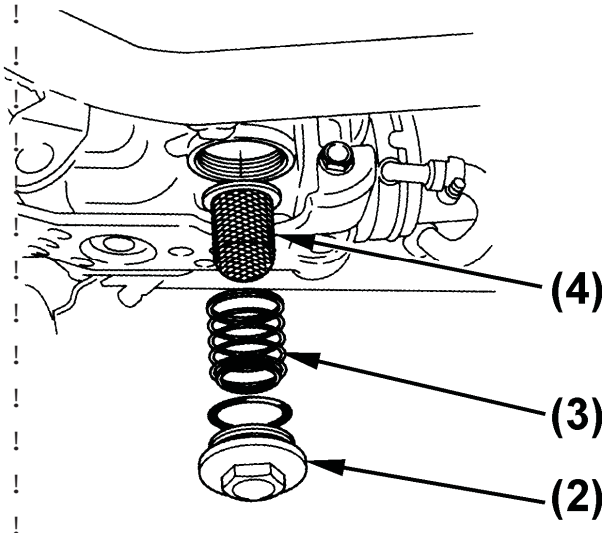
6. Fill the crankcase with the recommended grade oil and install the oil strainer screen cap.

   Oil capacity (after draining):
   1.0 L

7. Start the engine and let it idle for 2 3 minutes.
8. Stop the engine and check that the oil level is at the upper level mark on the oil filler cap/dipstick with the scooter upright on firm, level ground. Make sure there are no oil leaks.

(1)



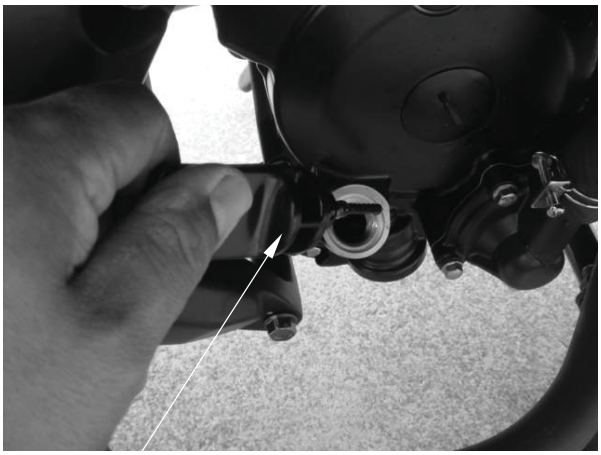


Oil filter replacement

Change the engine oil with the engine at normal operating temperature and the scooter on its center stand to assure complete and rapid draining.

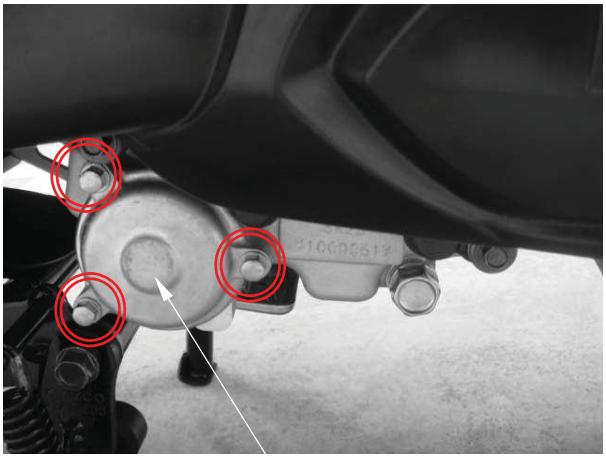
* Let the engine and exhaust system cool before working in those areas.

1. Remove the oil filler cap/dipstick (1) from the right crankcase cover.



(1)

2. Place a drain pan under the crankcase.
   Remove three bolts and then remove the oil filter cap (2) and O-ring (3).
   The spring (4) will come out when the filter cap is removed.
   Let the engine oil drain out.



(2)

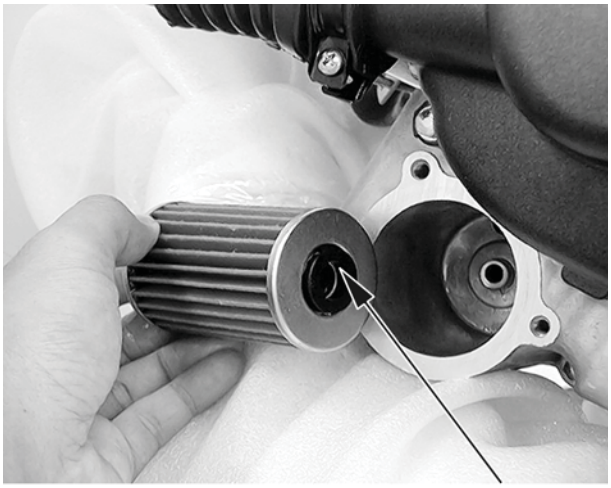
3. Remove and discard the oil filter (5).

* Do not remain the rubber seal on the oil filter in the oil filter housing.

4. Check that the O-ring is in good condition.

5. Install the new oil filter.

Make sure the rubber seal on the oil filter facing the left crankcase.

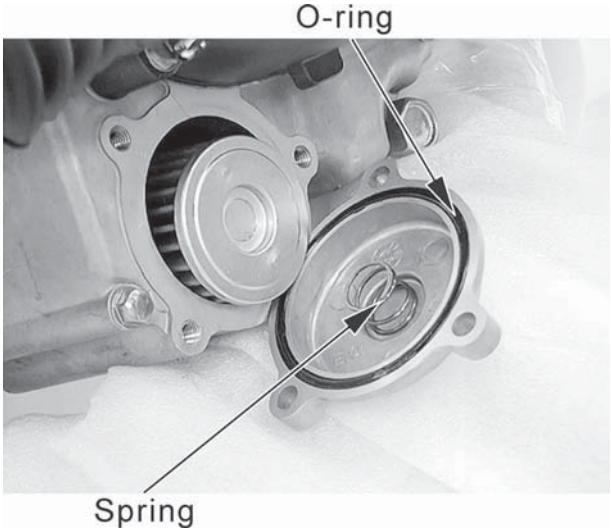


Rubber Seal

6. Install the spring, O-ring and cap.
   Torque:
   12 N-m (1.2 kgf-m)

7. Fill the crankcase with the recommended grade oil and install the oil filler cap.
   Oil capacity (after draining):
   1.0 L

8. Start the engine and let it idle for 2 3 minutes.
9. Stop the engine and check that the oil level is at the upper level mark on the oil filler cap/dipstick with the scooter upright on firm, level ground. Make sure there are no oil leaks.



TRANSMISSION OIL

Oil change

1. Place the scooter in its center stand.

2. Place a drain pan under the drain bolt (1).

3. Remove the transmission oil drain bolt.

4. Remove the transmission oil filler bolt (2), slowly turn the rear wheel and drain the oil.
   After draining the oil completely, install the oil drain bolt with a new sealing washer and tighten it.

   Torque: 13 N-m (1.3 kgf-m)

5. Fill the transmission case with recommended oil.

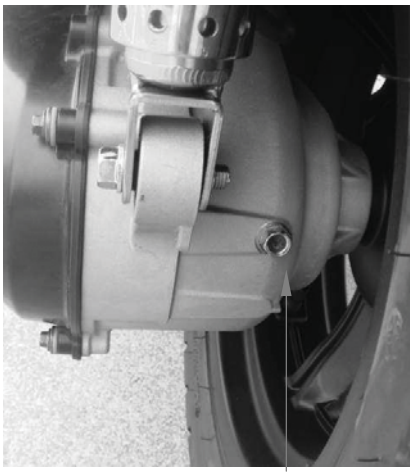
   Recommended transmission oil: SAE 90

   Oil capacity (at draining):
   0.12 L

6. Install the transmission oil filler bolt with a new sealing washer and tighten it.

   Torque: 13 N-m (1.3 kgf-m)

(1)

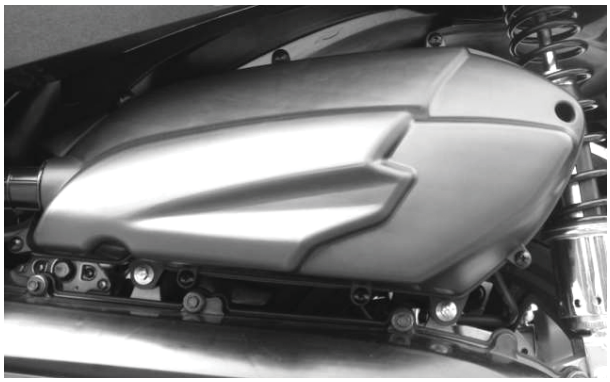

(2)

!

!

AIR CLEANER

The air cleaner should be serviced at regular intervals. Service more frequently when riding in unusually wet or dusty areas.

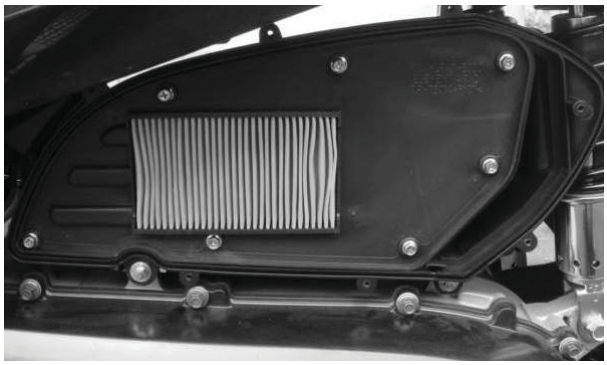


Air cleaner element replacement

1. Remove the screws from the air cleaner cover , then remove air cleaner cover.

2. Remove screws from the air cleaner element , then remove and discard this air cleaner element.

4. The new air cleaner element installation is in the reverse order of removal.

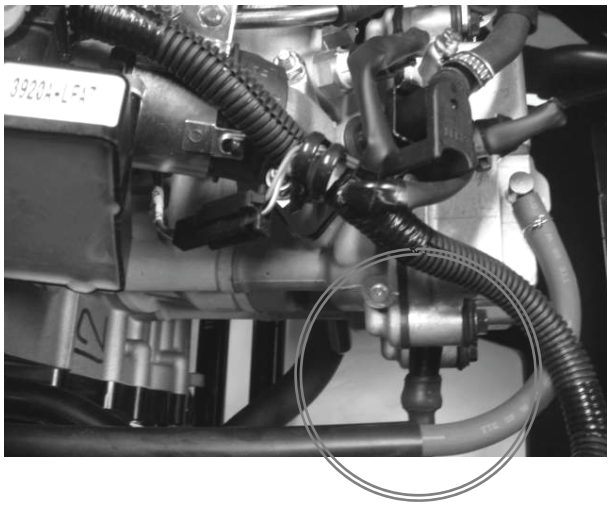


Use the KYMCO genuine air cleaner element or an equivalent air cleaner element specified for your model. Using the wrong KYMCO air cleaner element or a non-KYMCO air cleaner element which is not of equivalent quality may cause premature engine wear or performance problems.

!

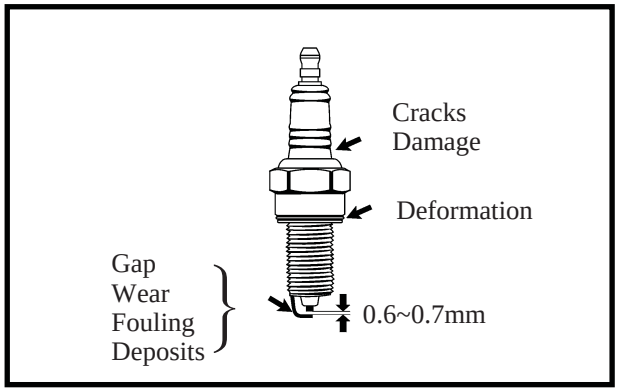
SPARK PLUG

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.



Specified Spark Plug:
NGK CR7E

Measure the spark plug gap.
Spark Plug Gap: 0.6~0.7 mm



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

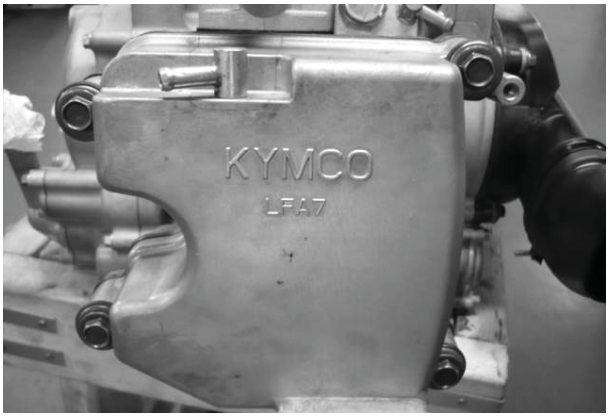
Torque: 0.9 kgf-m (9 N-m)

!
!

VALVE CLEARANCE

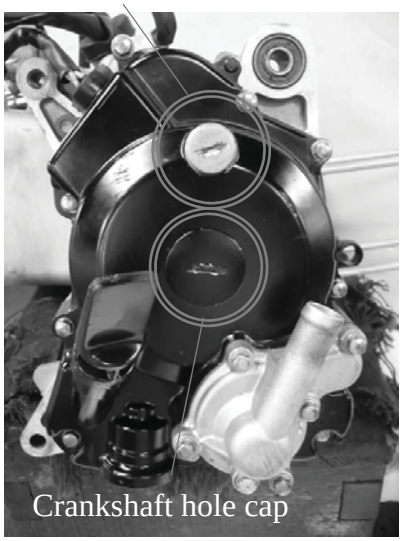
• Inspect and adjust valve clearance while the engine is cold (below 35 :).

Remove the four bolts , then remove cylinder head cover.



Timing hole cap

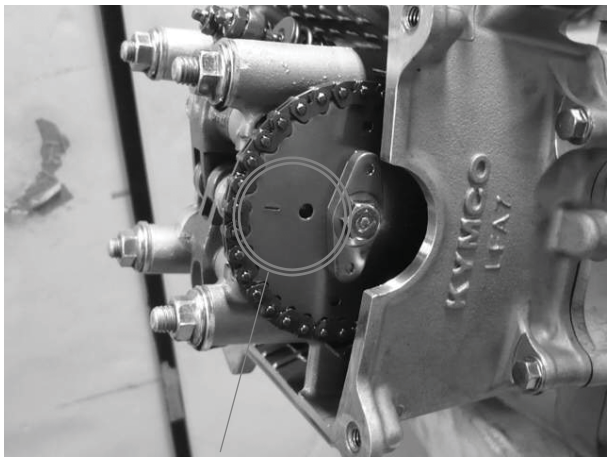
Remove the timing hole cap and O-ring
Remove the crankshaft hole cap and O-ring .



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.

The punch mark on the camshaft should face upward as shown.

If the punch mark on the camshaft are facing downward, turn the crankshaft one full turn (180°) and the punch mark are facing upward.



Punch Mark

Adjust by loosening the valve adjusting screw lock-nut and turning the adjusting screw until there is a slight drag on the thickness gauge .

Valve Clearance: IN: 0.1 mm
EX:0.1 mm

Apply oil to the valve adjusting screw lock-nut threads and seating surface.

Hold the adjusting screw and tighten the lock nut to the specified torque.

Torque: 0.9 kgf-m (9 N-m)

Special tool:

Valve adjuster A120E00036

After tightening the lock-nut, recheck the valve clearance.

Install the removed parts in the reverse order of removal.

IDLE SPEED

*

- It is not necessary to adjust idle speed**.** The throttle body is factory preset originally, do not loosen or tighten the painted bolts and screws of throttle body. Loosening or tightening them can cause throttle a idle and valve with failure.

Idle Speed:

1800 rpm

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 kg/cm²

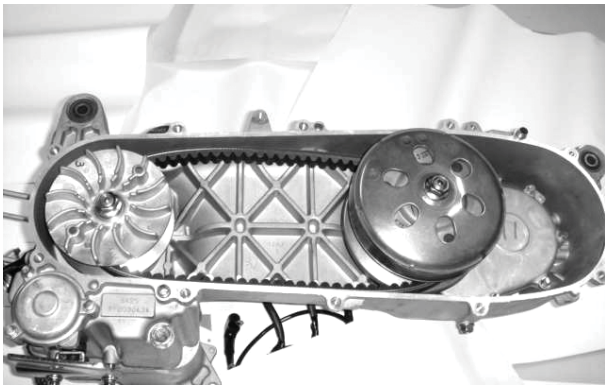
If the compression is low, check for the following:

- 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.

DRIVE BELT

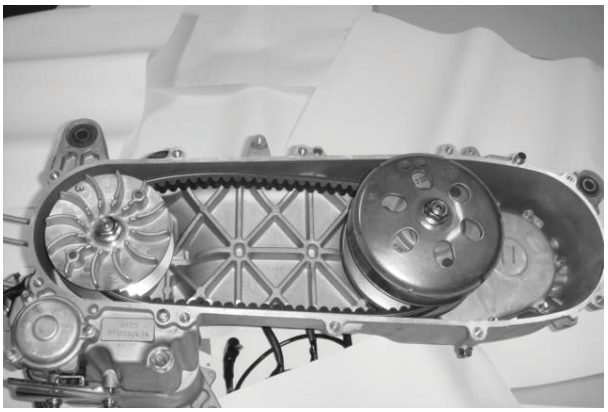
Remove the left crankcase cover.
Inspect the drive belt for cracks or excessive wear.
Replace the drive belt with a new one if necessary and in accordance with the Maintenance Schedule.



!

CLUTCH SHOE WEAR

Start the engine and check the clutch operation by increasing the engine speed gradually.
If the scooter tends to creep, or the engine stalls, check the clutch shoes for wear and replace if necessary (refer to the **"DRIVE PULLEY, DRIVE BELT AND DRIVEN PULLEY"** section in the chapter 8).



!

Coolant level inspection

The reserve tank is under leg shield. Check the coolant level through the reserve tank lid white the engine is at the normal operating temperature, with the scooter In an upright position.

If the coolant level is below the LOWER level mark, remove the left floor mat ,remove the lid screw, the reserve tank lid, and then the reserve tank cap to add coolant mixture until it reaches the upper level mark.

⚠ WARNING

Add coolant to the reserve tank only. Do not attempt to add coolant by removing the radiator cap. Coolant in the radiator is under pressure and is very hot and can cause serious burns.

!

Brake fluid

Brake fluid level inspection

With the scooter in an upright position, check the front and rear fluid level.

The level should be above the lower level mark. If the level is at or below the lower level mark "L", check the brake pads for wear.

■ NOTE: Other checks - make sure there are no fluid leaks. Check for deterioration or cracks in the hoses and fittings.

⚠ WARNING

Worn brake pads should be replaced immediately. If the pads are not worn, have your brake system inspected for leaks. Do not ride your scooter unless the brakes are in perfect working order.

Brake fluid type: DOT 4

Brake pad

Brake pad wear inspection

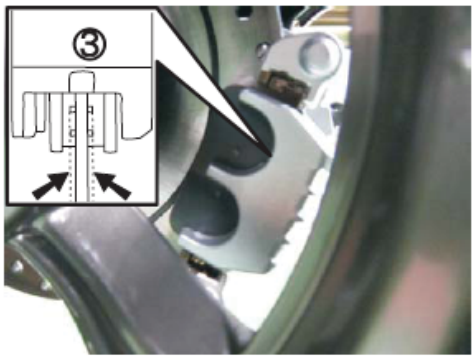
Inspect the brake pad thickness to verify there is enough material for the brakes to function properly.

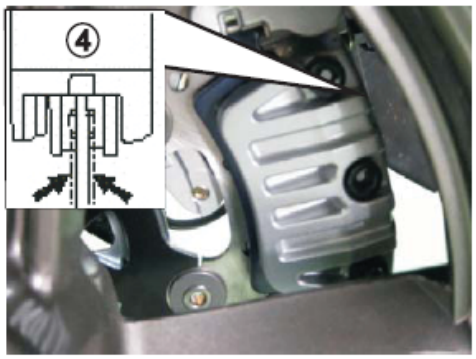
1. If the wear indicator grooves in the front brake pads are no longer visible ③, it is an indication that the brake pads are worn and require replacement.

2. If the wear indicator grooves in the rear brake pads are no longer visible ④, it is an indication that the brake pads are worn and require replacement.

⚠ WARNING

The brakes will wear quickly if the lever is continually applied during riding (dragging the brake).
Consult your KYMCO dealer for braking system service.





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

Tire pressure

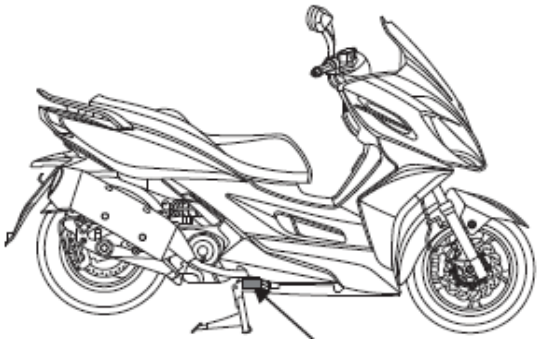
Insufficient air pressure in the tires not only hastens tire wear but also seriously affects the stability of the scooter. Under inflated tires make smooth cornering difficult and overinflated tires decrease the amount of tire in contact with the ground which can lead to skids and loss of control. Be sure that the tire pressure is within the specified limits at all times. Tire pressure should only be adjusted when the tires are cold.

Cold inflation tire pressure

	1 Rider (75 kg)	2 Riders (150 kg)
Front	2.0kg/cm²	2.0 kg/cm²
Rear	2.25kg/cm²	2.25 kg/cm²

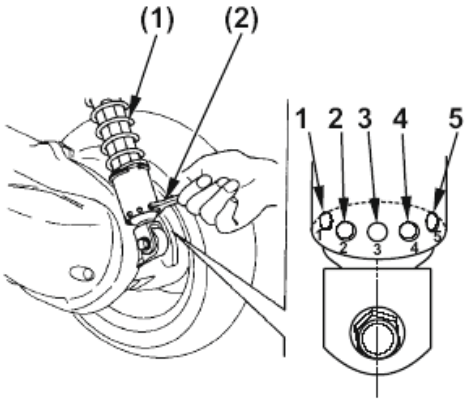
SUSPENSION

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.



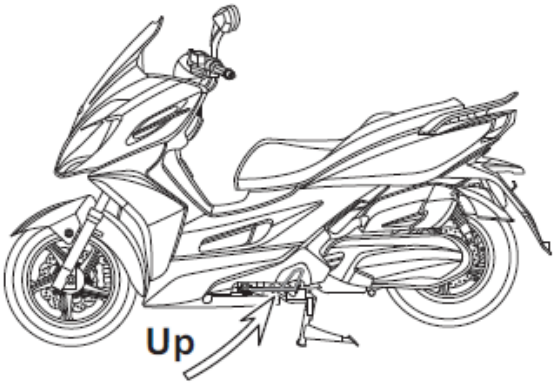
Rear suspension adjustment

Each shock absorber (1) has 5 adjustment positions for different load or riding conditions.
Use a pin spanner (2) to adjust the rear shocks. Always adjust the shock absorber position in sequence (1-2-3-4-5 or 5-4-3-2-1). Attempting to adjust directly from 1 to 5 or 5 to 1 may damage the shock absorber. Position 1 is for light loads and smooth road conditions. Positions 3 to 5 increase spring preload for a stiffer rear suspension, and can be used when the scooter is heavily loaded. Be certain to adjust both shock absorbers to the same position.



Side stand

Your scooter's side stand is not only necessary when you park, but it contains an important safety feature. This feature cuts-off the ignition if you try to ride the scooter when the side stand is down. Perform the following side stand inspection.



Interlock function check:

Check the side stand ignition cut-off system:

1. Place the scooter on its center stand.
2. Put the side stand up and start the engine.
3. Lower the side stand. The engine should stop as you put the side stand down.

■ **NOTE: If the side stand system does not operate as described, see your KYMCO dealer for service.**