

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 (Mongoose/KXR 90)

ENGINE

- Throttle grip free play : 1_ 4mm
- Spark plug gap : 0.6_ 0.7mm
- Spark plug: Standard : NGK: C7HSA
- Valve clearance : IN: 0.1m
EX: 0.1m
- Idle speed : 1700±100rpm
- Engine oil capacity:
 - At disassembly : 0.8 liter
 - At change : 0.7 liter
- Gear oil capacity :
 - At disassembly : 120cc
 - At change : 110cc
- Cylinder compression : 16kg/cm_
- Ignition timing : BTDC 28°/4000rpm

CHASSIS

- Front brake free play: 10_ 20mm
- Rear brake free play: 10_ 20mm

TIRE PRESSURE

	1 Rider
Front	0.22kgf/cm_
Rear	0.22kgf/cm_

TIRE SIZE:

- Front : 18*7-8
- Rear : 18*9-8

TORQUE VALUES

- Front wheel nut 4.0_ 5.0kgf-m
- Rear wheel nut 4.0_ 5.0kgf-m

3. INSPECTION/ADJUSTMENT

SPECIFICATIONS (Mongoose/KXR 50)

ENGINE

Throttle grip free play : 1_ 4mm
Spark plug gap : 0.6_ 0.7mm
Spark plug: Standard : NGK: BR8HAS
Idle speed : 2000±100rpm
Gear oil capacity :
 At disassembly : 120cc
 At change : 110cc
Cylinder compression : 12kg/cm_
Ignition timing : BTDC 15°/1700rpm

CHASSIS

Front brake free play: 10_ 20mm
Rear brake free play: 10_ 20mm

TIRE PRESSURE

	1 Rider
Front	0.22kgf/cm_
Rear	0.22kgf/cm_

TIRE SIZE:

Front : 16*8-7
Rear : 16*8-7

TORQUE VALUES

Front wheel nut 4.0_ 5.0kgf-m
Rear wheel nut 4.0_ 5.0kgf-m

3. INSPECTION/ADJUSTMENT

MAINTENANCE SCHEDULE

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service as well as new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

Item	Remarks	Initial			Every	
		1 month	3 month	6 month	6 month	1 year
Valves (Mongoose/KXR 50)	Check valve clearance. Adjust if necessary.	°		°	°	°
Spark plug	Check condition. Clean or replace if necessary.	°	°	°	°	°
Air clearance	Clean. Replace if necessary.		°	°	°	°
Carburetor	Check idle speed/starter operation. Adjust if necessary.		°	°	°	°
Fuel line	Check fuel hose for cracks or damage. Replace if necessary.			°	°	°
Engine oil (Mongoose/KXR 50)	Replace (Warm engine before draining).	°		°	°	°
Engine oil filter screen (Mongoose/KXR 50)	Clean. Replace if necessary.	°				°
Transmission oil	Check oil leakage. Replace every 12 months.	°				°
Brake system	Check operation. Adjust if necessary.	°	°	°	°	°
Drive belt	Check operation/replace if damage or excessive wear.	°				°
Wheels	Check balance/damage/runout. Replace if necessary.	°		°	°	°
Wheel bearings	Check bearings assembly for looseness/damage. Replace if damaged.	°		°	°	°
Steering system	Check operation/replace if damage. Check toe-in/adjust if necessary.	°	°	°	°	°
Knuckle shafts	Lubricate every 6 months.			°	°	°
Fitting/Fasteners	Check all chassis fittings and fasteners. Correct if necessary.	°	°	°	°	°

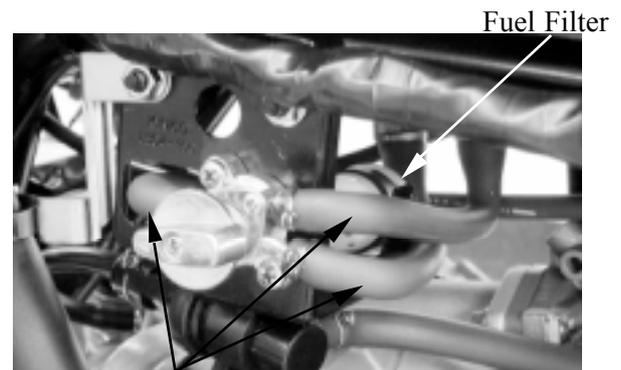
- In the interest of safety, we recommend these items should be serviced only by an authorized KYMCO motorcycle dealer.

3. INSPECTION/ADJUSTMENT

FUEL LINE

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

⊗ Do not smoke or allow flames or sparks in your working area.



Fuel Tubes

THROTTLE OPERATION

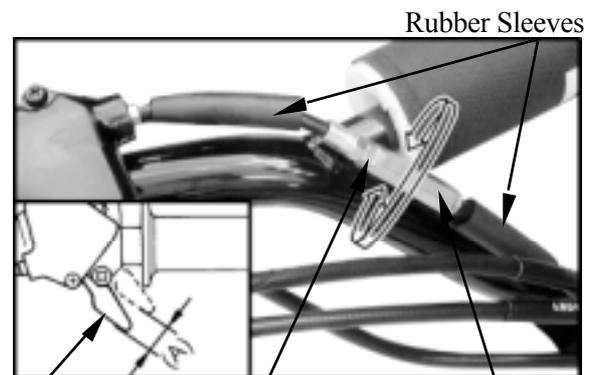
Check the throttle to swing for smooth movement.

Measure the throttle to swing free play.

Free Play: 1_ 4mm

To adjust throttle free play:

1. Slide the rubber sleeves back to expose the throttle cable adjuster.
2. Loosen the lock nut, then turn the adjuster to obtain the correct free play. (1~4 mm or 0.04~0.16 in)
3. Tighten the lock nut and reinstall the sleeve.



Throttle Lever Lock Nut Cable Adjuster

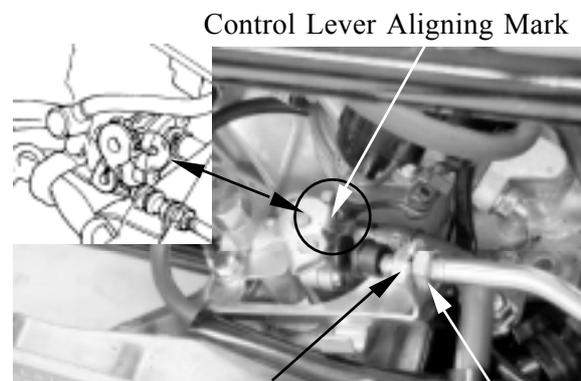
OIL PUMP ADJUSTMENT

(Mongoose/KXR 50)

⊗ 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.



Lock Nut Adjusting Nut

3. INSPECTION/ADJUSTMENT



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:

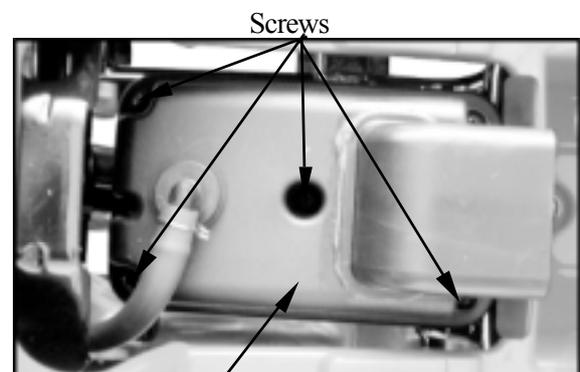
- Excessive white smoke or hard starting due to pump control lever excessively open
- Seized piston due to pump control lever insufficiently open

AIR CLEANER

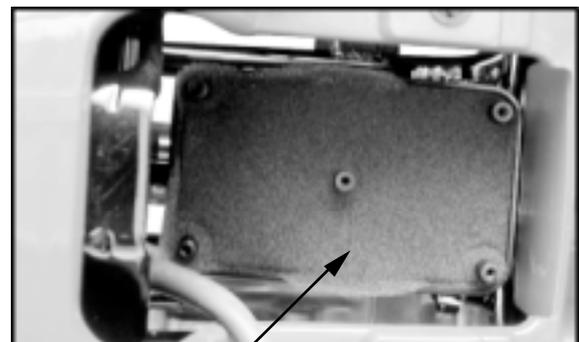
AIR CLEANER REPLACEMENT/CLEANING

To replace the air cleaner
(Mongoose/KXR 90):

1. Remove the seat. (See page 2-3.)
2. Remove the five screws and then remove air filter case cover.
3. Remove the air filter element, and separate it from the box.



Air Filter Case Cover



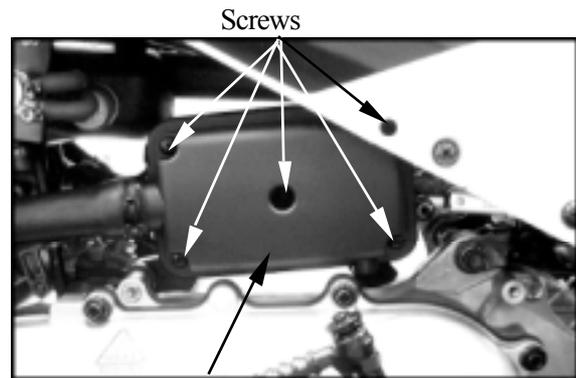
Air Filter Element

3. INSPECTION/ADJUSTMENT

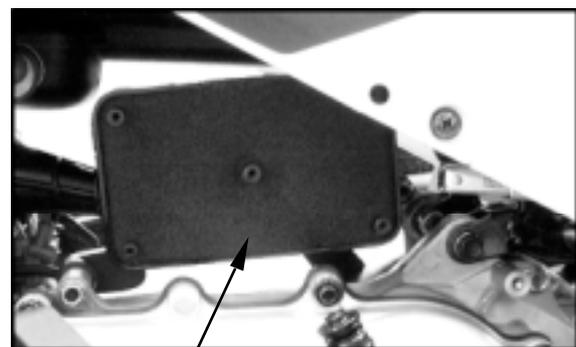
To replace the air cleaner

(Mongoose/KXR 50):

1. Remove the five screws and air filter case cover.



2. Remove the air filter element, and separate it from the box.



To clean the air filter element:

1. Wash the element gently but thoroughly in solvent.

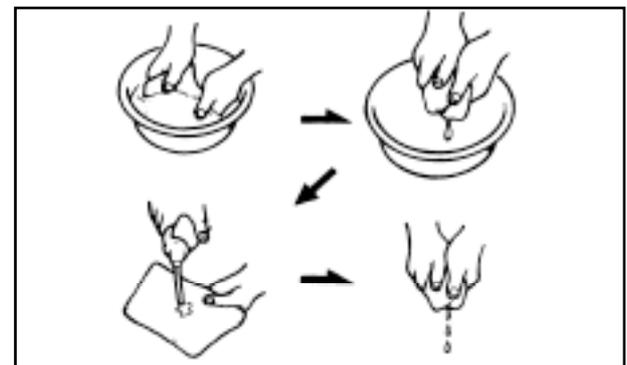
°C Use parts cleaning solvent only. Never use gasoline or low flash point solvents which may lead to a fire or explosion.

2. Squeeze the excess solvent out of the filter and let it dry.

°C Do not twist or wring out the foam element. This could damage the foam material.

3. Inspect the element. If damaged, replace it.
4. Apply quality foam air filter oil to the element. If foam air filter oil is not available, motor oil may be used.

°C The element should be wet but not dripping.



5. Reinstall the element to the air filter case.
6. Reinstall the element assembly and parts removed for access.

Apply the engine oil.

Squeeze out the excess oil.

CHANGE INTERVAL

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

3. INSPECTION/ADJUSTMENT

SPARK PLUG

Remove the ignition coil 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:

(Mongoose/KXR 90): NGK: C7HSA

(Mongoose/KXR 50): NGK: BR8HAS

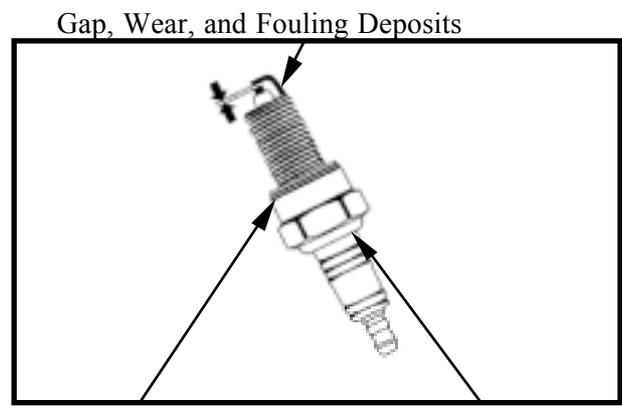


Ignition Coil Cap/Spark Plug

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.



Gap, Wear, and Fouling Deposits

Washer Deformation

Cracks, Damage

CYLINDER COMPRESSION

Warm up the engine before compression test.

Remove the spark plug.

Insert a compression gauge.

Open the throttle valve fully and push the starter button to test the compression.

Compression:

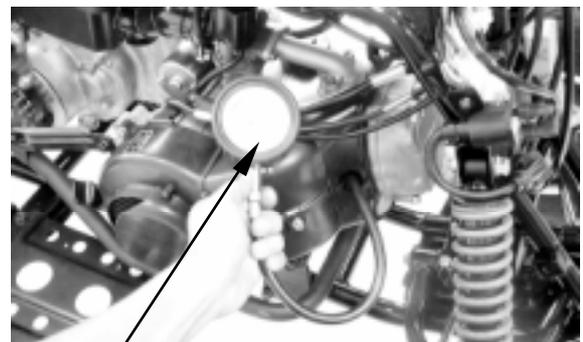
(Mongoose/KXR 90): 16kg/cm_

(Mongoose/KXR 50): 12kg/cm_

If the compression is low, check for the following:

- Leaky valves
- Valve clearance too small
- Leaking cylinder head gasket
- Worn piston rings
- Worn piston/cylinder

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



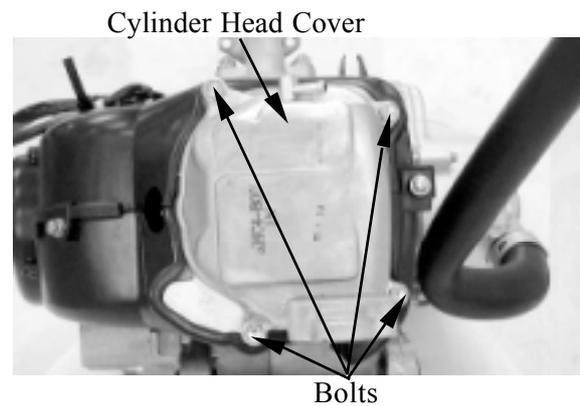
Compression Gauge

3. INSPECTION/ADJUSTMENT

VALVE CLEARANCE (Mongoose/KXR 90):

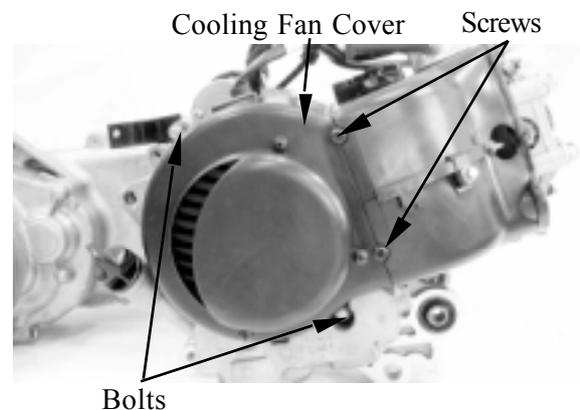
- Inspect and adjust valve clearance while the engine is cold (below 35°C).

Disconnect the oil recycle tube at the cylinder head cover.
Remove the four bolts and cylinder head cover.



Remove the two screws and two bolts, then remove the fan cover.

Turn the cooling fan clockwise so that the "T" mark on the flywheel aligns with the index mark on the crankcase to bring the round hole on the camshaft gear facing up to the top dead center on the compression stroke.



Inspect and adjust the valve clearance.

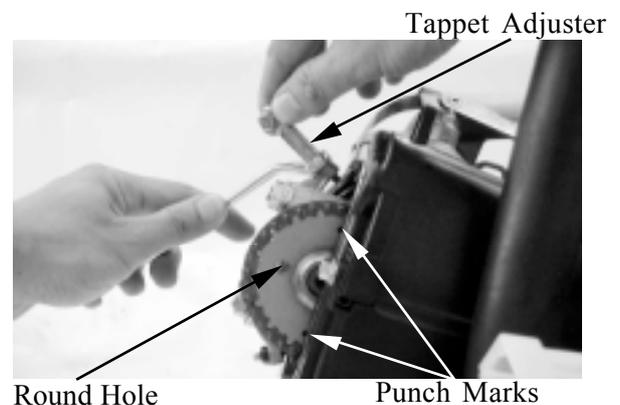
Valve Clearance: IN: 0.1mm
EX: 0.1mm

Loosen the lock nut and adjust by turning the adjusting nut

Special

Tappet adjuster E012

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



CARBURETOR IDLE SPEED

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

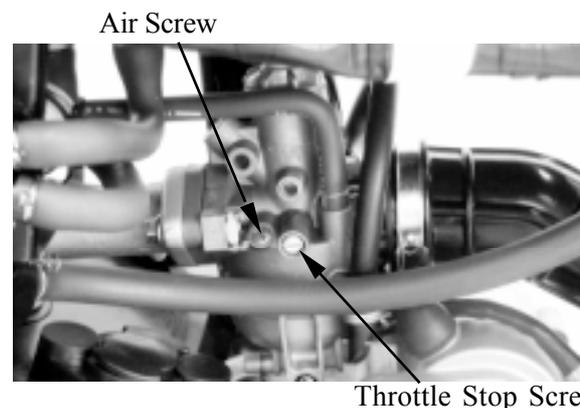
Warm up the engine before this operation. Start the engine and connect a tachometer. Turn the throttle stop screw to obtain the specified idle speed.

Idle Speed:

(Mongoose/KXR 90): 1700±100rpm

(Mongoose/KXR 50): 2000±100rpm

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



3. INSPECTION/ADJUSTMENT

ENGINE OIL (Mongoose/KXR 90)

OIL LEVEL

Remove the two bolts and right side cover.

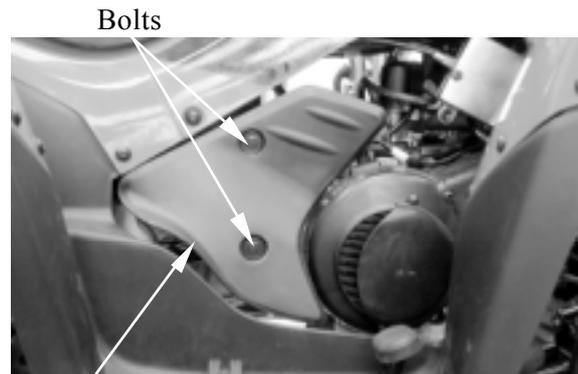
Place the machine on a level place.
Warm up the engine for several minutes and stop it.

Remove the dipstick and wipe it off with a clean rag. Insert the dipstick in the filler hole without screwing it in.

☺ Run the engine for 2_ 3 minutes and check the oil level after the engine is stopped for 2_ 3 minutes.

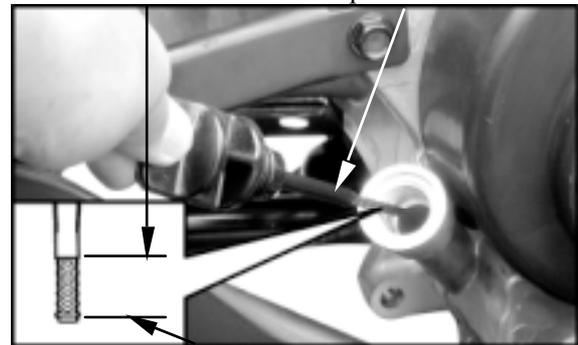
Remove the dipstick and inspect the oil level.

The oil level should be between the maximum and minimum marks. If the level is low, add oil to raise it to the proper level.



Right Side Cover

Maximum Level Mark Dipstick/Oil Filler Cap



Minimum Level Mark

ENGINE OIL REPLACEMENT

Place the machine on a level place.
Warm up the engine for several minutes and stop it.

Place a container under the engine.

Remove right side cover.

Remove the oil filler cap and drain plug to drain the oil.

Reinstall the drain plug and tighten the drain plug to specification.

Torque: 2.0_ 3.0kgf-m

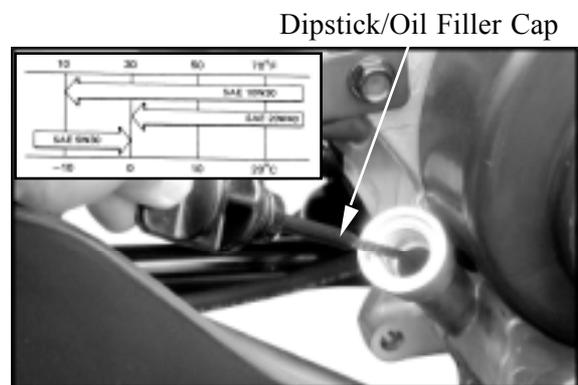
Fill the engine with oil and install the oil filler cap.

Warm up the engine for several minutes at idle speed. Check for oil leakage while warming up.

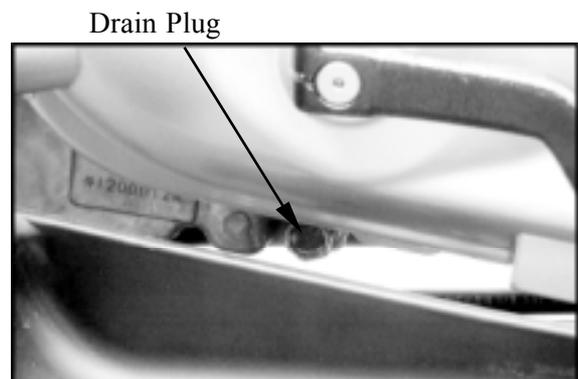
☺ Be sure no foreign material enters the crankcase.

Oil Capacity: At disassembly: 0.8L

At change: 0.7L



Dipstick/Oil Filler Cap



Drain Plug

3. INSPECTION/ADJUSTMENT

ENGINE OIL REPLACEMENT AND OIL FILTER CLEANING

- A. Place the machine on a level place.
- B. Warm up the engine for several minutes and stop it.
- C. Place a container under the engine.
- D. Remove the oil filler cap and oil filter cap to drain the oil.

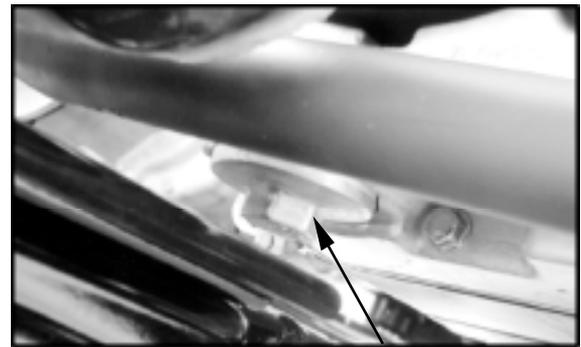
° Be sure no foreign material enters the crankcase.

° When removing the drain plug, the compression spring, oil strainer and O-ring will fall out. Take care not to lose these parts.

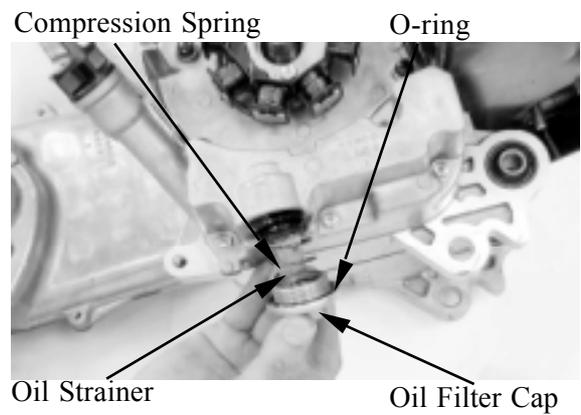
- E. Clean the oil strainer with solvent.
- F. Inspect the O-ring and replace if damaged.
- G. Reinstall the O-ring, oil strainer, compression spring and drain plug. Tighten the drain plug to specification.
Torque: 1.0_ 2.0kgf-m

° Before reinstalling the drain plug, be sure to install the O-ring, compression spring and oil strainer.

Oil Capacity: At disassembly: 0.8L
 At change: 0.7L



Oil Filter Cap



Oil Strainer

Oil Filter Cap

3. INSPECTION/ADJUSTMENT

TRANSMISSION OIL

TRANSMISSION OIL MEASUREMENT

Place the machine on a level place.

Remove the oil filler bolt and check the oil level. It should be up to the brim of the hole. If the level is low, add oil to raise it to the proper level.

Reinstall the oil filler bolt and tighten to specification.

Torque: 1.0_ 2.0kgf-m

TRANSMISSION OIL REPLACEMENT

Place the machine on a level place.

Place a container under the engine.

Remove the oil filler bolt and drain plug to drain the oil.

Reinstall the drain plug and tighten to specification.

Torque: 1.0_ 2.0kgf-m

Fill the engine with oil and install the oil filler bolt.

Torque: 1.0_ 2.0kgf-m

Oil Capacity: At disassembly: 0.12L
At change: 0.11L

Ⓞ Be sure no foreign material enters the crankcase.

Start the engine and warm up for a few minutes. While warming up, check for oil leakage. If oil leakage is found, stop the engine immediately and check for the cause.

Oil Filter Bolt/Measurement Hole



Drain Plug

3. INSPECTION/ADJUSTMENT

DRIVE BELT

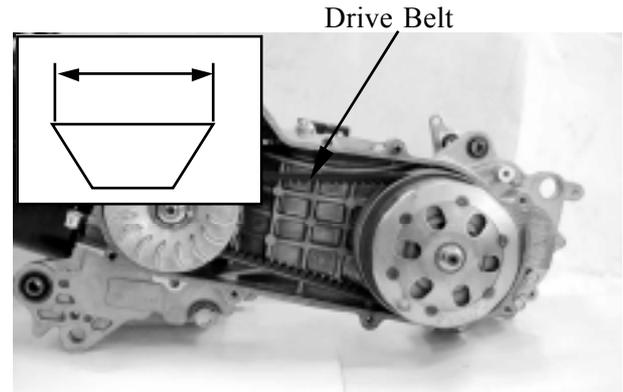
Remove the left crankcase cover.
Inspect the drive belt for cracks, scaling,
chipping or excessive wear.
Measure the V-belt width

Service limit:

Mongoose/KXR 90:16.5mm

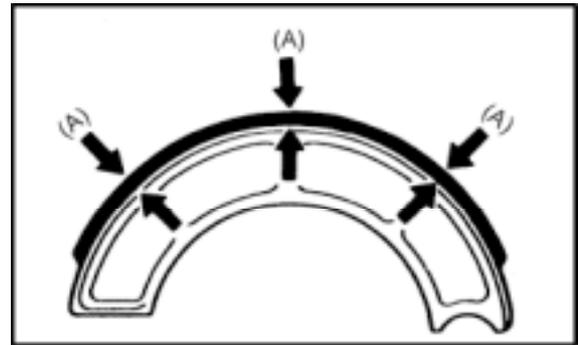
Mongoose/KXR 50:16.5mm

Replace the drive belt if out of specification.



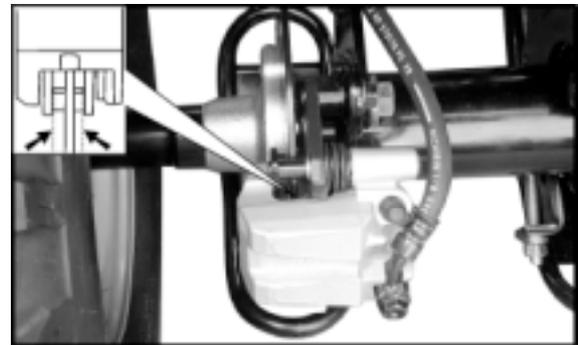
BRAK SHOES

The checking of brake shoes wear will
disassemble the brake. If the lining thickness
below to the wear limit (A) 2.0mm (0.08in),
to replace the shoes as a set.



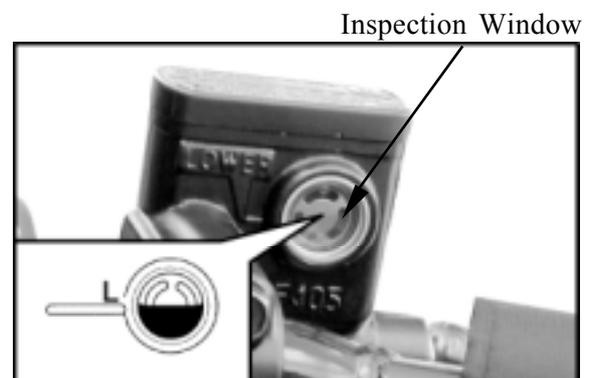
BRAKE PADS

A wear indicator is provided on each brake.
The indicators allows checking of brake
pads wear. Check the position of the
indicator. If the indicator reaches the wear
limit line, to replace the pads.



BRAKE FLUID

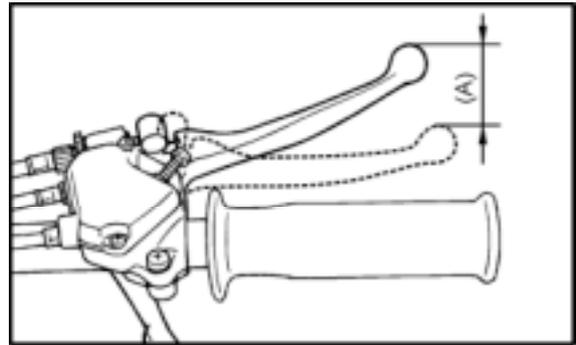
Check if the fluid level is below the lower
level mark through the inspection window.



3. INSPECTION/ADJUSTMENT

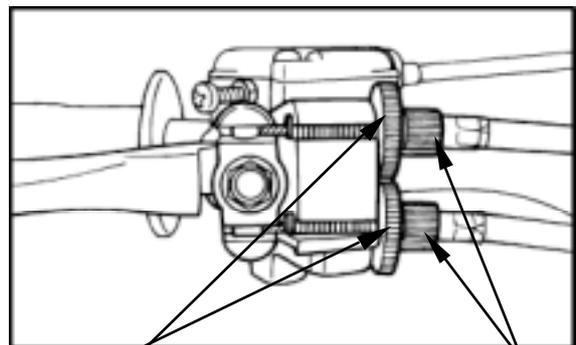
BRAKEN LEVER FREE PLAY (DRUM BRAKE)

The brake lever free play (A) should be adjusted to 10~20 mm (0.4~0.8 in) at the tip of the brake lever.



FRONT BRAKE FREE PLAY ADJUSTMENT

Loosen the upper lock nut and fully turn in the adjusting bolt.
Loosen the lower lock nut.
Turn the lower adjusting bolt until specified free play is obtained.
Tighten the lower lock nut.

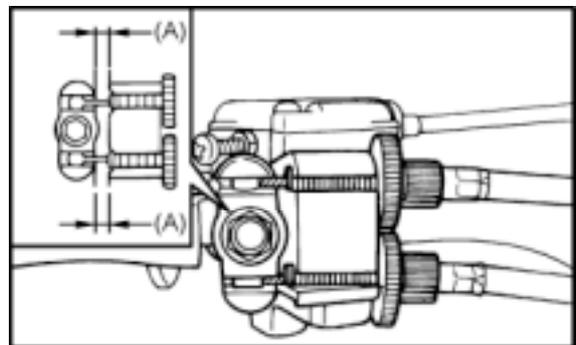


Lock Nuts

Adjusting Bolts

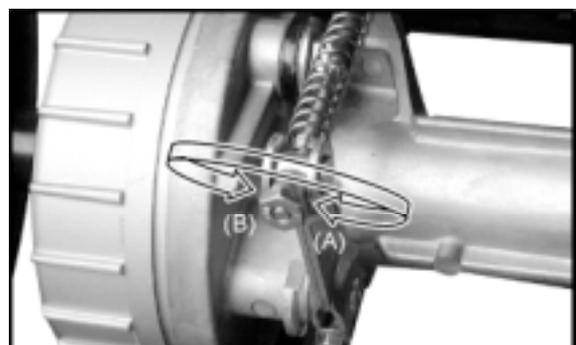
While applying the front brake, turn out the upper adjusting bolt until the upper and lower cable lengths (A) are equal. The cable joint will become vertical.

Tighten the upper lock nut.



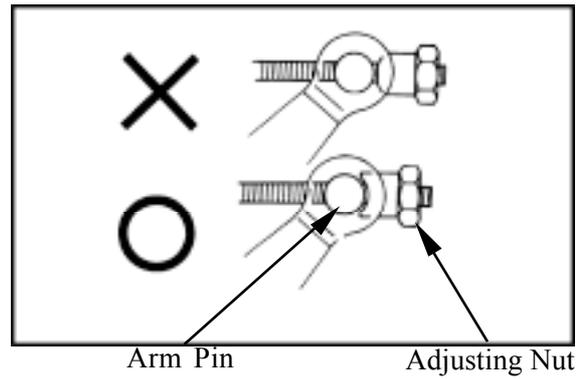
REAR BRAKE FREE PLAY ADJUSTMENT

Turn the adjusting nut on the brake hub in direction A to decrease play, and in direction B to increase play.



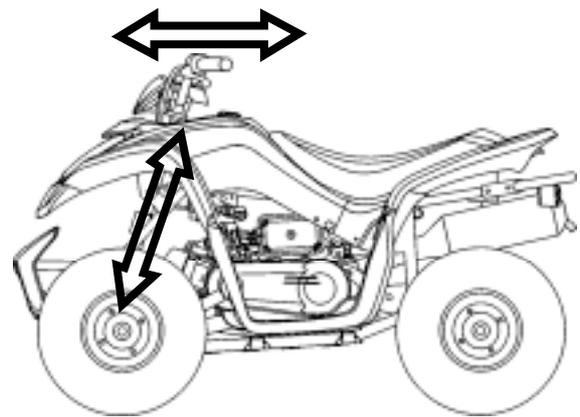
3. INSPECTION/ADJUSTMENT

⚠ Make sure the cut-out on the adjusting nut is seated on the brake arm pin after making final free play adjustment.



STEERING SYSTEM INSPECTION

Place the machine on a level place.
 Check the steering column bushings and bearings:
 Move the handlebar up and down, and/or back and forth.
 Replace the steering column bushings and or bearings if excessive play



Check the tie-rod ends
 Turn the handlebar to the left and/or right until it stops completely, then slightly move the handlebar from left to right.
 Replace the tie-rod ends if tie-rod end has any vertical play.



Raise the front end of the machine so that there is no weight on the front wheels.
 Check ball joints and/or wheel bearings.
 Move the wheels laterally back and forth.
 Replace the front arms and/or wheel bearings if excessive free play.



3. INSPECTION/ADJUSTMENT

TOE-IN ADJUSTMENT

Place the machine on a level place.

Measure the toe-in

Adjust if out of specification.

Toe-in measurement steps:

Mark both front tire tread centers.

Raise the front end of the machine so that there is no weight on the front tires.

Fix the handlebar straight ahead.

Measure the width A between the marks.

Rotate the front tires 180 degrees until the marks come exactly opposite.

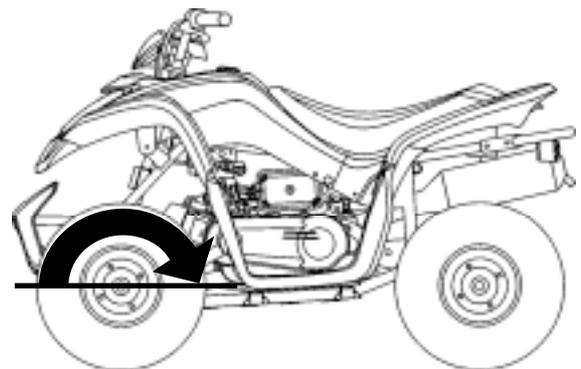
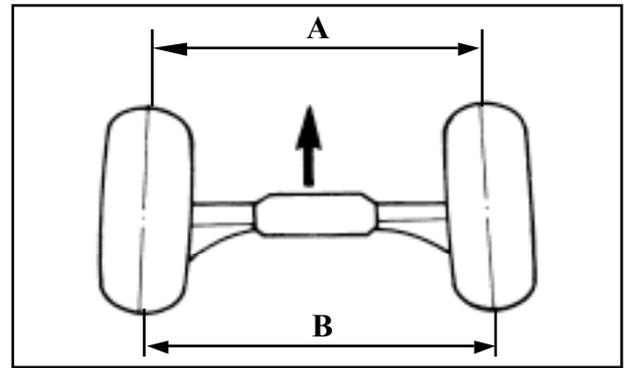
Measure the width B between the marks.

Calculate the toe-in using the formula given below.

$$\text{Toe-in} = B^\circ - A$$

Toe-in: 0_ 15mm

If the toe-in is incorrect, adjust the toe-in



Adjust the toe-in step:

Mark both tie-rod ends.

This reference point will be needed during adjustment.

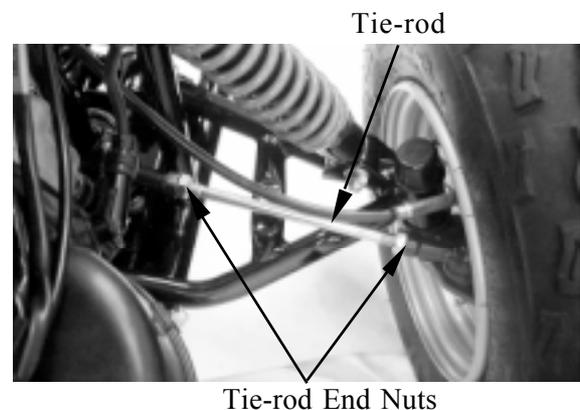
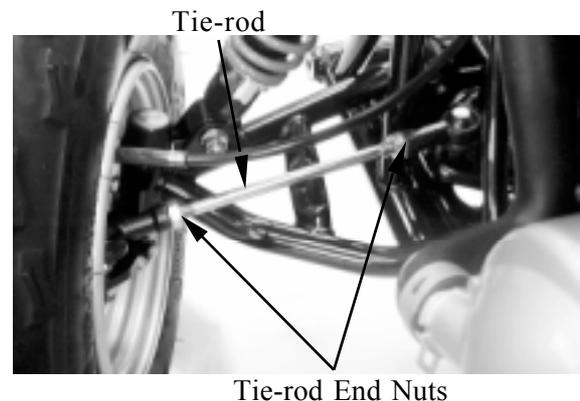
Loosen the lock nuts (tie-rod end) of both tie-rods

The same number of turns should be given to both tie-rods right and left until the specified toe-in is obtained, so that the lengths of the rods will be kept the same.

Torque: 2.5_ 3.5kgf-m



- Be sure that both tie-rod are turned the same amount. If not, the machine will drift tight or left even though the handlebar is positioned straight which may lead to mishandling and accident.
- After setting the toe-in to specification, run the machine slowly for some distance with hands placed lightly on the handlebar and check that the handlebar responds correctly. If not, turn either the right or left tie-rod within the toe-in specification.

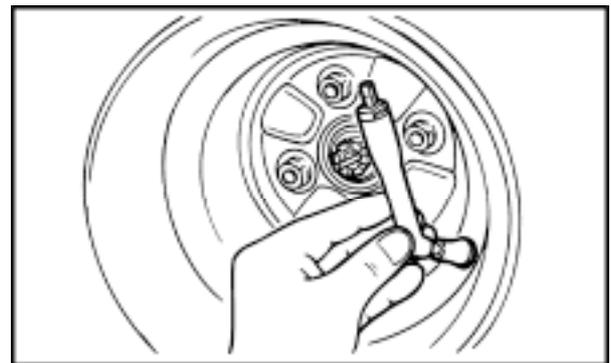


3. INSPECTION/ADJUSTMENT

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
Front	0.22kgf/cm ₂
Rear	0.22kgf/cm ₂

TIRE SIZE (Mongoose/KXR 90)

Front : 18*7-8

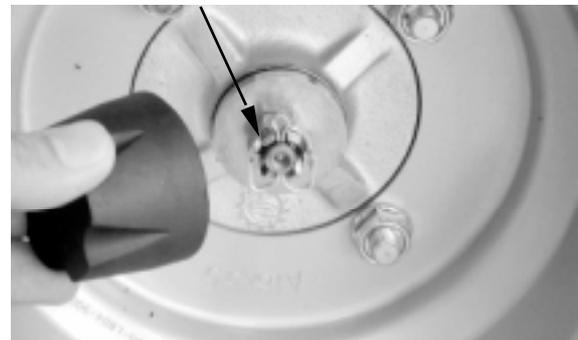
Rear : 18*9-8

TIRE SIZE (Mongoose/KXR 50)

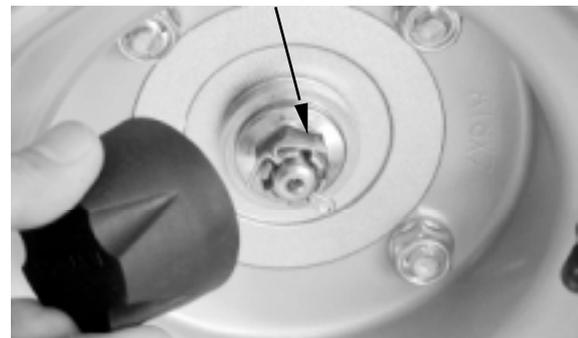
Front : 16*8-7

Rear : 16*8-7

Front Axle Nut



Rear Axle Nut



Check the front wheel hub nut for looseness.
Check the rear wheel hub nut for looseness.
If the axle nuts are loose, tighten them to the specified torque.

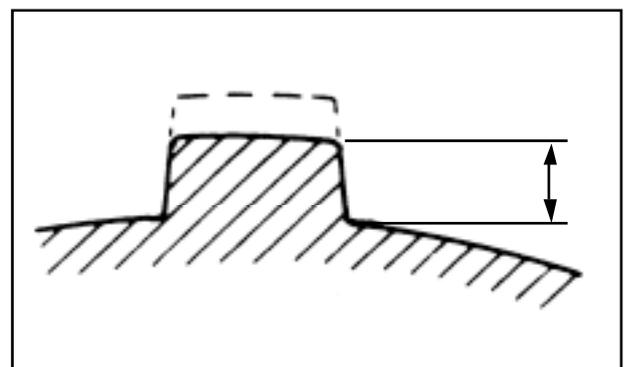
Torque: Front : 5.5_ 6.5kgf-m

Rear : 6.0_ 8.0kgf-m

WHEEL INSPECTION

Inspect the tire surfaces.
Replace if wear or damage.
Tire wear limit: 3.0mm

⊙ It is dangerous to ride with a worn out tire. When a tire wear is out of specification, replace the tire immediately.



3. INSPECTION/ADJUSTMENT

Inspect the wheel.

Replace if damage or bends

Always balance the wheel when a tire or wheel has been changed or replaced.

- - Never attempt even small repairs to the wheel.
 - Ride conservatively after installing a tire to allow it to seat itself properly on the rim.

DRIVE CHAIN SLACK ADJUSTMENT

Before checking and/or adjusting, rotate the rear wheels several revolutions and check slack at several points to find the tightest point. Check and/or adjust the chain slack with the rear wheels in this “tightest” position.

- Too little of chain slack will overload the engine and other vital parts; keep the slack within the specified limits.

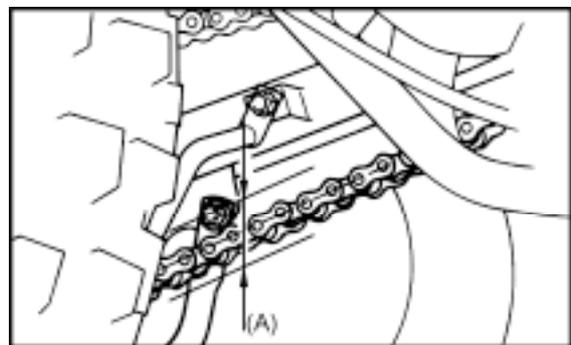
Place the machine on a level place.

- Wheels should be on the ground without the rider on it.

Check drive chain slack (A).

Adjust if out of specification.

Drive chain slack: Approximately 10~20mm

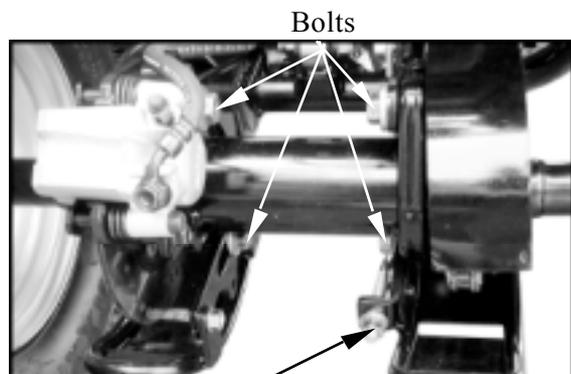


Adjust drive chain slack:

Elevate the rear wheels by placing a suitable stand under the rear of frame.

- Support the machine securely so there is no danger of it falling over.

Loosen the upper and lower axle holding bolts.



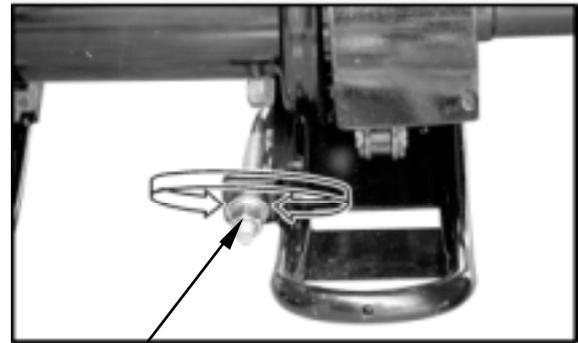
Hub Stopper Nut

3. INSPECTION/ADJUSTMENT

Turn the adjusting nut, to decrease or increase chain slack.

Retighten the upper and lower axle holding bolts.

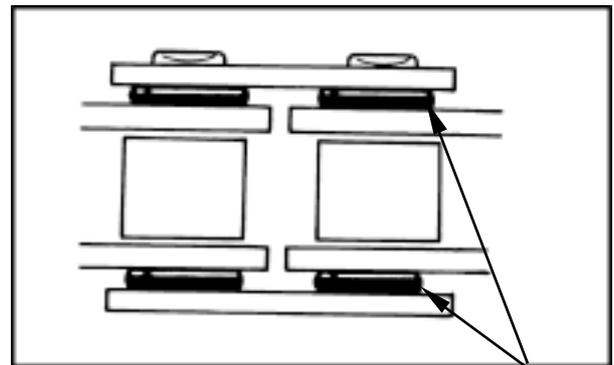
Torque: 6.0_ 8.0kgf-m



Adjusting Nut

Drive chain cleaning and lubrication

The drive chain is equipped with rubber O-rings between the chain plates. Steam cleaning, high-pressure washes, and certain solvents can damage these O-rings. Use only kerosene to clean the drive chain. Wipe it dry, and thoroughly lubricate it with SAE 30~50 motor oil. Do not use any other lubricants on the drive chain. They may contain solvents that could damage the O-rings.



O-ring

3. INSPECTION/ADJUSTMENT

CABLE INSPECTION AND LUBRICATION

- Damaged cable sheath may cause corrosion and interfere with the cable movement. An unsafe condition may result so replace such cable as soon as possible.

Inspect the cable sheath.

Replace if damage.

Check the cable operation.

Lubricate or replace if unsmooth operation.

- Hold cable end high and apply several drops of lubricant to cable.

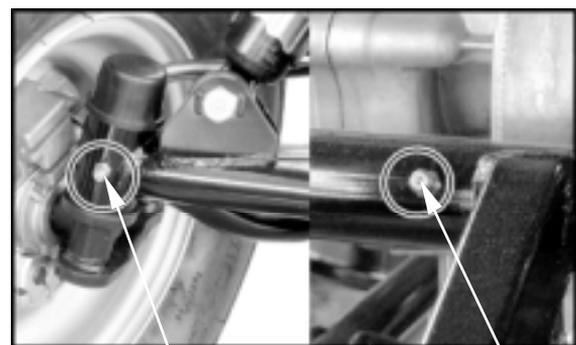
LEVER LUBRICATION

Lubricate the pivoting parts of each lever.

SUSPENSION LUBRICATION

Inject grease into the nipples using a grease gun until slight over flow is observed from the thrust covers.

- Wipe off the excess grease.



Front Swing
Arm Nipple

Rear Swing
Arm Nipple

3. INSPECTION/ADJUSTMENT

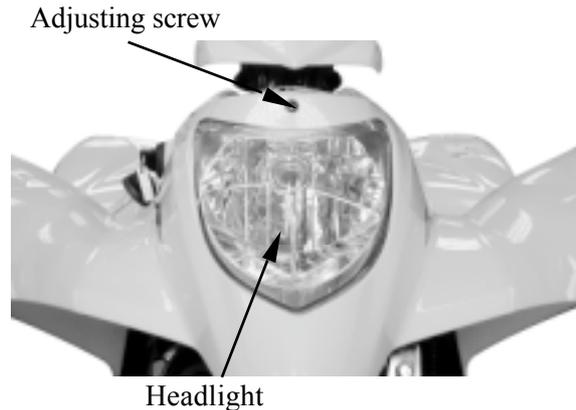
HEADLIGHT BEAM ADJUSTMENT (ON ROAD ONLY)

Vertical adjustment:

Turn the ignition switch ON and start the engine.

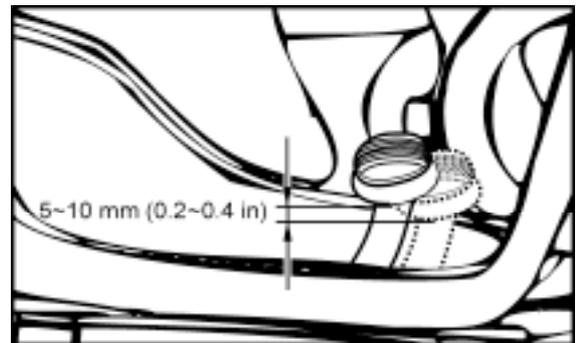
Turn on the headlight switch.

Adjust the headlight aim by turning the headlight aim adjusting screw.



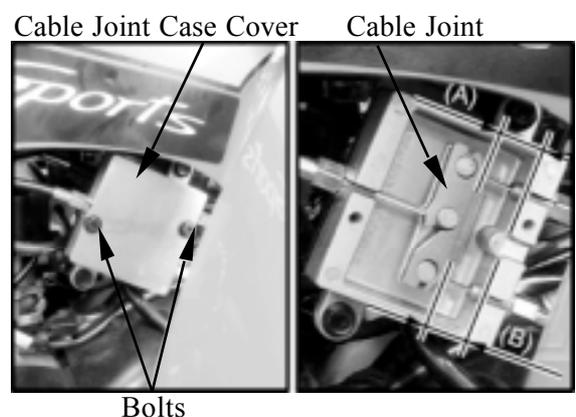
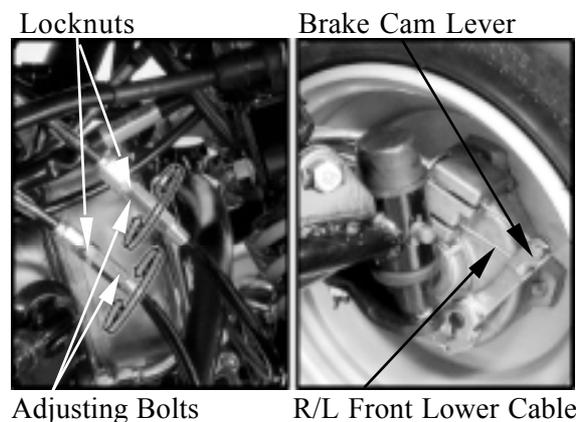
BRAKE PEDAL ADJUSTMENT (KXR 90 ON ROAD ONLY)

The brake pedal free play should be adjusted to 5~10 mm (0.2~0.4 in) at the brake pedal pivot. If the free play is incorrect, adjust as follows:



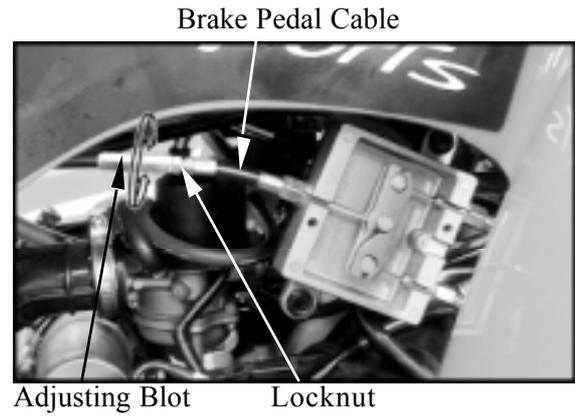
Adjust:

1. Keep front brake lever free play at 10~20 mm (0.4~0.8 in).
2. Loosen the locknuts. (R/L front lower brake cables)
3. Turn the adjusting bolts until the front lower brake cables is tensed.
4. Apply the front brake lever and check front brake cam lever to make sure that the brake does not drag after adjusting.
5. While remove the cable joint case cover and applying the brake pedal, make sure the left and right front lower cable lengths (A and B) are equal. The cable joint will become vertical.
6. Tighten the locknuts. (R/L front lower brake cables)



3. INSPECTION/ADJUSTMENT

7. Loosen the locknut. (Brake pedal cable)
8. Turn the adjusting bolt until the specified free play is obtained.
9. Tighten the locknut. (Brake pedal cable)



BRAKE FLUID (KXR 90 ON ROAD ONLY)

Check if the fluid level is below the lower level mark through the inspection window.

