

## 4. LUBRICATION SYSTEM

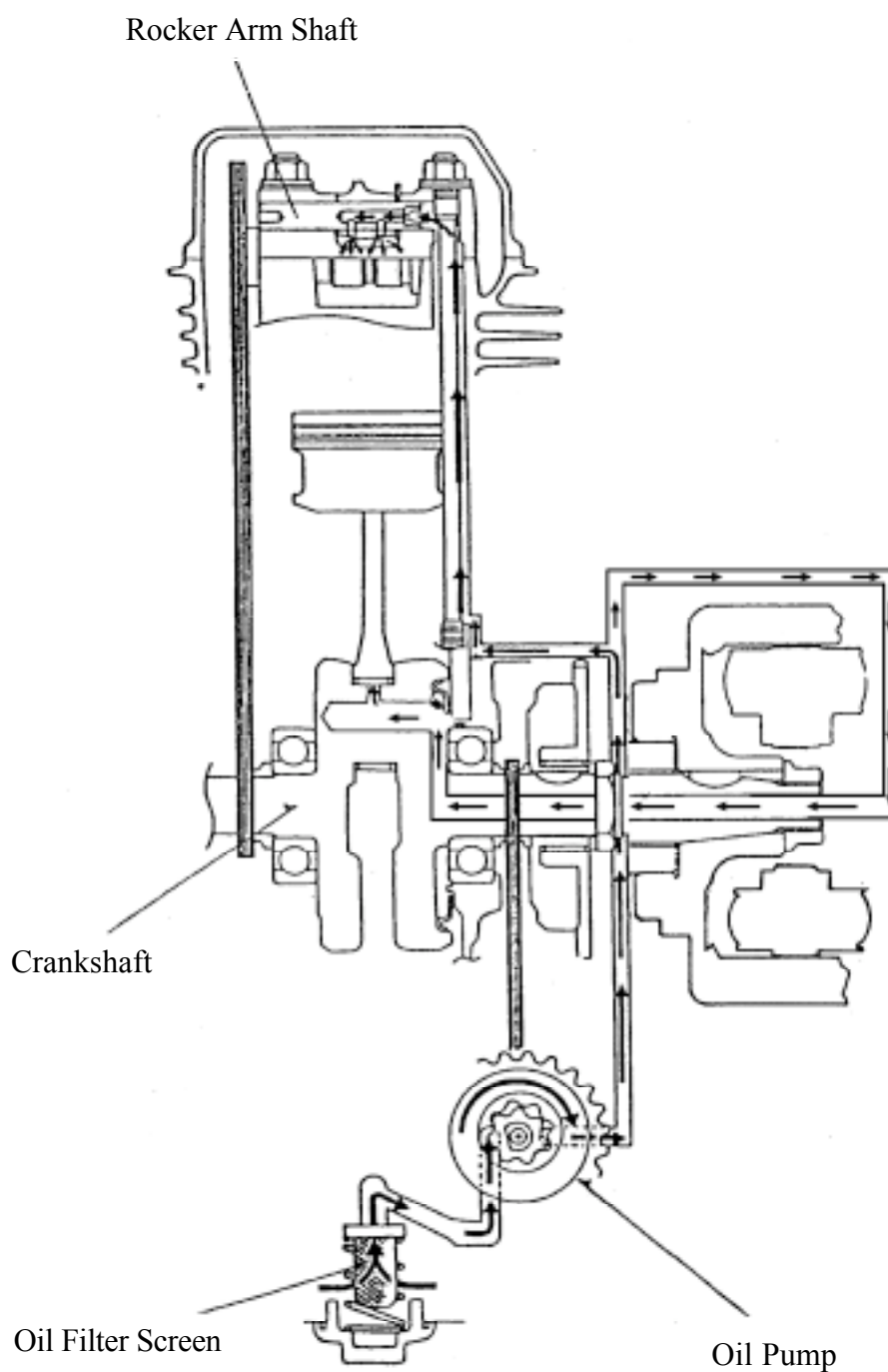
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## LUBRICATION SYSTEM

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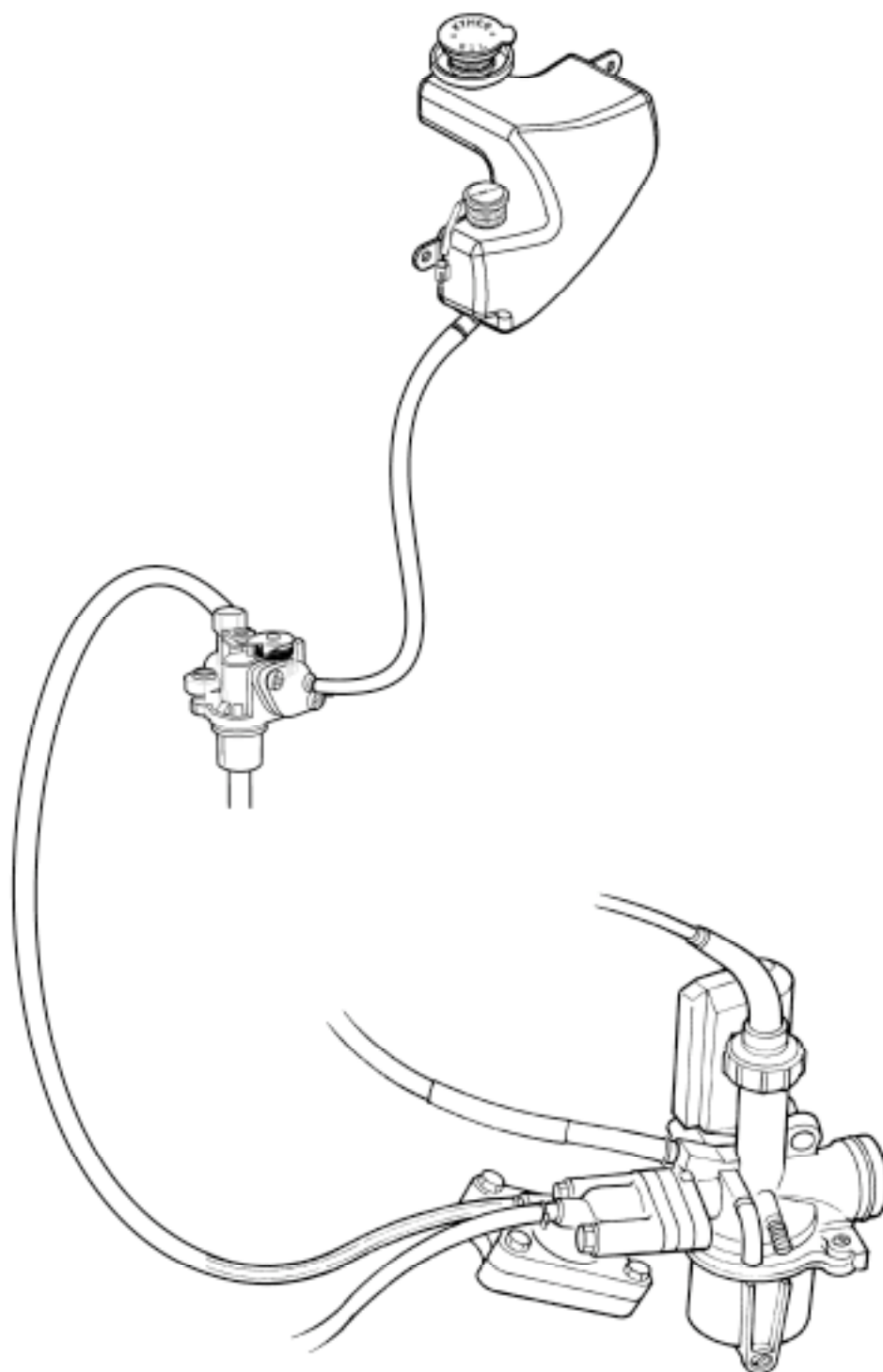
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### LUBRICATION SYSTEM (Mongoose/KXR 90)



## **4. LUBRICATION SYSTEM**

### **LUBRICATION SYSTEM (Mongoose/KXR 50)**



## 4. LUBRICATION SYSTEM

### SERVICE INFORMATION (Mongoose/KXR 90)

#### GENERAL INSTRUCTIONS

- The maintenance of lubrication system can be performed with the engine installed in the frame.
- Use care when removing and installing the oil pump not to allow dust and foreign matters to enter the engine and oil line.
- Do not attempt to disassemble the oil pump. The oil pump must be replaced as a set when it reaches its service limit.
- After the oil pump is installed, check each part for oil leaks.

#### SPECIFICATIONS

Item		Standard (mm)	Service Limit (mm)
Oil pump	Inner rotor-to-outer rotor clearance	0.15	0.20
	Outer rotor-to-pump body clearance	0.15_ 0.20	0.25
	Rotor end-to-pump body clearance	0.04_ 0.09	0.12

#### TROUBLESHOOTING

##### Oil level too low

- Natural oil consumption
- Oil leaks
- Worn or poorly installed piston rings
- Worn valve guide or seal

##### Poor lubrication pressure

- Oil level too low
- Clogged oil filter or oil passages
- Not use the specified oil

## **4. LUBRICATION SYSTEM**

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### **SERVICE INFORMATION (Mongoose/KXR 50)**

#### **GENERAL INSTRUCTIONS**

- Use care when removing and installing the oil pump not to allow dust and dirt to enter the engine and oil line.
- Do not attempt to disassemble the oil pump.
- Bleed air from the oil pump if there is air between the oil pump and oil line.
- If the oil is disconnected, refill the oil line with motor oil before connecting it.

#### **SPECIFICATIONS**

- Recommended Motor Oil: SAE20W20# 2-stroke Motor Oil
- Oil Capacity : 1.0 liter
- Light comes on : 0.25 liter

#### **TROUBLESHOOTING**

##### **Excessive white smoke or carbon deposits on spark plug**

- Oil pump not properly synchronized (excessive oil)
- Poor quality oil

##### **Engine overheating**

- Oil pump not properly adjusted (insufficient oiling)
- Poor quality oil

##### **Seized piston**

- No oil in tank or clogged oil line
- Oil pump not properly adjusted (insufficient oiling)
- Air in oil line
- Faulty oil pump

##### **Oil not flowing out of tank to engine**

- Clogged oil tank cap breather hole
- Clogged oil filter

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### ENGINE OIL/OIL FILTER (Mongoose/KXR 90)

#### OIL LEVEL AND OIL CHANGE

Refer to the “ENGINE OIL” section in the chapter 3 to check the oil level and replacement and oil filter cleaning.

### OIL PUMP

#### REMOVAL

Place a container under the engine.

Remove the drain plug to drain the oil. (⇒ 3-9)

Remove the A.C. generator flywheel. (⇒ 14-8)

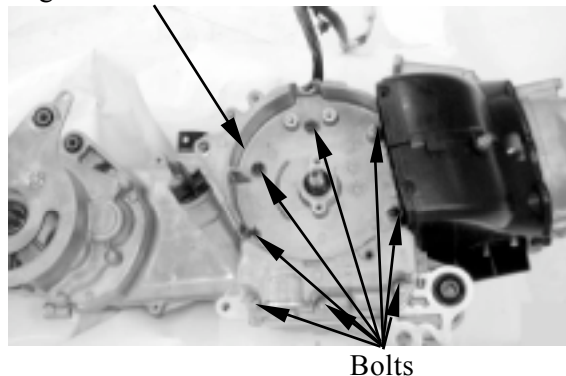
Remove the A.C. generator stator and pulsar coil. (⇒ 14-8)

Remove the eight right crankcase cover bolts and the right crankcase cover.

Remove the two bolts and oil separator cover.

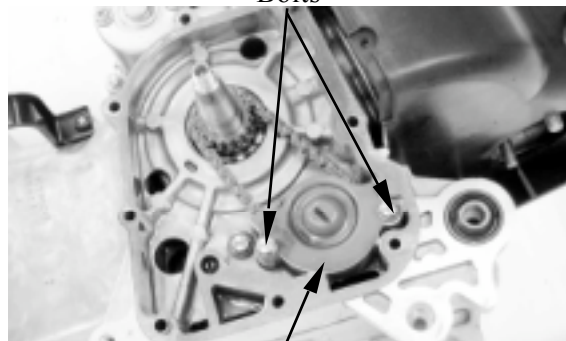
Remove the oil pump driven gear nut.  
Remove the oil pump driven gear and drive chain.

Right Crankcase Cover



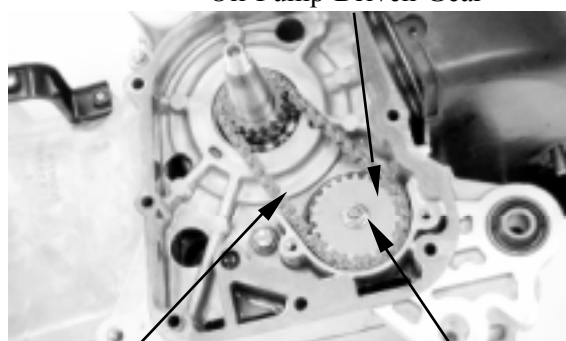
Bolts

Bolts



Oil Separator Cover

Oil Pump Driven Gear

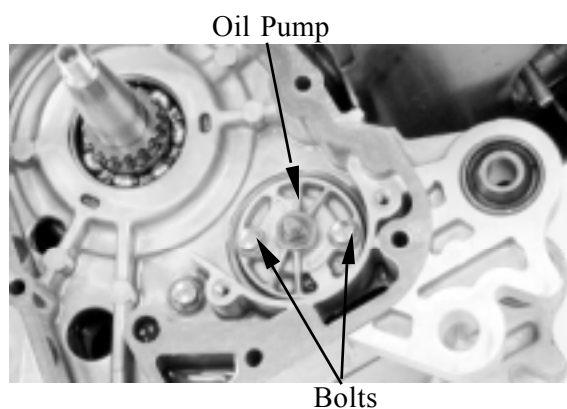


Drive Chain

Nut

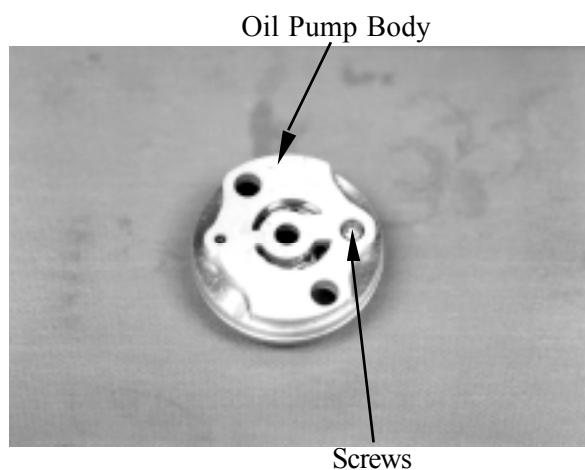
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Remove the two oil pump mounting bolts and the oil pump.



### DISASSEMBLY

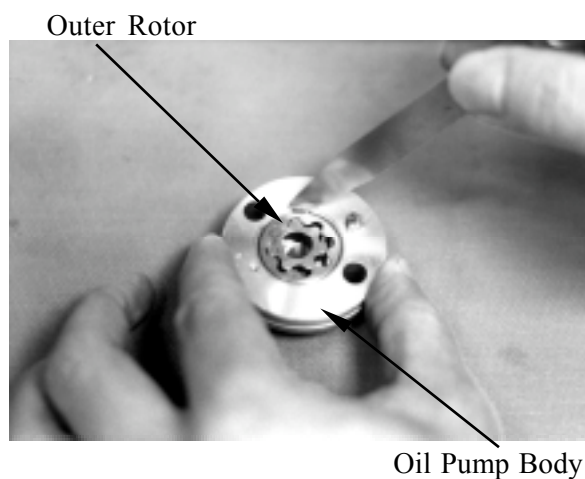
Remove the screw and disassemble the oil pump.



### INSPECTION

Measure the pump body-to-outer rotor clearance.

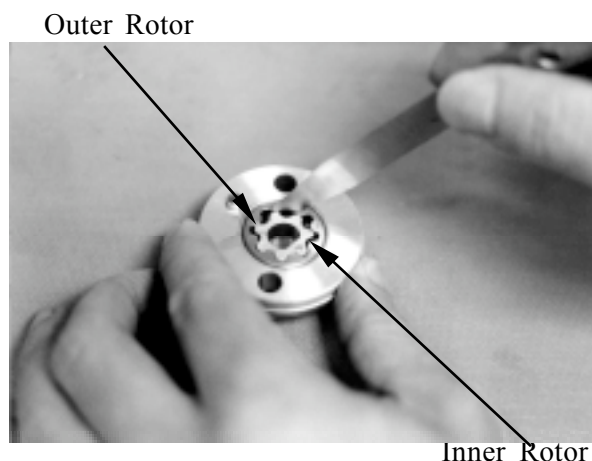
**Service Limit:** 0.25mm



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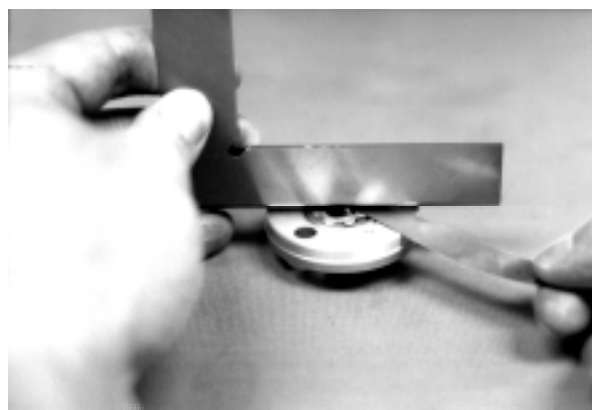
Measure the inner rotor-to-outer rotor clearance.

**Service Limit:** 0.2mm



Measure the rotor end-to-pump body clearance.

**Service Limit:** 0.12mm



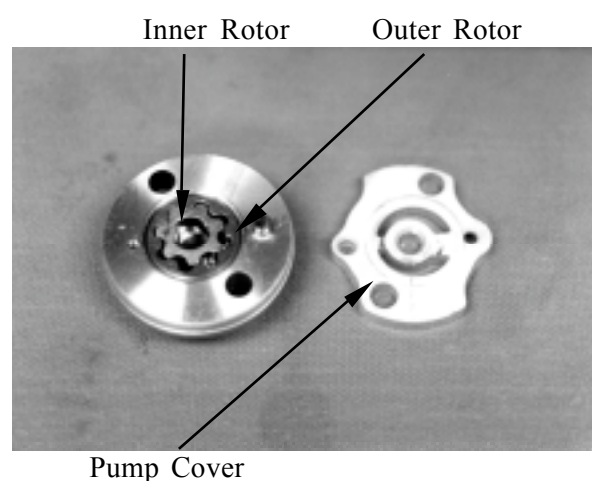
### ASSEMBLY

Install the outer rotor, inner rotor and pump shaft into the pump body.

- \* Insert the pump shaft by aligning the flat on the shaft with the flat in the inner rotor.

Install the dowel pin.

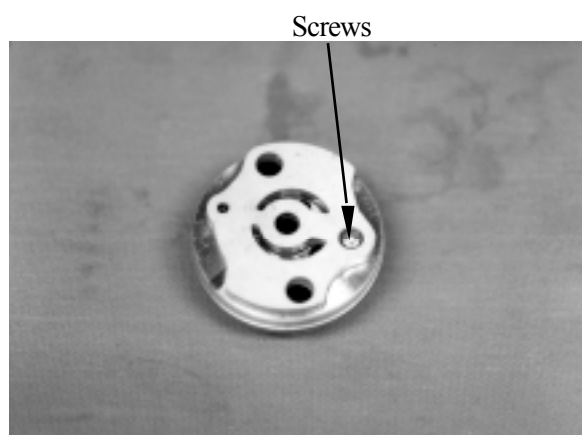
Install the pump cover by aligning the hole in the cover with the dowel pin.





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Tighten the screw to secure the pump cover.  
Make sure that the pump shaft rotates freely without binding.

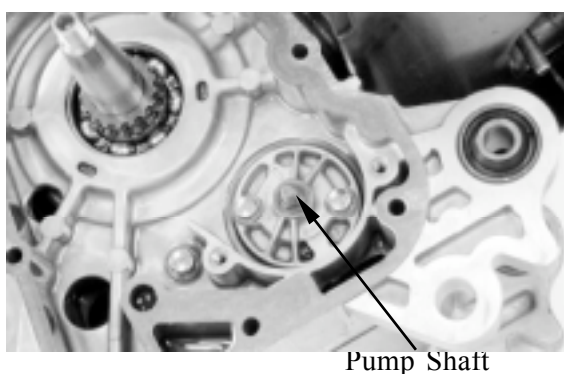
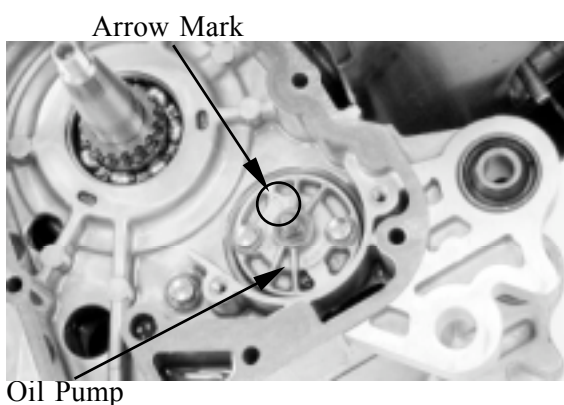


### INSTALLATION

Reverse the “OIL PUMP REMOVAL” procedures.

Make sure that the pump shaft rotates freely without binding.

- \* Install the oil pump with the arrow on the pump body facing up and fill the oil pump with engine oil before installation.

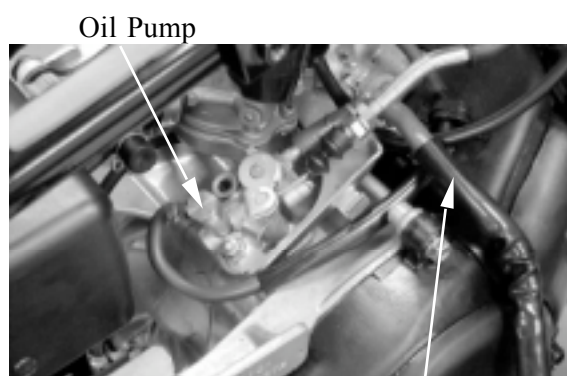


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### OIL PUMP BLEEDING (Mongoose/KXR 50)



- Air in the oil tubes will block oil flow and result in severe engine damage.
- Bleed air from the oil tubes and oil pump whenever the oil tubes or pump have been removed or there is air in the oil tubes.



Oil Outlet Line

### OIL INLET LINE/OIL PUMP BLEEDING

Fill the oil tank with recommended oil.  
Place a shop towel around the oil pump.  
Disconnect the oil inlet tube from the oil pump and clip it.  
Fill the oil pump with oil by squirting clean oil through the joint. (About 3cc)  
Fill the oil line with oil and connect it to the oil pump.



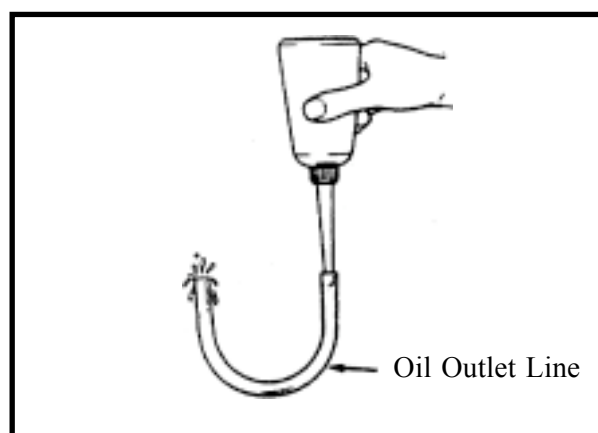
Bleed air from the oil inlet tube first, then bleed air from the oil outlet line.

### OIL OUTLET LINE BLEEDING

1. Disconnect the oil outlet tube and bend it into U shape. Force air out of the tube by filling it with oil.
2. Start the engine and allow it to idle with the oil control lever in the fully open position. Visually check the oil flow.
3. If there is no oil flowing out within 1 minute, bleed air from the oil inlet tube and oil pump.



- Never run the engine in a closed area.
- Do not increase the engine speed at will.

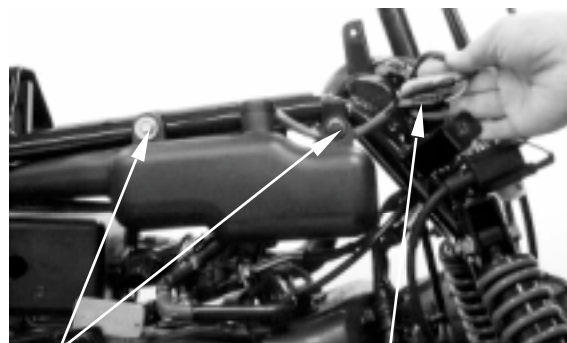


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### OIL TANK (Mongoose/KXR 50)

#### OIL TANK REMOVAL

Remove the oil level switch connector.  
Remove the two bolts attaching the oil tank.



Bolts

Oil Level Switch Connector

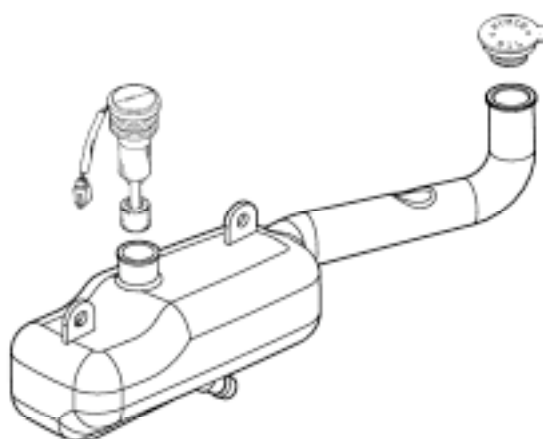
Oil Inlet Tube



Disconnect the oil inlet tube.  
Drain the oil inside the oil tank into a clean container.  
Remove the oil tank.  
The installation sequence is the reverse of removal.



- Connect the oil tube properly.
- Bleed air from the oil pump after installation. (See page 4-9)
- The oil tube clip (at the oil tank side) must be locked from inside of the oil tube joint.



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### OIL PUMP (Mongoose/KXR 50)

#### REMOVAL

- °C Do not allow foreign matters to enter the crankcase. Before removing the oil pump, clean the oil pump and crankcase surfaces.

Disconnect the oil outlet tube from the oil pump.

Disconnect the oil pump control cable from the pump body.

Disconnect the oil inlet tube.

- °C Before disconnecting the oil line, clip the oil line to avoid oil flowing out and then plug the oil line after it is disconnected.

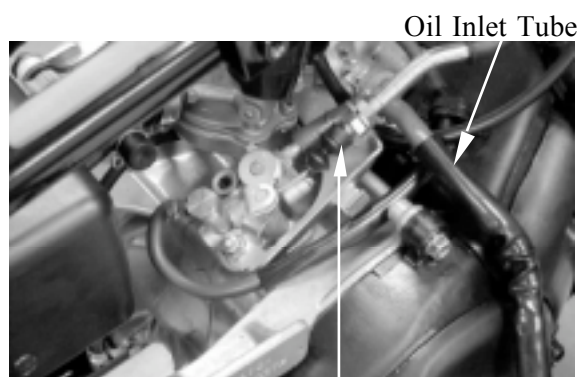
Remove the oil pump control cable plate bolts.  
Remove the oil pump from the crankcase.

#### OIL PUMP INSPECTION

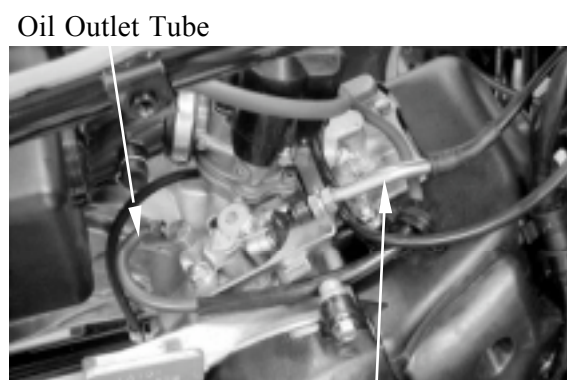
Remove the oil pump and inspect the following items:

- Weakened O-ring
- Damage to crankcase mating surface
- Damage to pump body
- Control lever operation
- Oil leaks through oil seals
- Worn or damaged pump pinion

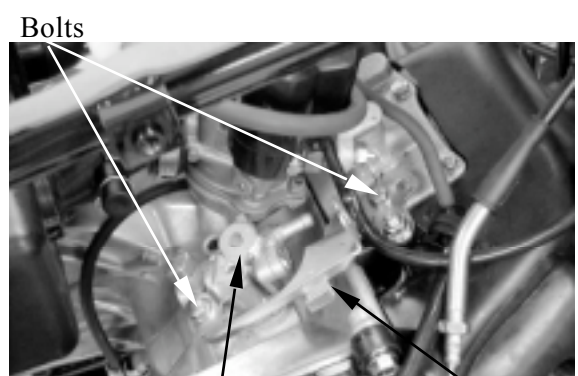
- °C Do not disassemble the oil pump which cannot be used after disassembly.



Oil Pump Control Cable

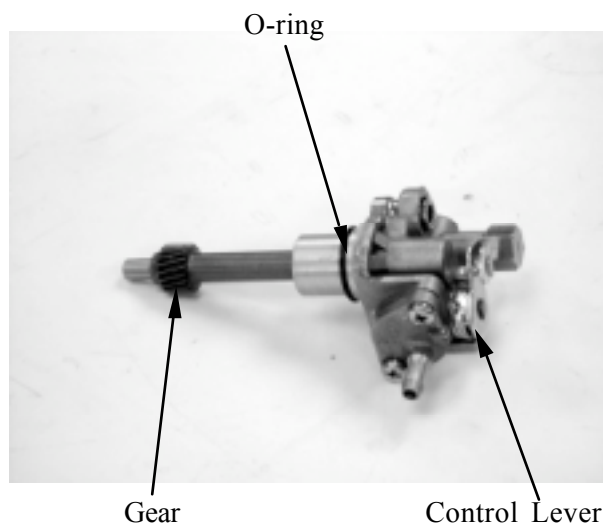


Oil Pump Control Cable



Oil Pump

Oil Pump Control Cable Plate



Gear

Control Lever

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### OIL PUMP INSTALLATION



- Lubricate the O-ring with grease or engine oil before installation.
- Make sure that the oil pump is inserted into the crankcase.
- Apply molybdenum disulfide or grease to the pump pinion.

Install the oil pump into the crankcase.

Install the oil pump control cable plate.

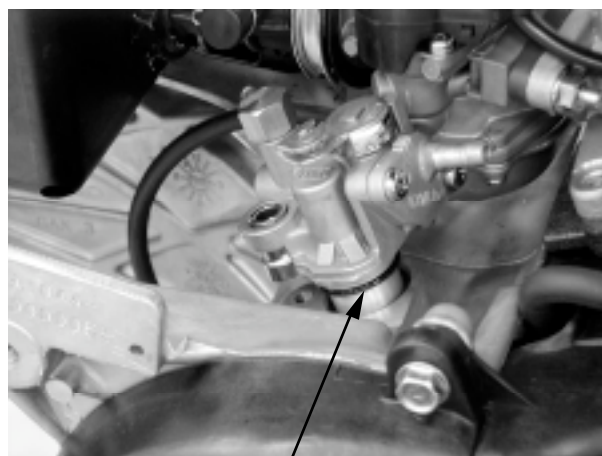
Connect the oil inlet line and oil outlet tube properly.

Connect the oil pump control cable.

Bleed air from the oil pump. (See page 4-9)



- Connect the oil tube properly.
- Bleed air from the oil pump after installation.
- The oil tube clip (at the oil tank side) must be locked from inside of the oil tube joint.



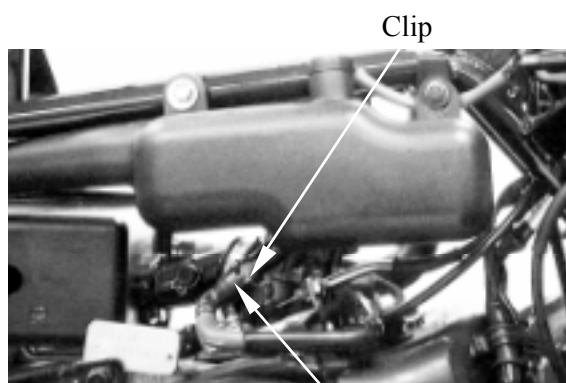
Grease or Engine Oil

### OIL FILTER CLEANING (Mongoose/KXR 50)

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.



Oil Filter

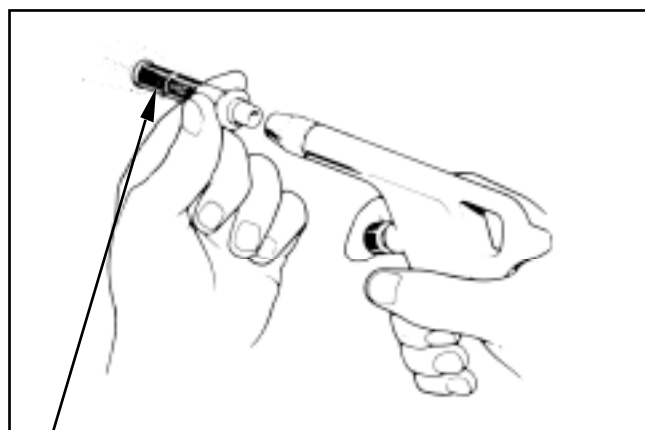
Clean the oil filter screen with compressed air.

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.



Filter Screen