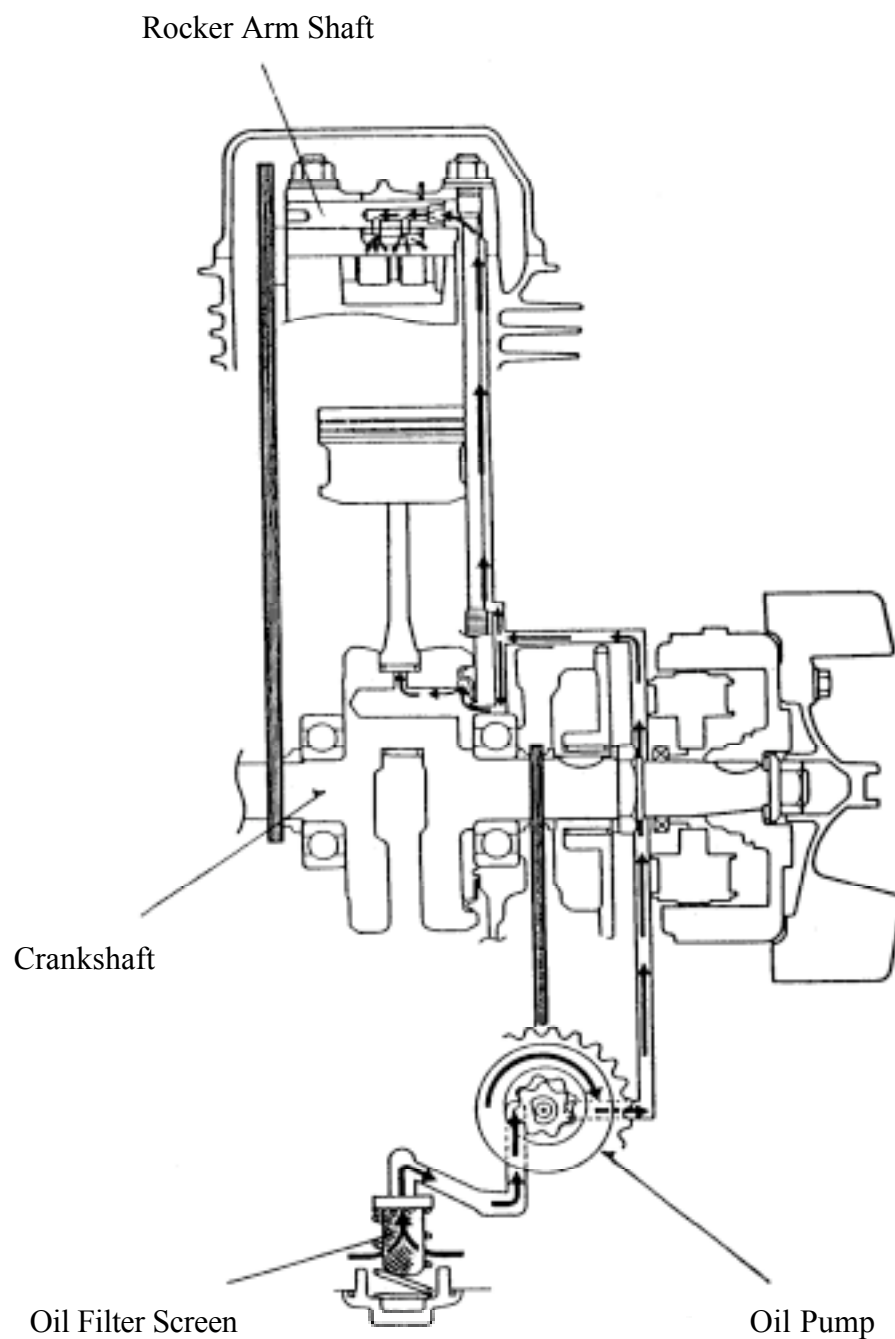


## 4. LUBRICATION SYSTEM

---

### LUBRICATION SYSTEM



## 4. LUBRICATION SYSTEM

---

SERVICE INFORMATION.....	4-1	ENGINE OIL/OIL FILTER .....	4-2
TROUBLESHOOTING .....	4-1	OIL PUMP .....	4-3

### SERVICE INFORMATION

#### 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	□	0.12
	Outer rotor-to-pump body clearance	□	0.12
	Rotor end-to-pump body clearance	0.05_ 0.10	0.2

### 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

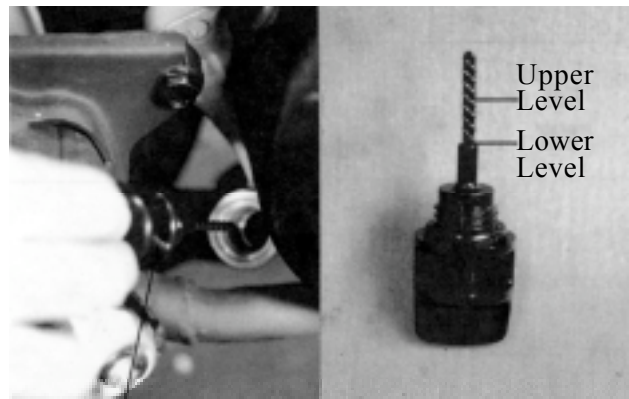
## 4. LUBRICATION SYSTEM

### ENGINE OIL/OIL FILTER

#### OIL LEVEL

- \*
  - Place the motorcycle upright on level ground for engine oil level check.
  - Run the engine for 2\_ 3 minutes and check the oil level after the engine is stopped for 2\_ 3 minutes.

Remove the oil dipstick and check the oil level with the oil dipstick.  
If the level is near the lower level, fill to the upper level with the specified engine oil.



Oil Dipstick

#### OIL CHANGE

- \*
  - The engine oil will drain more easily while the engine is warm.

Remove the oil filter screen cap located on the bottom of the engine to drain the engine oil thoroughly.

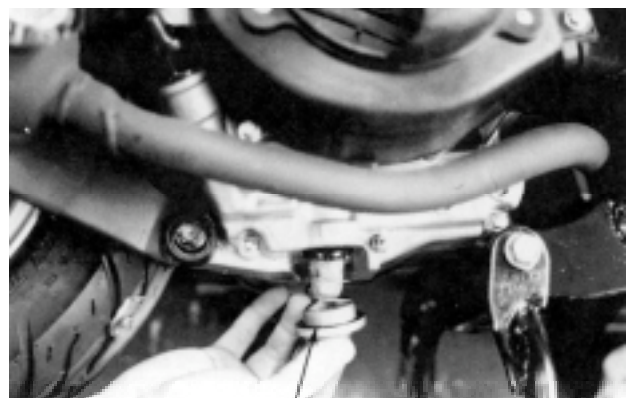


Oil Filter Screen Cap

After the oil has been completely drained, check the filter screen O-ring for damage and replace if necessary.

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

**Torque:** 1.5kg-m



O-ring

Fill with the specified SAE15W40#, API: SG/CD engine oil to the proper level.

Oil Capacity: At disassembly : 0.90 liter

At change : 0.75 liter

Check for oil leaks and then start the engine and let it idle for few minutes.

Recheck the oil level.

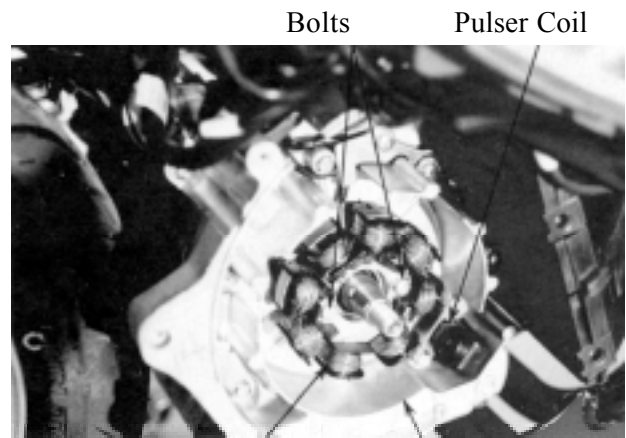
## 4. LUBRICATION SYSTEM

---

### OIL PUMP

#### REMOVAL

Remove the A.C. generator fly wheel. (⇒ 14-6)  
Remove the nine right crankcase cover bolts and the right crankcase cover.



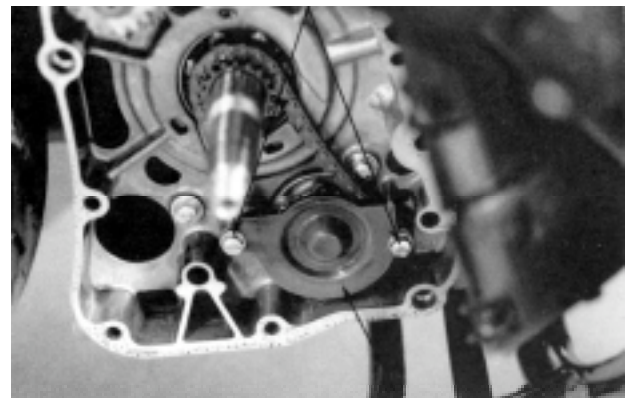
Stator      Right Crankcase

Remove the gasket and dowel pins.  
Remove the starter idle gear and starter clutch. (⇒ 16-6)



Gasket

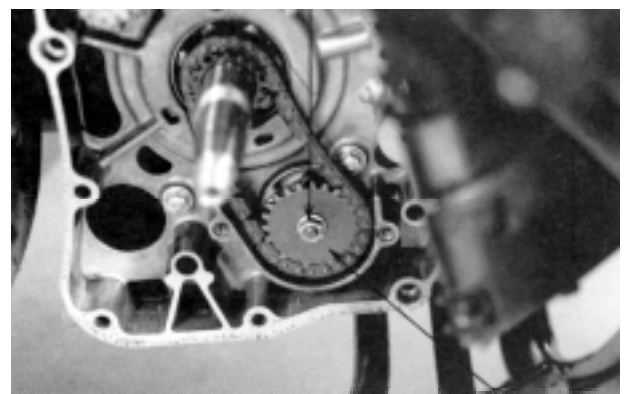
Remove the two bolts and oil separator cover.



Bolts

Oil Separator Cover

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



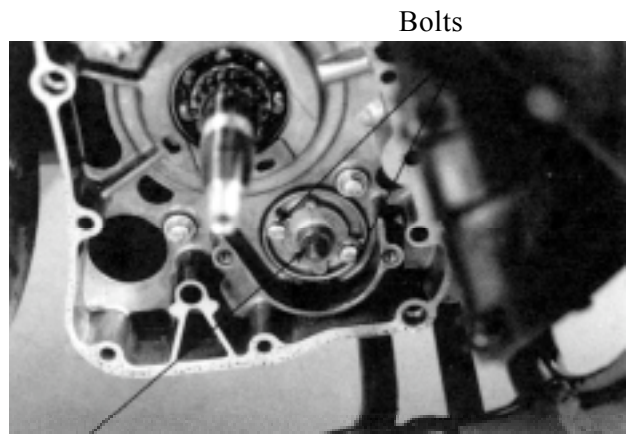
Nut

Oil Pump Driven Gear

## 4. LUBRICATION SYSTEM

---

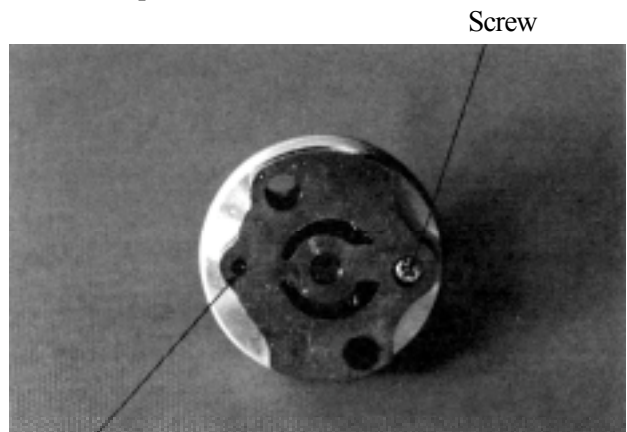
Remove the two oil pump mounting bolts and the oil pump.



Oil Pump

### DISASSEMBLY

Remove the screw and disassemble the oil pump.

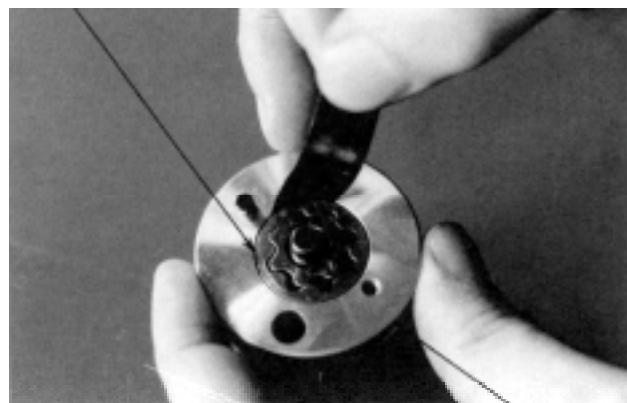


Pump Body  
Outer Rotor

### INSPECTION

Measure the pump body-to-outer rotor clearance.

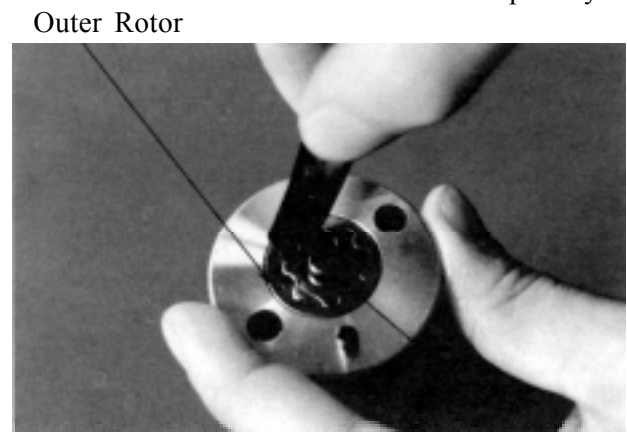
**Service Limit:** 0.12mm



Pump Body

Measure the inner rotor-to-outer rotor clearance.

**Service Limit:** 0.12mm



Outer Rotor

Inner Rotor

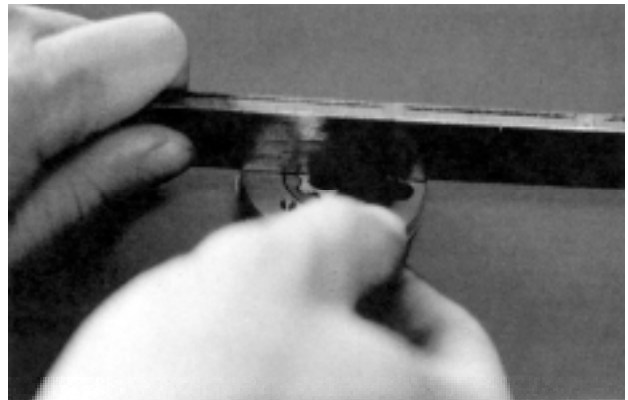


## 4. LUBRICATION SYSTEM

---

Measure the rotor end-to-pump body clearance.

**Service Limit:** 0.2mm



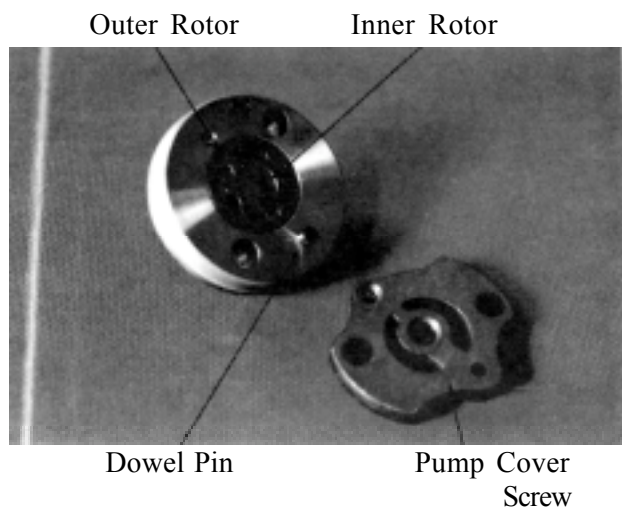
### ASSEMBLY

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

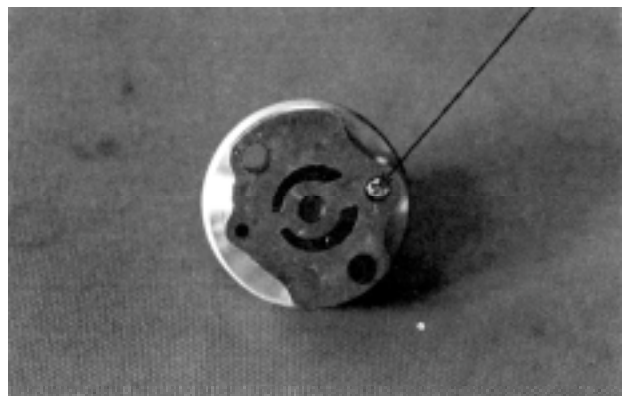
- \* Insert the pump shaft by aligning the flat on the shaft with the flat in the inner rotor.

Install the dowel pin.

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



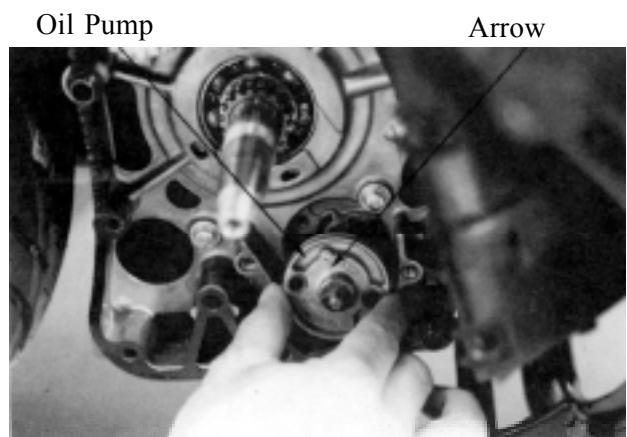
Tighten the screw to secure the pump cover. Make sure that the pump shaft rotates freely without binding.



### INSTALLATION

Install the oil pump into the crankcase.

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

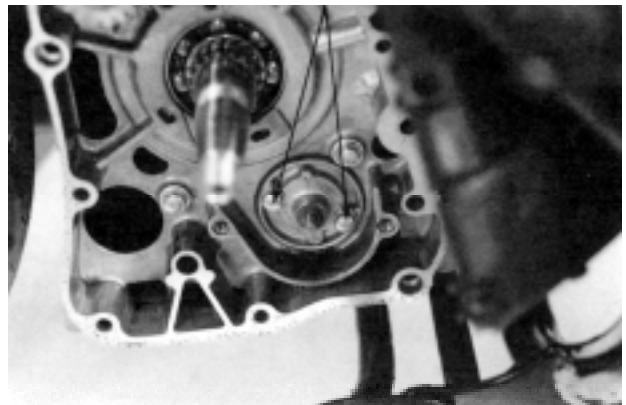


## 4. LUBRICATION SYSTEM

---

After the oil pump is installed, tighten the two mounting bolts.

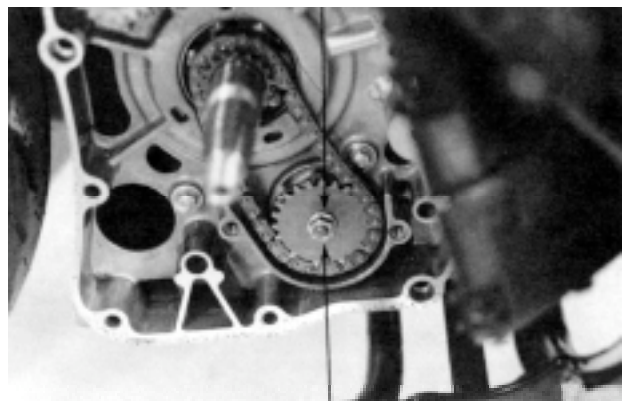
Bolts



Install the pump driven gear and drive chain by aligning the pump driven gear with the cutout in the pump shaft.  
Install and tighten the pump driven gear nut.

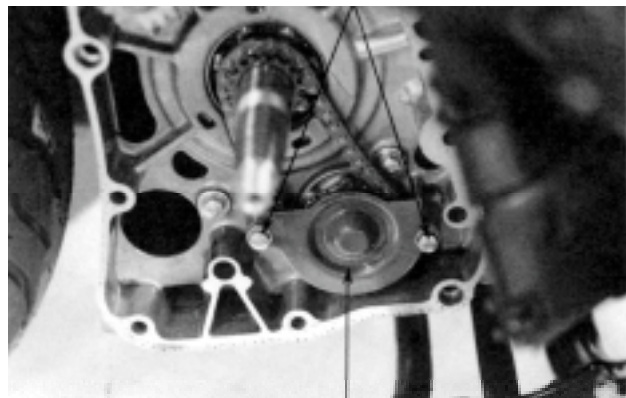
**Torque:** 1.0kg-m

Nut



Pump Driven Gear  
Bolts

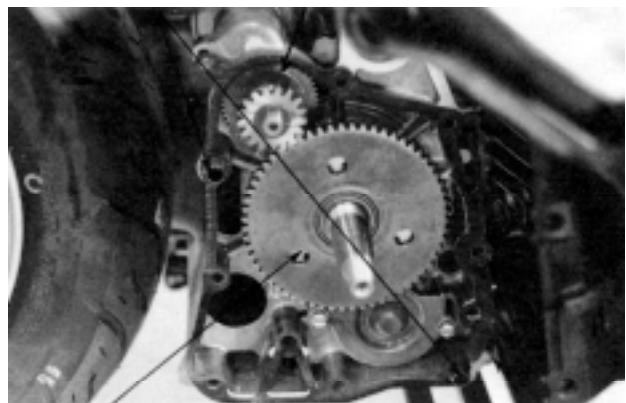
Install the oil separator cover and tighten the bolts.



Oil Separator Cover

Install the starter idle gear and starter clutch.  
(⇒ 16-8)  
Install the gasket and dowel pins.

Dowel Pin Starter Idle Gear



Starter Clutch

Gasket

## 4. LUBRICATION SYSTEM

---

Install the right crankcase cover and tighten the nine bolts.

**Torque:** 0.9kg-m

- \* Diagonally tighten the bolts in 2\_ 3 times.

