

## 4. LUBRICATION SYSTEM

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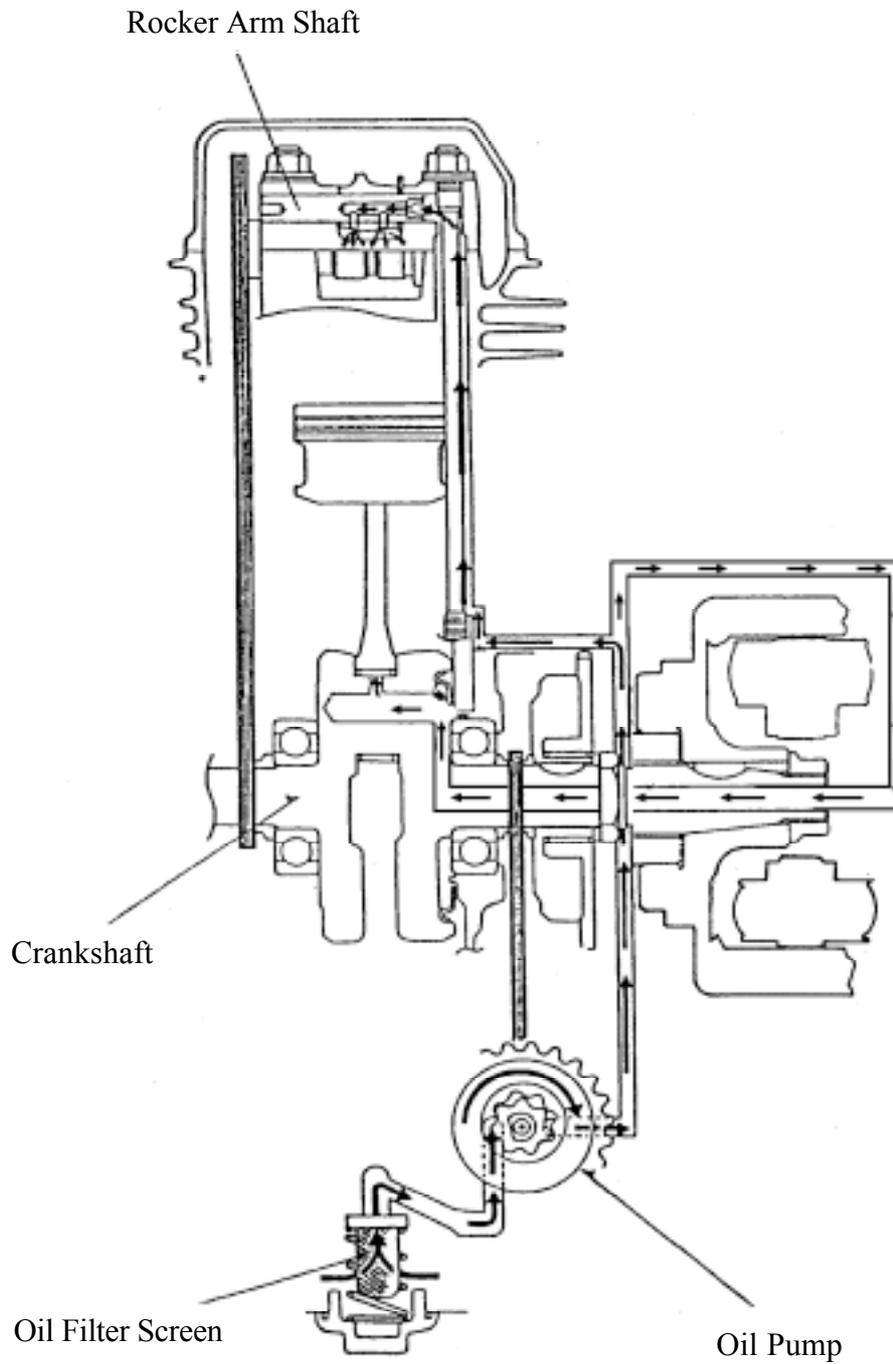
### LUBRICATION SYSTEM

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### 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	0.15	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

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### ENGINE OIL/OIL FILTER

#### 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.

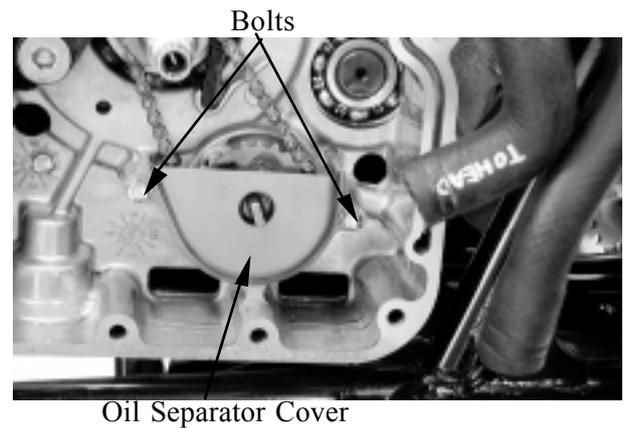
### OIL PUMP

#### REMOVAL

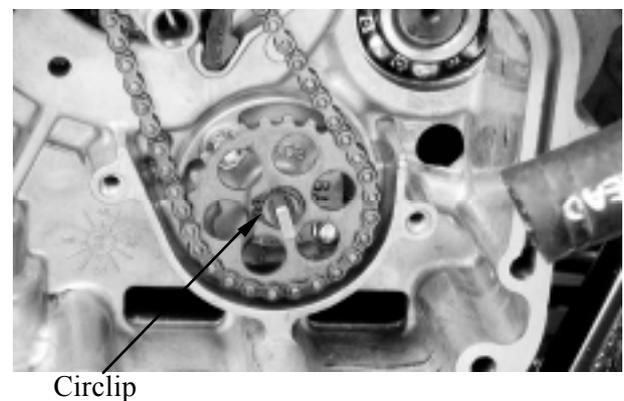
Remove the right crankcase cover and the A.C. generator flywheel. (Refer to the “A.C. GENERATOR/FLYWHEEL” section in the chapter 16)

Remove the starter clutch gear. (Refer to the “STARTER CLUTCH” section in the chapter 18)

Remove the two bolts and oil separator cover.

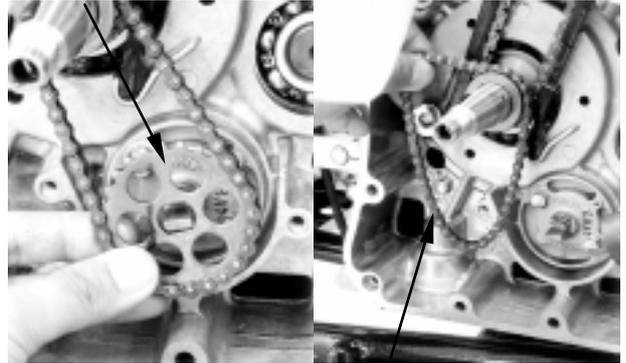


Pry the circlip off and remove the oil pump driven gear, then remove the oil pump drive chain and oil driven sprocket.



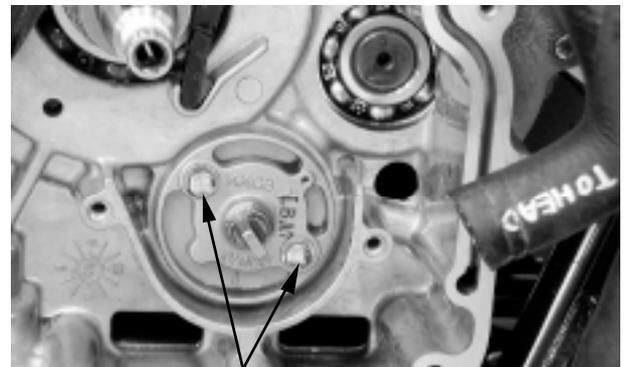
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Oil Pump Driven Sprocket



Oil Pump Drive Chain

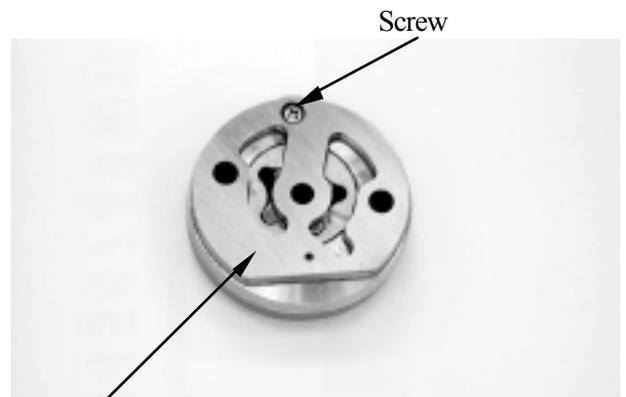
Remove the two oil pump bolts for remove the oil pump.



Oil Pump Bolts

### OIL PUMP DISASSEMBLY

Remove the screw and disassemble the oil pump.



Pump Body

### INSPECTION

Measure the rotor end-to-pump body clearance.

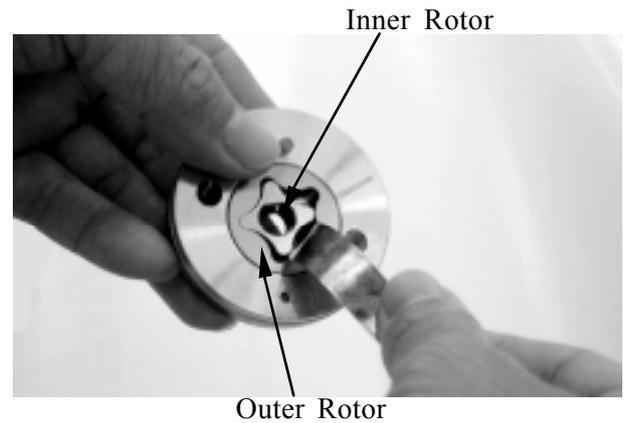
**Service Limit:** 0.12mm



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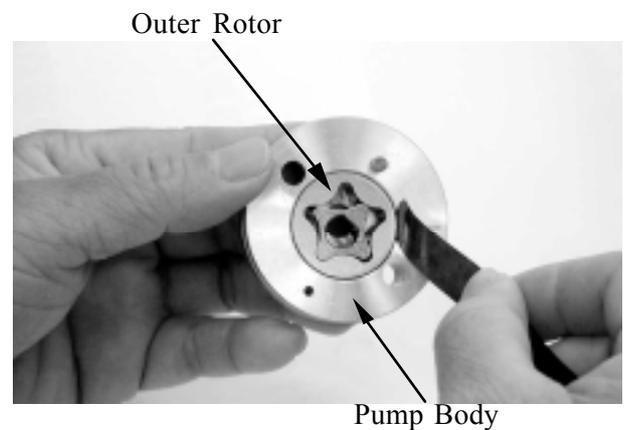
Measure the inner rotor-to-outer rotor clearance.

**Service Limit:** 0.2mm



Measure the pump body-to-outer rotor clearance.

**Service Limit:** 0.25mm



### ASSEMBLY

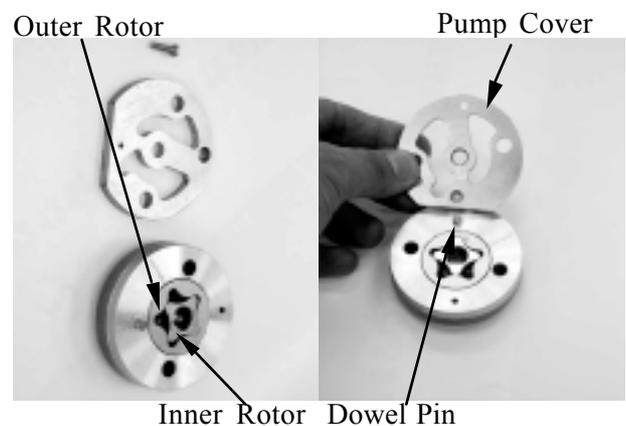
Install the outer rotor, inner rotor and pump shaft into the pump body.

- 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.

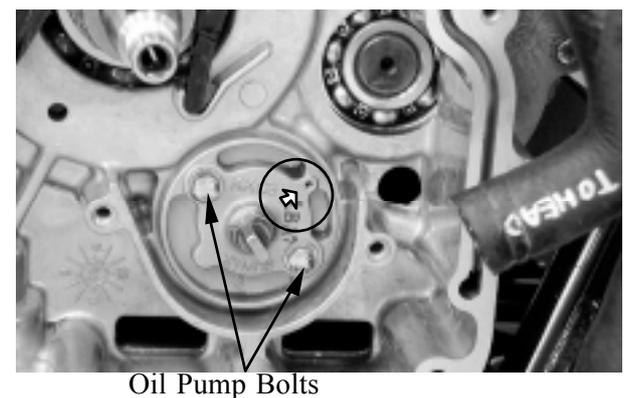
Tighten the screw to secure the pump cover.



### INSTALLATION

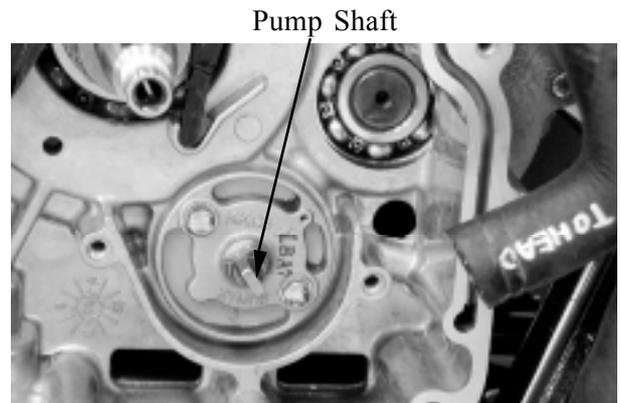
Reverse the "OIL PUMP REMOVAL" procedures.

- 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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Make sure that the pump shaft rotates freely without binding.



Install oil pump driven sprocket and drive chain, circlip and oil separator cover.

