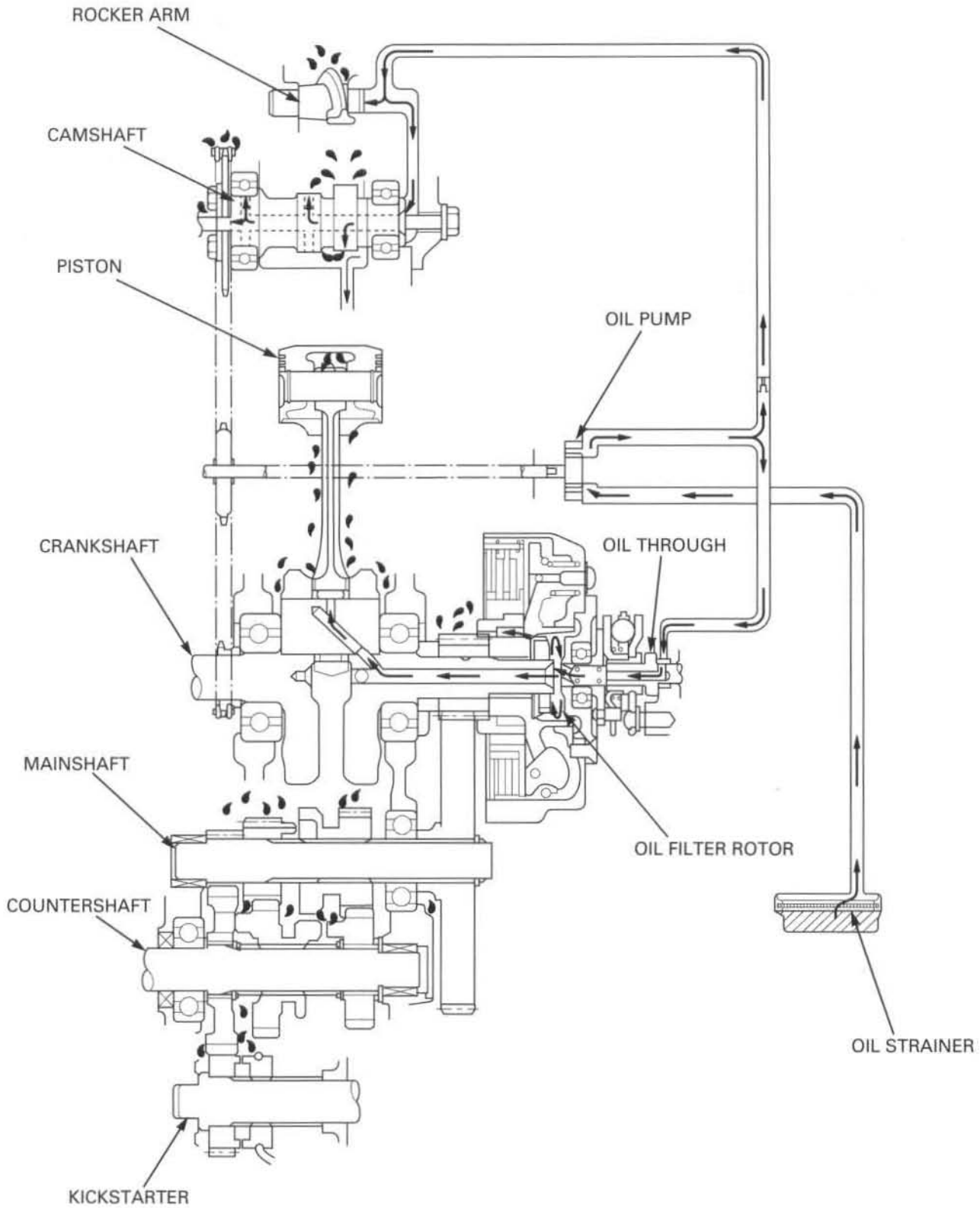


4. LUBRICATION SYSTEM

LUBRICATION SYSTEM DIAGRAM	4-2	TROUBLESHOOTING.....	4-3
SERVICE INFORMATION	4-3	OIL PUMP.....	4-4

LUBRICATION SYSTEM

LUBRICATION SYSTEM DIAGRAM



SERVICE INFORMATION

GENERAL

⚠ CAUTION

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.

- The oil pump service requires engine removal.
- The service procedures in this section must be performed with the engine oil drained.
- When removing and installing the oil pump, use care not to allow dust or dirt to enter the engine.
- If any portion of the oil pump is worn beyond the specified service limits, replace the oil pump as an assembly.
- After the oil pump has been installed, check that there are no oil leaks and that oil pressure is correct.

SPECIFICATIONS

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	At draining	0.6 liter (0.6 US qt, 0.5 Imp qt)	–
	At disassembly	0.8 liter (0.8 US qt, 0.7 Imp qt)	–
Recommended engine oil		Pro Honda GN4 4-stroke oil (U.S.A. and Canada) or equivalent motor oil API service classification: SG or higher JASO T 903 Standard: MA Viscosity: SAE 10W-30	–
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.02 – 0.07 (0.001 – 0.003)	0.12 (0.005)
	Side clearance	0.10 – 0.15 (0.004 – 0.006)	0.20 (0.008)

Unit: mm (in)

TORQUE VALUES

Oil pump mounting screw	7.4 N·m (0.75 kgf·m, 5.5 lbf·ft)
Oil pump cover screw	4.7 N·m (0.48 kgf·m, 3.5 lbf·ft)

TROUBLESHOOTING

Engine oil level too low, high oil consumption

- Normal oil consumption
- External oil leak
- Worn piston ring or incorrect piston ring installation
- Worn cylinder
- Worn valve guide or stem seal
- Oil pump worn or damaged

Oil contamination

- Oil not changed often enough
- Worn piston ring or incorrect piston ring installation
- Worn valve guide or stem seal
- Clogged oil strainer screen

OIL PUMP

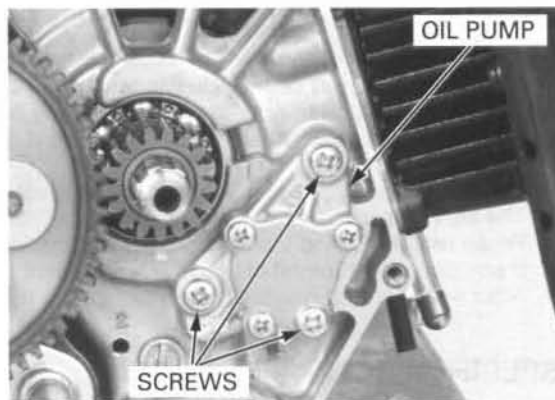
REMOVAL

Remove the clutch assembly (page 9-6).

When the oil pump is ready to be disassembled, loosen the pump cover screws.

Remove the three screws and oil pump assembly.

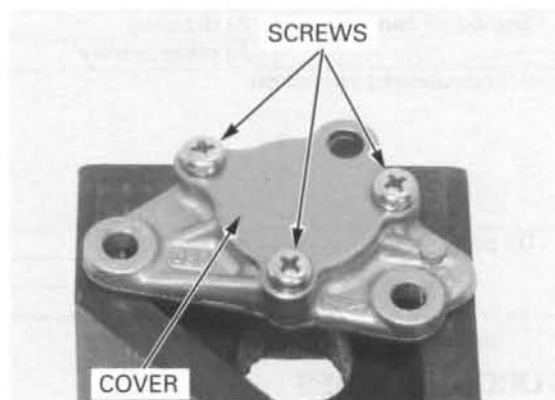
Remove the rotor shaft collar from the crankcase.



DISASSEMBLY

Remove the three screws and oil pump cover.

Remove the oil pump shaft, then remove the inner and outer rotors from the oil pump body.



INSPECTION

If any portion of the oil pump is worn beyond the specified service limit, replace the oil pump as an assembly.

Temporarily install the outer and inner rotors into the oil pump body.

Install the oil pump shaft.

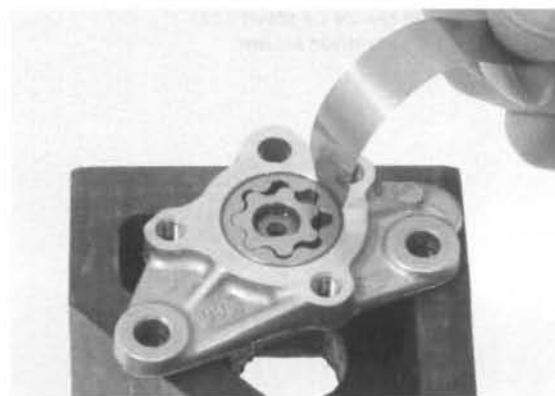
Measure the tip clearance between the inner and outer rotors.

SERVICE LIMIT: 0.20 mm (0.008 in)



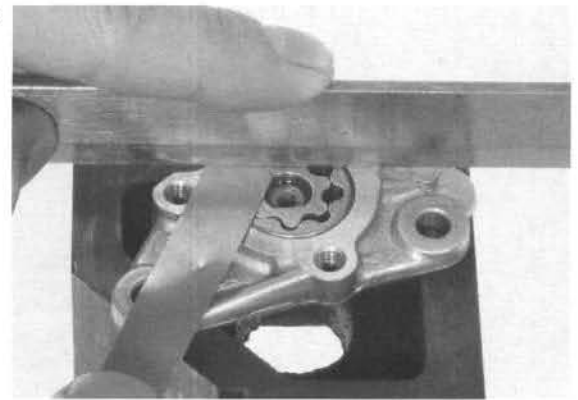
Measure the pump body clearance between the outer rotor and pump body.

SERVICE LIMIT: 0.12 mm (0.005 in)

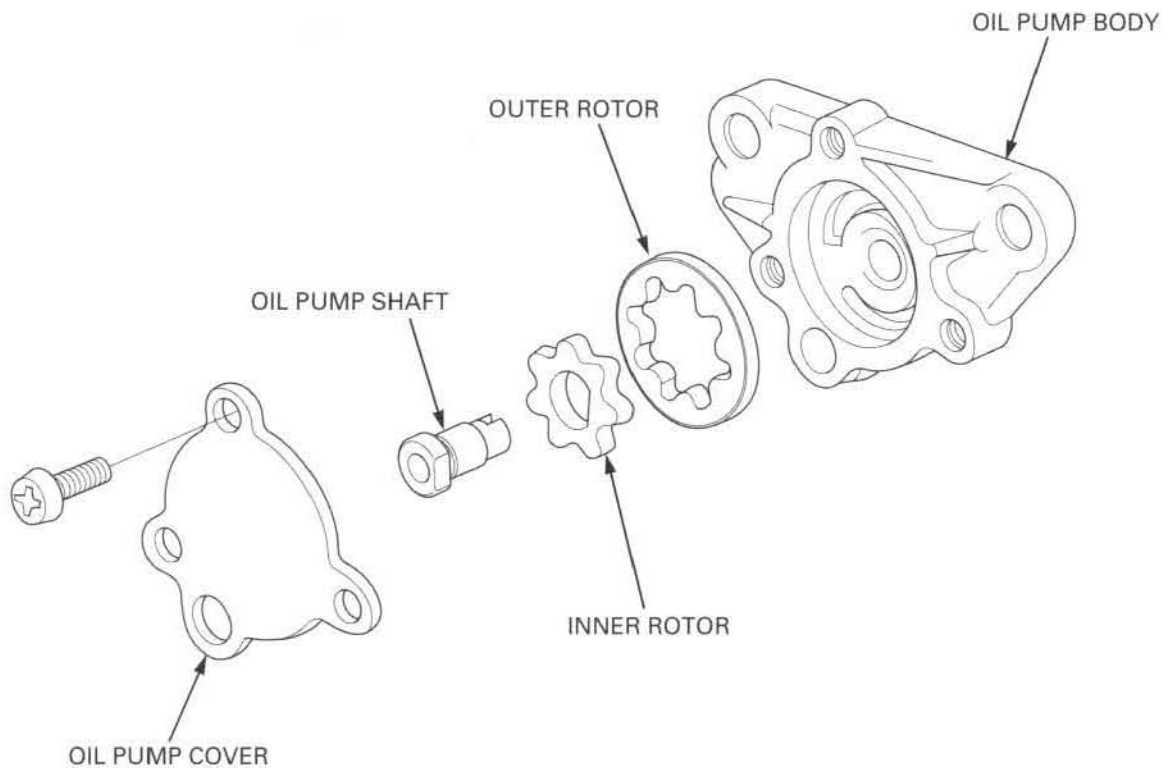


Measure the side clearance using a straight edge and feeler gauge.

SERVICE LIMIT: 0.20 mm (0.008 in)



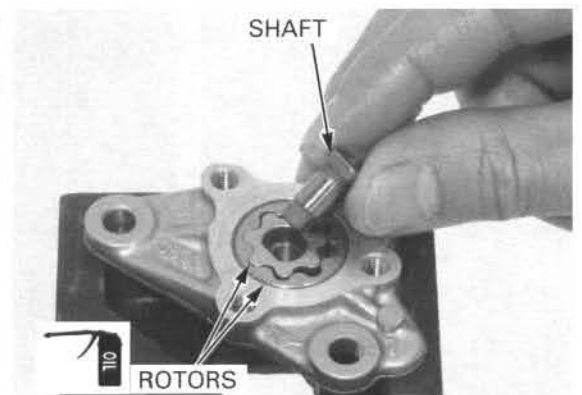
ASSEMBLY



Install the inner and outer rotors into the oil pump body.

Install the oil pump shaft aligning the flat surfaces of the shaft and inner rotor.

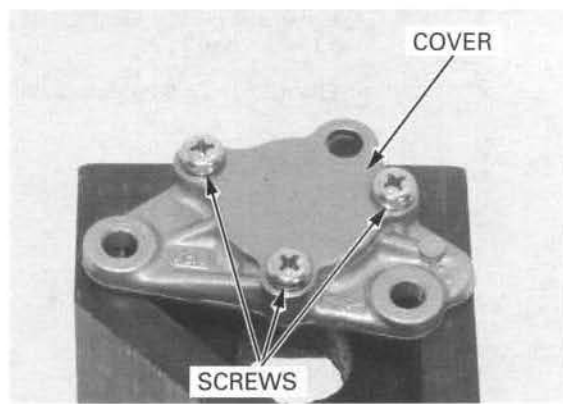
Fill the oil pump with 0.5–1 cm³ of engine oil.



LUBRICATION SYSTEM

Install the oil pump cover and tighten the screws to the specified torque.

TORQUE: 4.7 N·m (0.48 kgf·m, 3.5 lbf·ft)

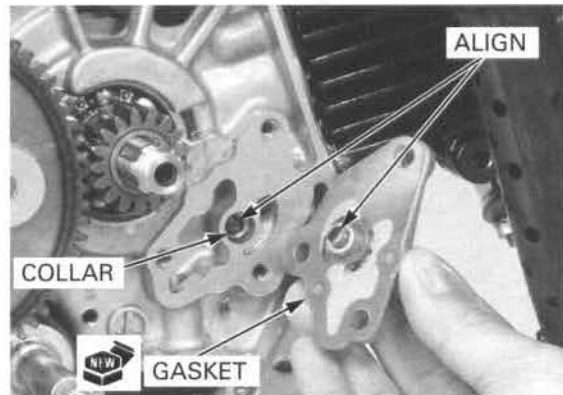


INSTALLATION

Install the rotor shaft collar into the crankcase.

Install a new gasket onto the oil pump body.

Install the oil pump into the crankcase while aligning the pump shaft groove with the cam chain guide spindle lug.



Install and tighten the three screws to the specified torque.

TORQUE: 7.4 N·m (0.75 kgf·m, 5.5 lbf·ft)

Install the clutch assembly (page 9-14).

