

# 7. LUBRICATION SYSTEM

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LUBRICATION SYSTEM DIAGRAM .....7-2

TROUBLESHOOTING .....7-3

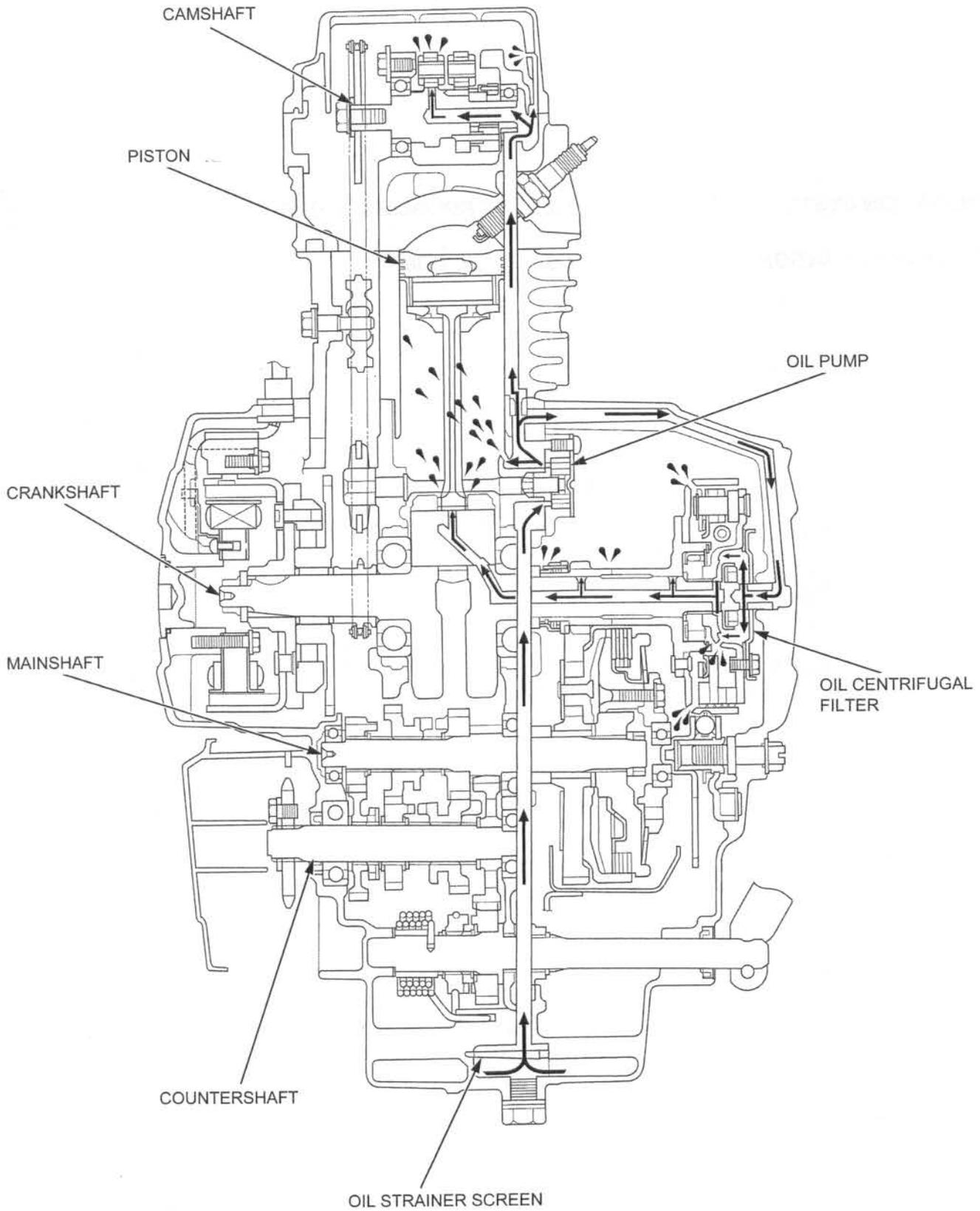
7

SERVICE INFORMATION .....7-3

OIL PUMP .....7-4

# 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.

- This section covers service of the oil pump.
- The oil pump can be serviced with the engine installed in the frame.
- 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.

### SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	At draining	1.0 liter (1.1 US qt, 0.9 Imp qt)	–
	At disassembly	1.15 liter (1.22 US qt, 1.01 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	0.10 – 0.15 (0.004 – 0.006)	0.15 (0.006)
	Body clearance	0.15 – 0.21 (0.006 – 0.008)	0.26 (0.010)
	Side clearance	0.03 – 0.09 (0.001 – 0.004)	0.15 (0.006)

### TORQUE VALUE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Oil pump cover screw	3	5	5 (0.5, 3.7)	

## TROUBLESHOOTING

#### Engine oil level too low

- Oil consumption
- External oil leak
- Worn piston rings (page 9-6)
- Improperly installed piston rings (page 9-4)
- Worn valve guide or stem seal (page 8-21)
- Worn cylinder (page 9-5)

#### Oil contamination

- Worn piston rings (page 9-6)
- Improperly installed piston rings (page 9-4)
- Worn valve guide or stem seal (page 8-21)
- Oil not changed frequently enough
- Clogged oil strainer screen (page 3-11)

OIL PUMP

REMOVAL/INSTALLATION

Drain the engine oil (page 3-10).

Remove the following:

- Right crankcase cover (page 10-5)
- Three bolts [1]
- Oil pump [2]

Remove the gasket [3] from the oil pump.

Install a new gasket to the oil pump.

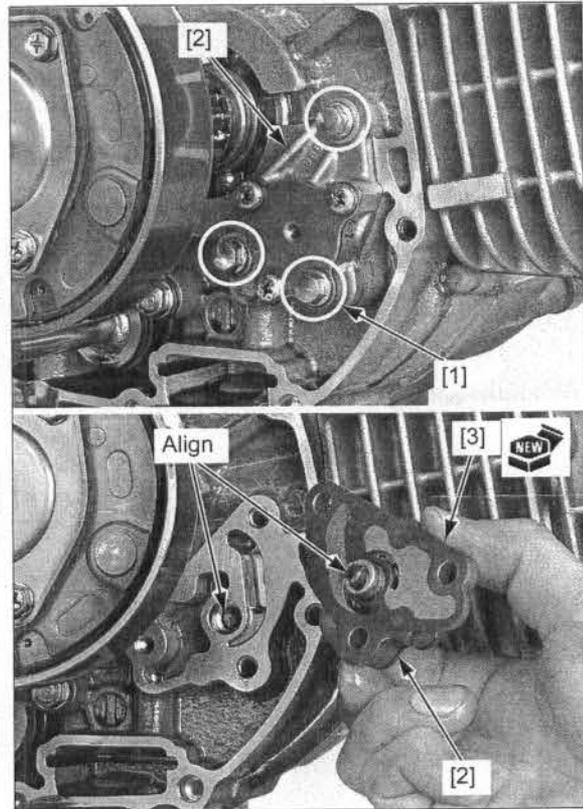
Install the oil pump to the crankcase aligning the oil pump shaft groove with the cam chain guide sprocket spindle.

Install and tighten the three bolts.

Clean the oil strainer screen (page 3-11).

Install the right crankcase cover (page 10-8).

After installation, fill the crankcase with recommended engine oil (page 3-10) and check that there are no oil leaks.



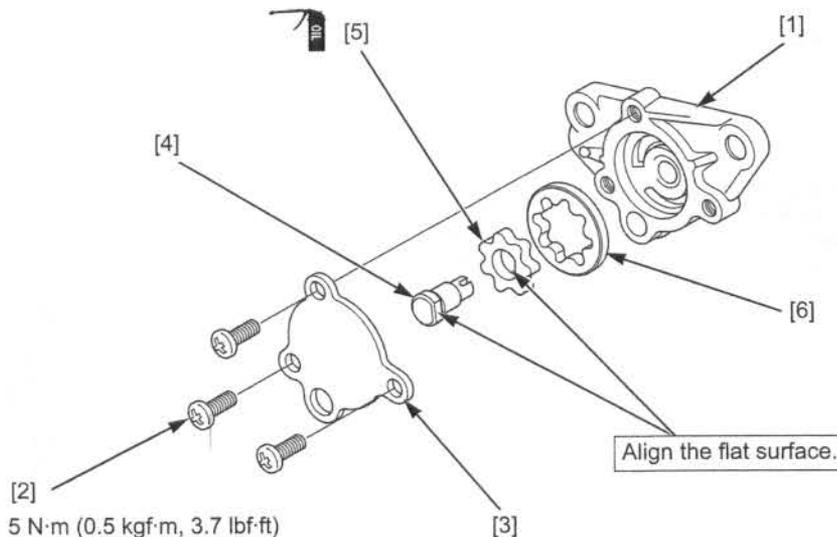
DISASSEMBLY/ASSEMBLY

Remove the following from the oil pump body [1]:

- Three screws [2]
- Oil pump cover [3]
- Oil pump shaft [4]
- Inner rotor [5]
- Outer rotor [6]

Assembly is in the reverse order of disassembly.

- Apply engine oil to the inner rotor and outer rotor sliding surface.



**INSPECTION**

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

Disassemble the oil pump (page 7-4).

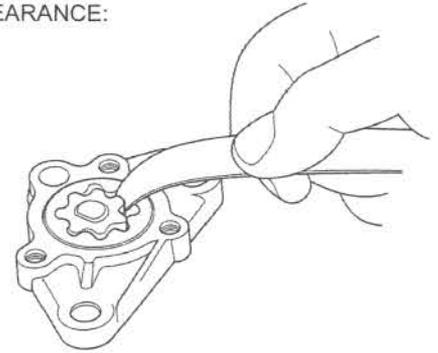
Temporarily install the outer and inner rotors into the oil pump body.

Install the oil pump shaft.

Measure the tip clearance between the inner and outer rotors.

**SERVICE LIMIT: 0.15 mm (0.006 in)**

TIP CLEARANCE:



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

**SERVICE LIMIT: 0.26 mm (0.010 in)**

BODY CLEARANCE:



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

**SERVICE LIMIT: 0.15 mm (0.006 in)**

Assemble the oil pump (page 7-4).

SIDE CLEARANCE:

