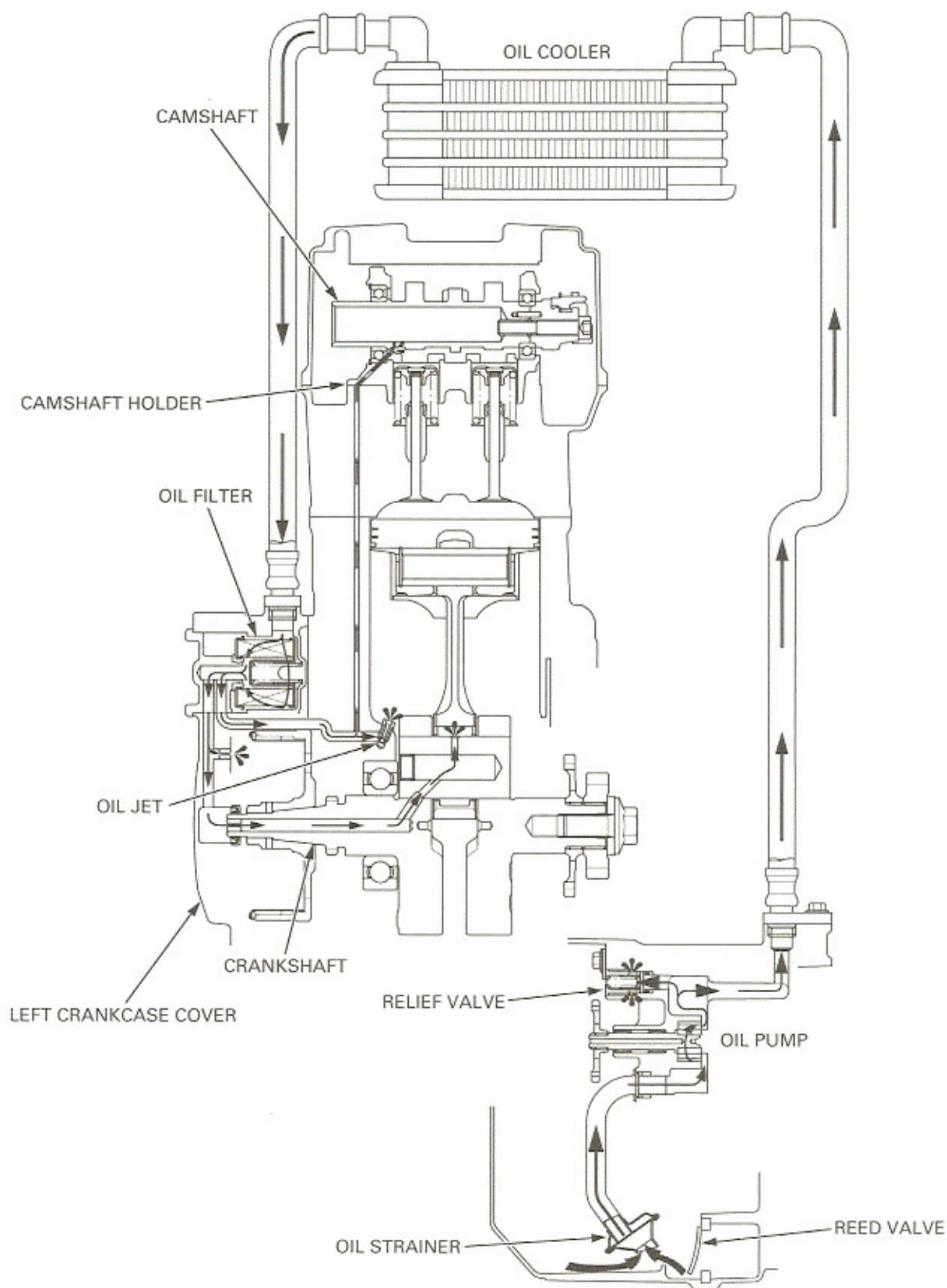


5. LUBRICATION SYSTEM

LUBRICATION SYSTEM DIAGRAM	5-2	OIL STRAINER/PRESSURE RELIEF VALVE ..	5-4
SERVICE INFORMATION	5-3	OIL PUMP.....	5-7
TROUBLESHOOTING	5-3	OIL COOLER.....	5-7

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 and oil cooler.
- The crankcase must be separated to service the oil pump (page 12-11).
- Refer to page 4-11 for engine oil level check, oil change and filter replacement
- Refer to page 4-15 for transmission oil level check and oil change.

SPECIFICATIONS

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	0.78 liter (0.82 US qt, 0.67 Imp qt)	—
	After filter change	0.82 liter (0.87 US qt, 0.72 Imp qt)	—
	After disassembly	1.20 liter (1.27 US qt, 1.06 Imp qt)	—
Recommended engine oil		Pro Honda GN4, HP4 (without molybdenum additives) 4-stroke oil or HP4M (with molybdenum additives) 4-stroke oil, or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA or MB Viscosity: SAE 10W-40, 5W-30	—
Transmission oil capacity	After draining	0.55 liter (0.58 US qt, 0.48 Imp qt)	—
	After disassembly	0.65 liter (0.69 US qt, 0.57 Imp qt)	—
Recommended transmission oil		Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil or equivalent motor oil API service classification: SG or Higher JASO T 903 standard: MA Viscosity: SAE 10W-40	—
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.21 (0.006 – 0.008)	—
	Side clearance	0.05 – 0.13 (0.002 – 0.005)	—

Unit: mm (in)

TORQUE VALUES

Front brake 3-way joint mounting bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)
Front brake pipe clamp mounting bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)

ALOC bolt: replace with a new one.

TROUBLESHOOTING

Engine oil level too low

- Normal oil consumption
- External oil leak
- Worn piston rings or incorrect piston ring installation
- Worn cylinder
- Worn valve guides or stem seals

Engine oil contamination

- Oil or filter not changed often enough
- Worn piston rings or incorrect piston ring installation
- Worn valve guides or stem seals
- Clogged oil strainer screen

Engine oil emulsification

- Blown cylinder head gasket
- Leaky coolant passage
- Water entry

OIL STRAINER/PRESSURE RELIEF VALVE

REMOVAL

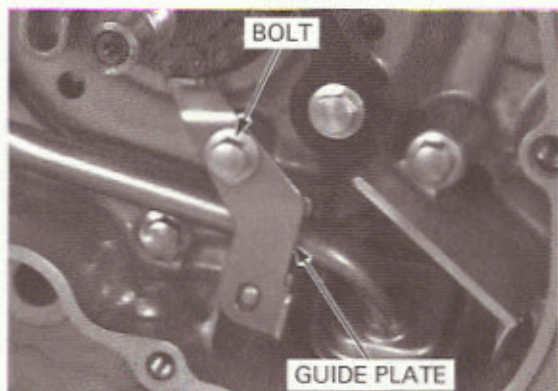
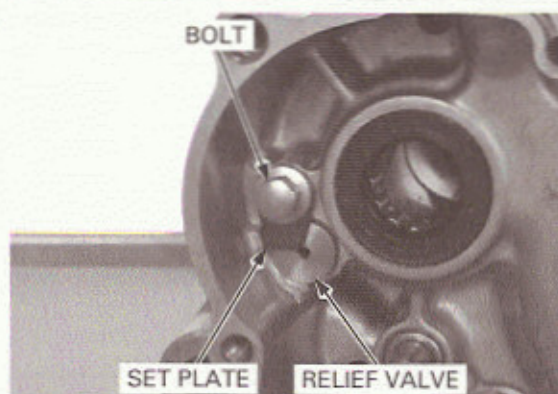
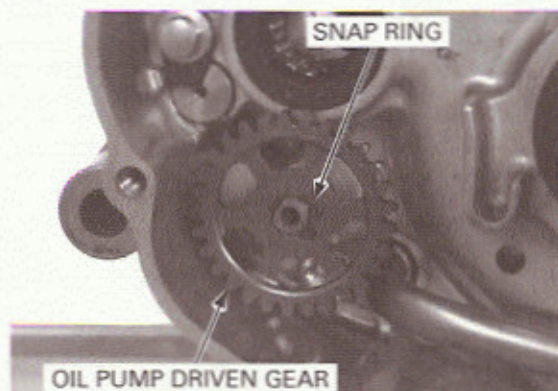
Remove the balancer shaft (page 12-7).

Remove the snap ring and oil pump driven gear from the oil pump shaft.

Remove the bolt, set plate and the engine oil pressure relief valve.

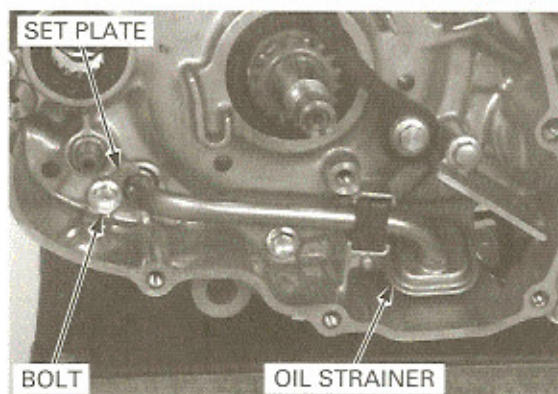
Check the operation of the pressure relief valve by pushing on the piston.

Remove the bolt and guide plate.



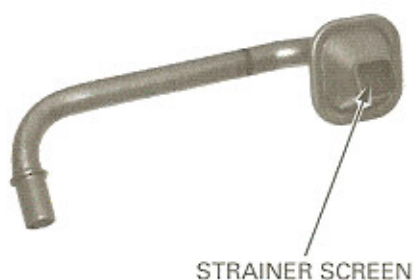
Remove the bolt, set plate and the oil strainer.

Remove the grommet and seal ring from the oil pipe of the strainer.



Clean the oil strainer screen.

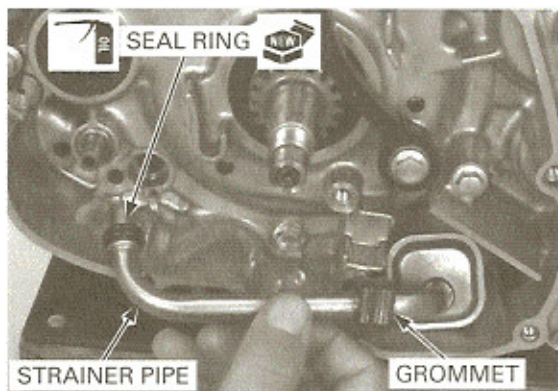
Check the oil strainer screen for damage.



INSTALLATION

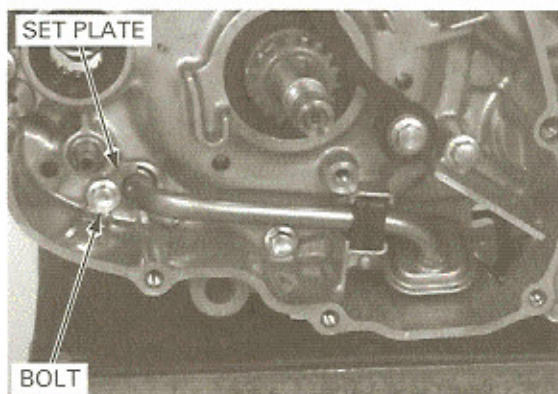
Install the grommet onto the oil strainer pipe.

Coat a new seal ring with oil and install it onto the oil pipe.



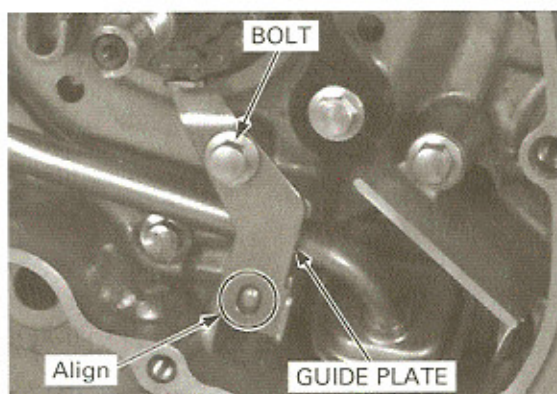
Install the oil strainer onto the left crankcase.

Install the set plate and tighten the bolt securely.

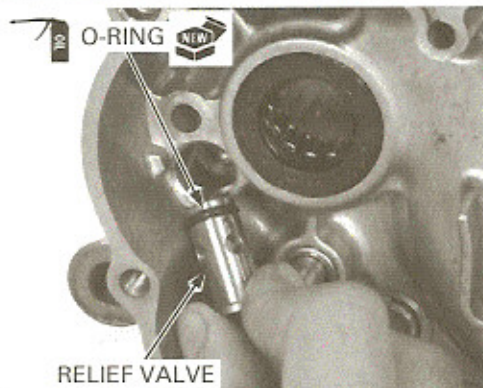


LUBRICATION SYSTEM

Install the guide plate by aligning the hole with the boss and tighten the bolt securely.



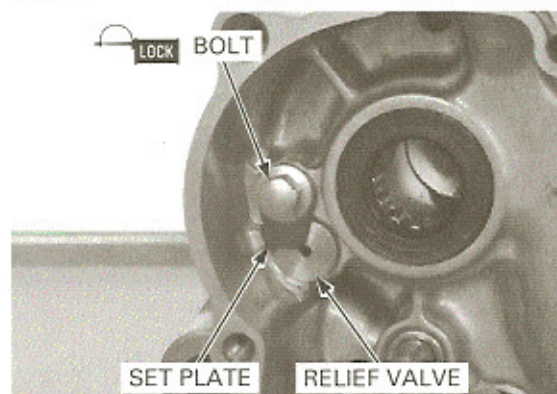
Coat a new O-ring with oil and install it into the pressure relief valve groove.



Install the pressure relief valve into the left crankcase.

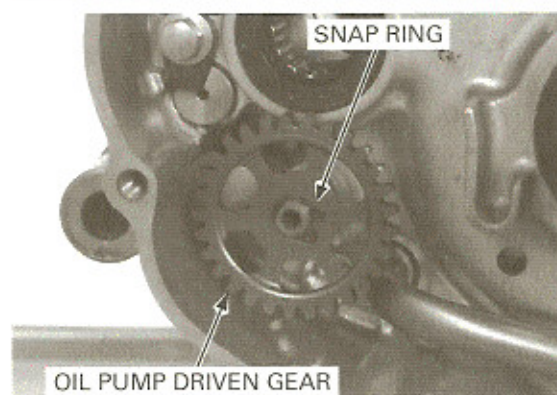
Apply locking agent to the bolt threads.

Install the set plate and tighten the bolt securely.



Install the oil pump driven gear and snap ring onto the oil pump shaft.

Install the balancer (page 12-8).



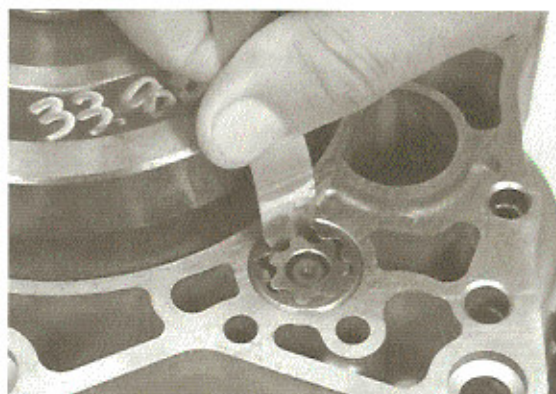
OIL PUMP

INSPECTION

Separate the crankcase (page 12-11).

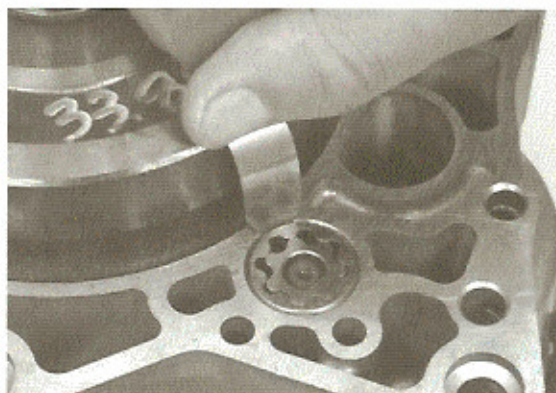
Measure the rotor tip clearance.

SERVICE LIMIT: 0.20 mm (0.008 in)



Measure the pump body clearance.

STANDARD: 0.15 – 0.21 mm (0.006 – 0.008 in)



Measure the oil pump side clearance.

STANDARD: 0.05 – 0.13 mm (0.002 – 0.005 in)

Assemble the crankcase (page 12-24).

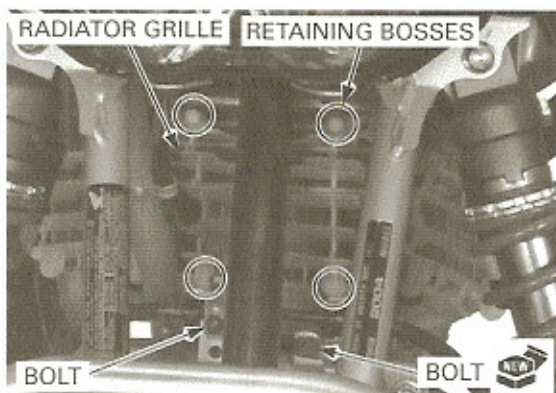


OIL COOLER

INSPECTION

Remove the front brake 3-way joint and hose clamp mounting bolts.

Remove the radiator grille by releasing the four retaining bosses from the grommets in the frame.



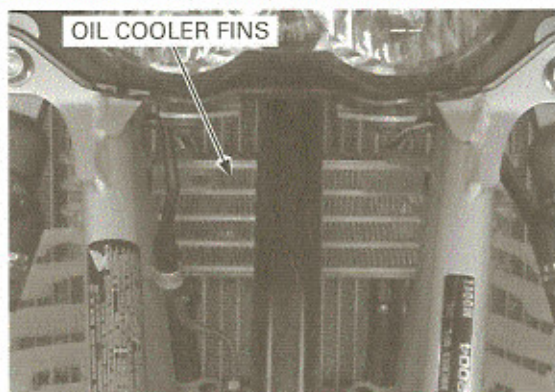
LUBRICATION SYSTEM

Check the oil cooler hose joints and seams for leaks. Check the oil cooler air passage for clogging or damage. Straighten bent fins using a small flat blade screwdriver and remove insects, mud or other obstructions with compressed air or low pressure water.

Replace the brake hose clamp bolt with a new one.

Install the removed parts in the reverse order of removal.

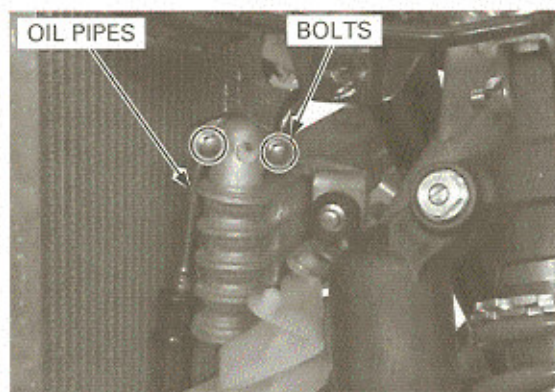
TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



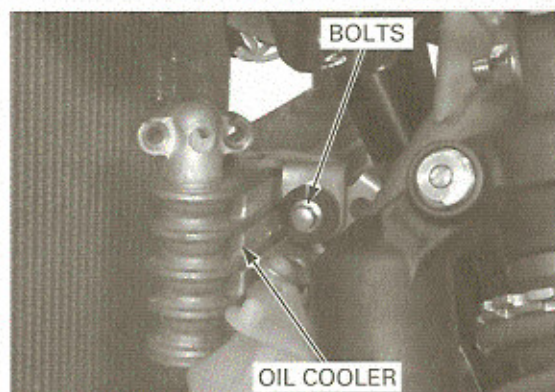
REMOVAL

Remove both front fenders (page 3-5).

Remove the four bolts, oil pipe joints and O-rings from the oil cooler.



Remove the two mounting bolts and the oil cooler from the frame by releasing the mounting boss from the grommet.



INSTALLATION

Install the oil cooler onto the frame by aligning the mounting boss with the grommet and tighten the mounting bolts securely.

Coat new O-rings with oil and install them onto the oil pipe joints.

Install the oil pipe joints onto the oil cooler and tighten the bolts securely.

Install the removed parts in the reverse order of removal.

Check the oil level and add the recommended oil if the level is low (page 4-11).

