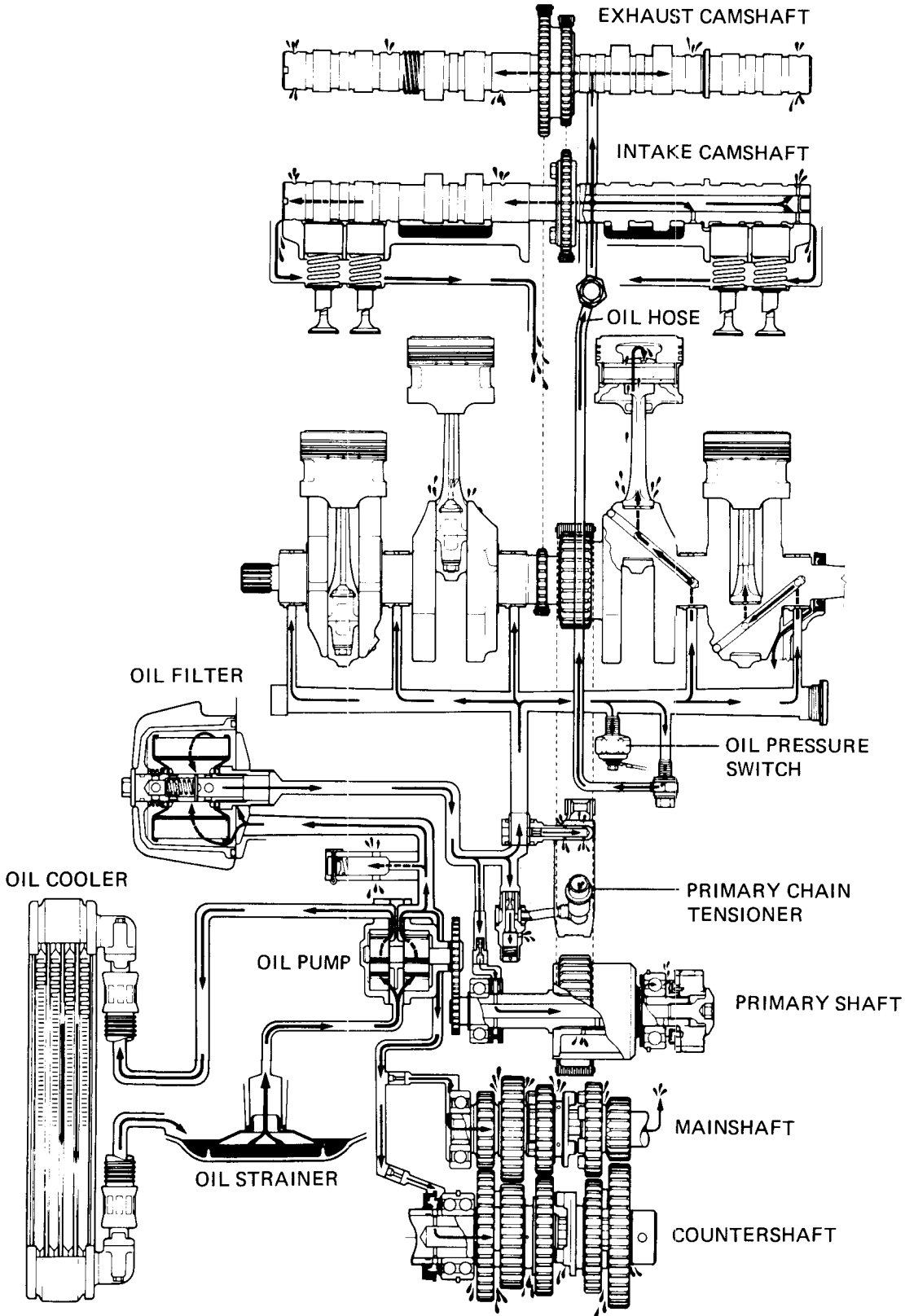




LUBRICATION

ENGINE LUBRICATION DIAGRAM





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SERVICE INFORMATION

GENERAL

Oil pressure relief valve: See Section 12 (Crankshaft/Primary Shaft).

SPECIFICATIONS

Engine oil

Oil capacity	3.5 lit (3.7 US qt, 3.0 Imp qt) at change 4.5 lit (4.8 US qt, 3.9 Imp qt) at disassembly	
Oil recommendation	Use Honda 4-Stroke Oil or equivalent. API Service Classification: SE or SF Viscosity: SAE 10W-40	<p>OIL VISCOSITIES</p> <p>Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.</p>
Oil pump delivery	Engine: 41 lit (43 US qt, 36 Imp qt)/min. at 7,000 rpm Cooler: 18 lit (19 US qt, 16 Imp qt)/min. at 7,000 rpm	
Oil pressure (at oil pressure switch)	5.5 kg/cm ² (78 psi) at 7,000 rpm (80°C/176°F)	

Oil pump service data

	Standard	Service limit
Rotor tip clearance (Engine/Cooler)	0.15 mm (0.006 in)	0.20 mm (0.008 in)
Pump body clearance (Engine/Cooler)	0.15–0.22 mm (0.006–0.009 in)	0.35 mm (0.014 in)
Pump end clearance (Engine/Cooler)	0.02–0.07 mm (0.001–0.003 in)	0.10 mm (0.004 in)



LUBRICATION

TORQUE VALUES

Engine oil drain plug	35–40 N·m (3.5–4.0 kg-m, 25–29 ft-lb)
Engine oil filter bolt	28–33 N·m (2.8–3.3 kg-m, 20–23 ft-lb)
Oil pressure switch	15–20 N·m (1.5–2.0 kg-m, 11–14 ft-lb) Apply Loctite®

TOOLS

Special

Oil Pressure Gauge	07506–3000000
Oil Pressure Gauge Attachment	07510–4220100

TROUBLESHOOTING

Oil level too low

1. External oil leaks.
2. Worn piston rings.
3. Worn valve guides or seals.

Oil contamination

1. Oil or filter not changed often enough.
2. Head gasket faulty.
3. Worn piston rings.

High oil pressure

1. Pressure relief valve stuck open.
2. Plugged oil filter, gallery, or metering orifice.
3. Incorrect oil being used.

No oil pressure

1. Oil level low.
2. Oil pump drive gear broken.
3. Oil pump faulty.
4. Internal oil leak.

Low oil pressure

1. Oil level low.
2. Pressure relief valve stuck open.
3. Plugged oil pick-up screen.
4. Oil pump worn.



ENGINE LUBRICATION

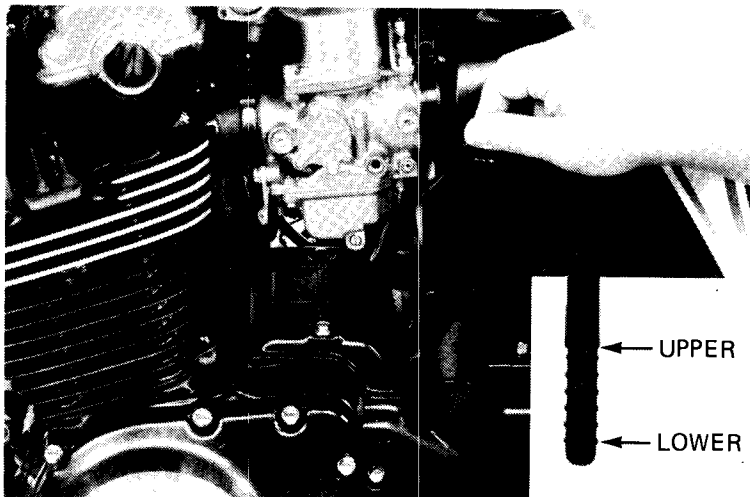
ENGINE OIL LEVEL

Run the engine and allow to idle for 2–3 minutes.

Stop the engine and support the motorcycle on the center stand. Check the oil level with the filler cap/dipstick after a few minutes. Do not screw in the cap when making this check.

If the level is below the lower level mark on the dipstick, fill to the upper level mark with the recommended oil (page 2-1).

Check the oil pressure warning light. This light should go off when the engine starts. If it does not, check the oil pump function and/or oil circuit.



DRAIN PLUG
35–40 N·m (3.5–4.0 kg-m,
25–29 ft-lb)

ENGINE OIL & FILTER CHANGE

NOTE:

Change engine oil with the engine warm and the motorcycle on its center stand to assure complete and rapid draining.

Warm the engine to normal operating temperature.

Stop the engine and place the motorcycle on its center stand.

Remove the oil filler cap, drain plug and oil filter bolt and drain the oil.

Make sure that the sealing washer on the drain plug and the O-rings on the oil filter bolt and oil filter cover are in good condition.

After completely draining, replace the oil filter and install the oil filter bolt and drain plug.

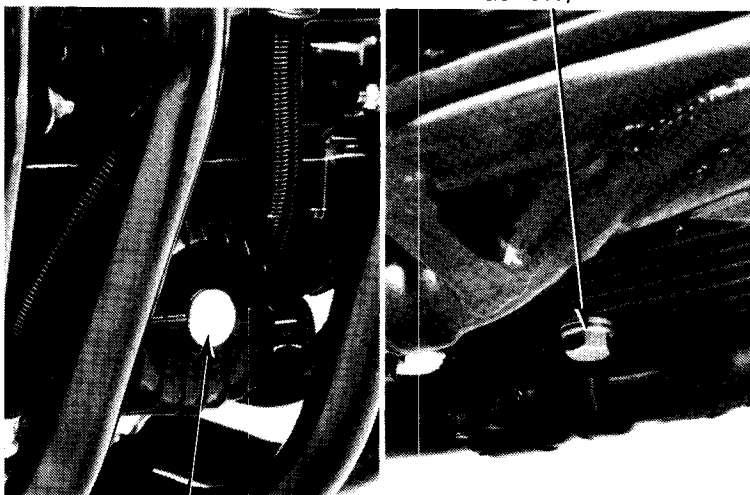
Fill the crankcase with 3.5 lit (3.7 US qt, 3.0 Imp qt) of the recommended oil (page 2-1).

Install the oil filler cap and start the engine and let it idle for 2–3 minutes.

Stop the engine and wait a few more minutes.

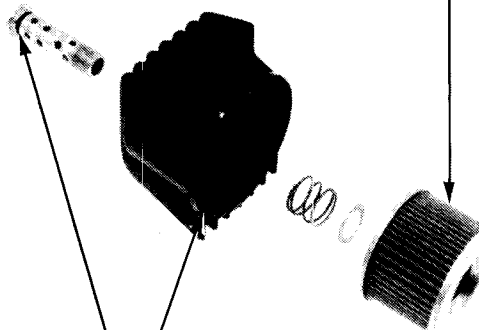
Then check the oil level and add oil if necessary.

Make sure that there are no oil leaks.



OIL FILTER BOLT
28–33 N·m (2.8–3.3 kg-m,
20–23 ft-lb)

OIL FILTER



O-RINGS



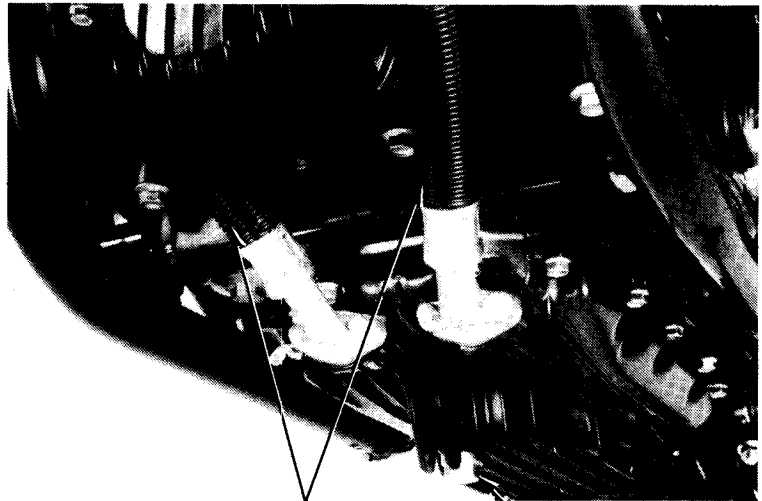
LUBRICATION

OIL STRAINER CLEANING

NOTE:

The oil strainer can be removed with the engine mounted in the frame.

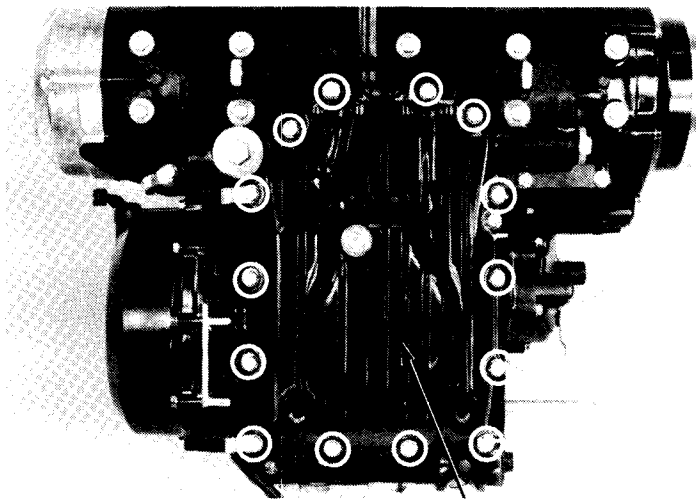
- Remove the oil filler cap, drain plug, oil filter bolt, and filter.
- Remove the exhaust pipes.
- Disconnect the oil cooler hoses.



OIL COOLER HOSE

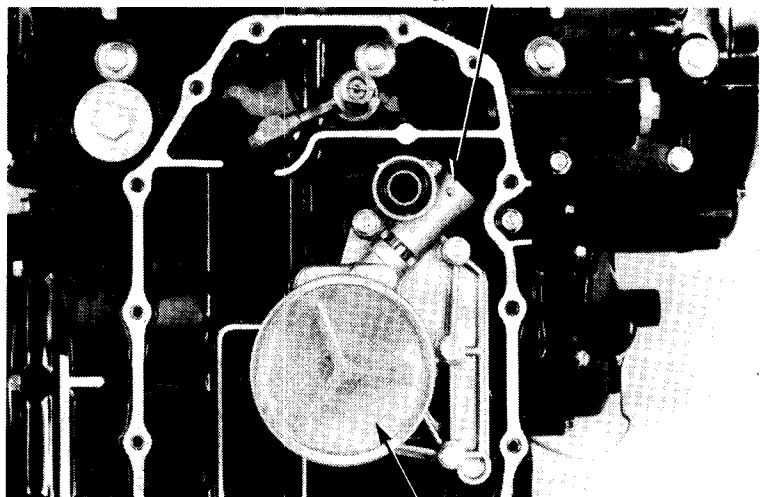
DRAIN PLUG HOSE

Remove the oil pan bolts and oil pan.



OIL PAN PRESSURE RELIEF VALVE

Remove and clean the oil strainer.
Check the operation of the pressure relief valve, making sure it is not sticking.



OIL STRAINER SCREEN



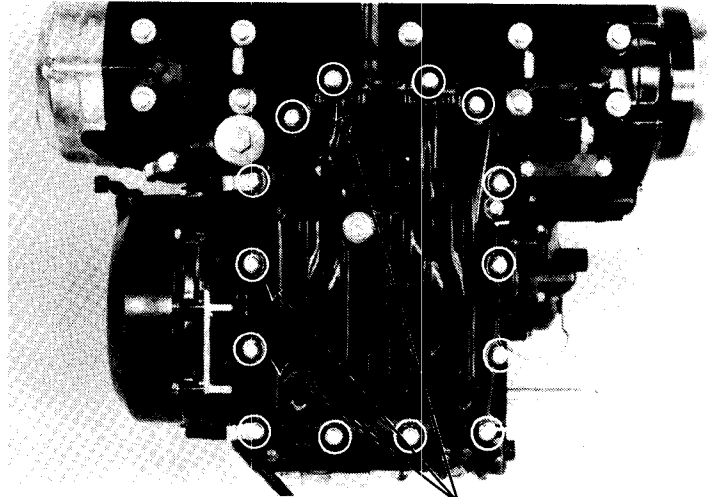
Install the oil strainer and oil pan.

Use sealing washers where indicated by the "△" marks.

Install the exhaust pipes and connect the oil cooler hoses.

Install the oil filter.

Fill the crankcase (page 2-3).



"△" MARKS

OIL PRESSURE GAUGE
ATTACHMENT 07510-4220100

OIL PRESSURE CHECK

Warm the engine up to normal operating temperature (approximately 80°C/176°F).

Stop the engine and remove the oil pressure switch. Connect an oil pressure gauge to the pressure switch hole.

Check the oil level.

Start the engine and check the oil pressure at 7,000 rpm.

OIL PRESSURE:

5.5 kg/cm² (78 psi) at 7,000 rpm (80°C/176°F)

Stop the engine.

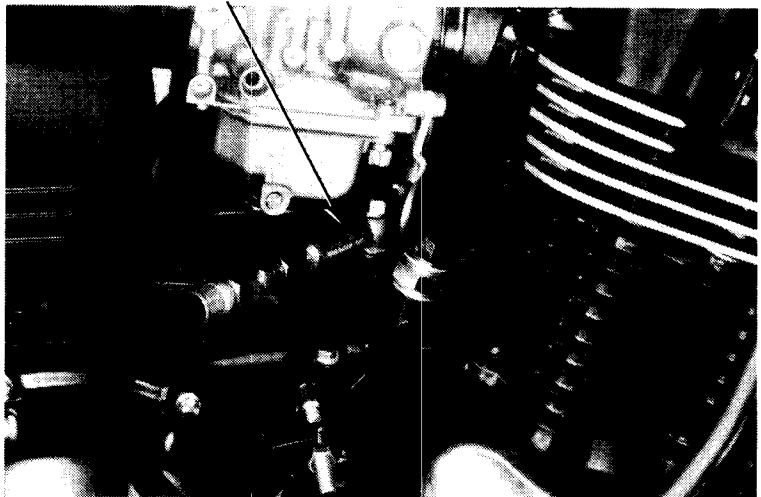
If the oil pressure is not within specification, refer to Troubleshooting on page 2-2.

Apply Loctite® to the pressure switch threads and install.

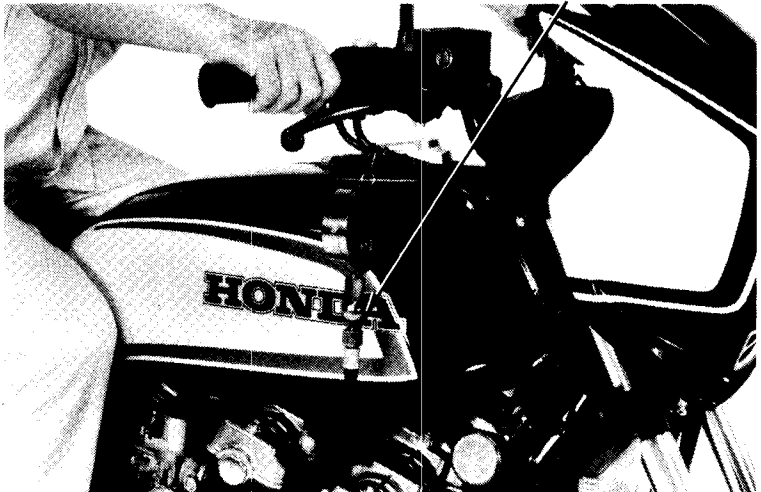
TORQUE: 15-20 N·m

(1.5-2.0 kg·m, 11-14 ft·lb)

Connect the oil pressure switch and start the engine. Check that the oil pressure warning light goes out. If the oil pressure warning light stays on, stop the engine immediately and determine the cause. Refer to page 20-2 for warning switch inspection.



OIL PRESSURE GAUGE
07506-3000000
(Not available in U.S.A.)

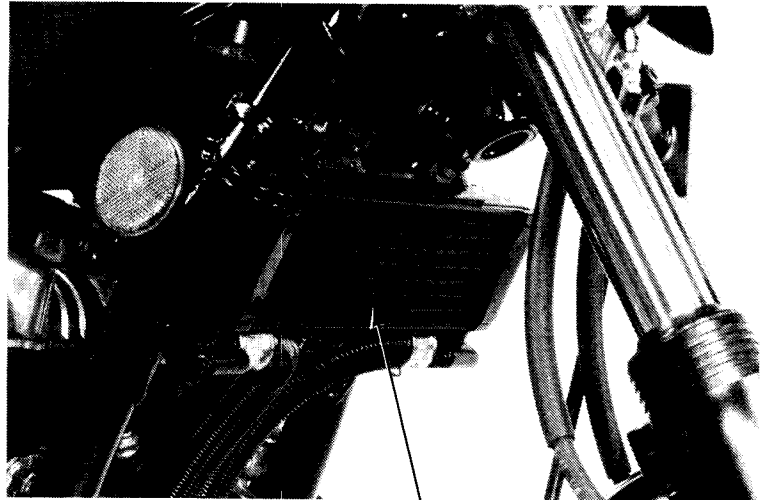




LUBRICATION

OIL COOLER INSPECTION

Check for damage to the oil cooler core.
Clean the core if necessary.



OIL COOLER

OIL PUMP

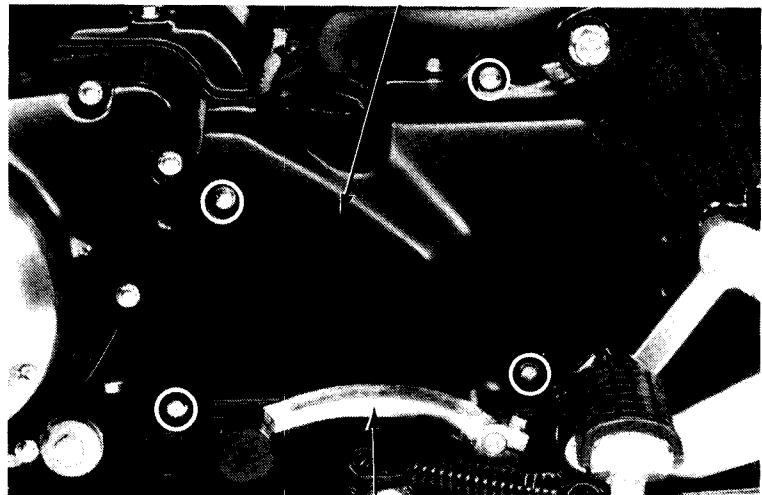
REMOVAL

NOTE:

The oil pump can be removed with the engine mounted in the frame.

Drain the engine oil.
Remove the gearshift pedal and the left crankcase rear cover.

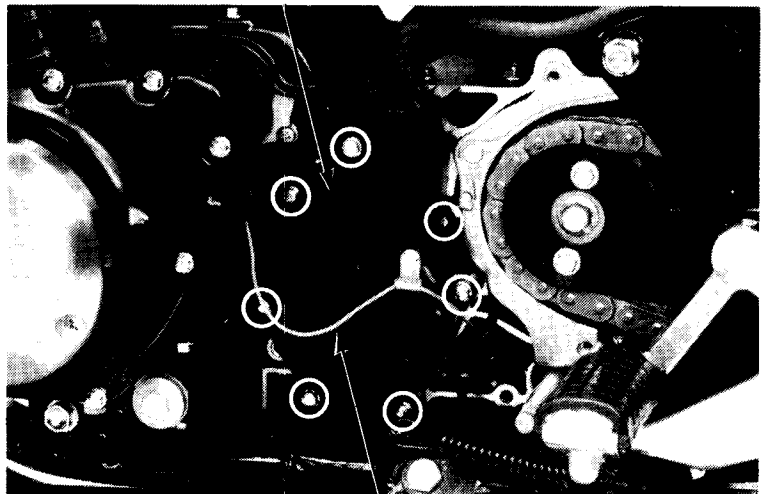
LEFT CRANKCASE REAR COVER



GEARSHIFT PEDAL

OIL PUMP COVER

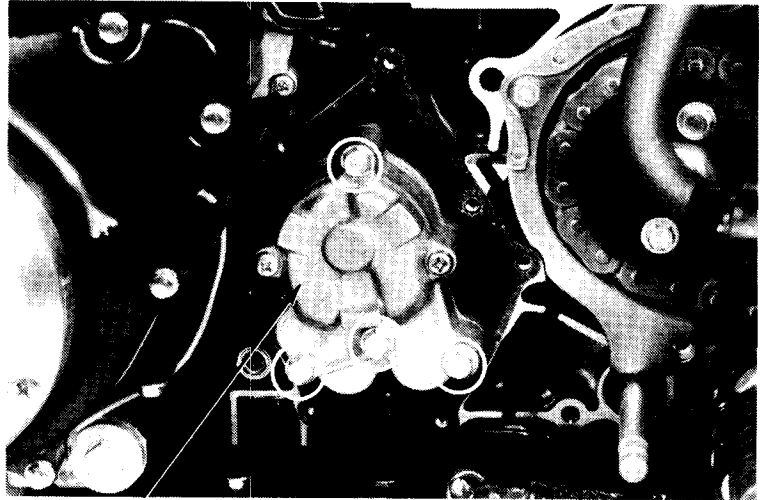
Disconnect the neutral switch wire.
Remove the oil pump cover bolts and oil pump cover.



NEUTRAL SWITCH WIRE



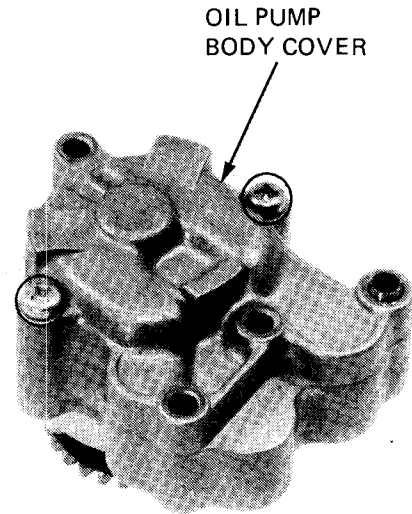
Remove the oil pump mounting bolts and pump.



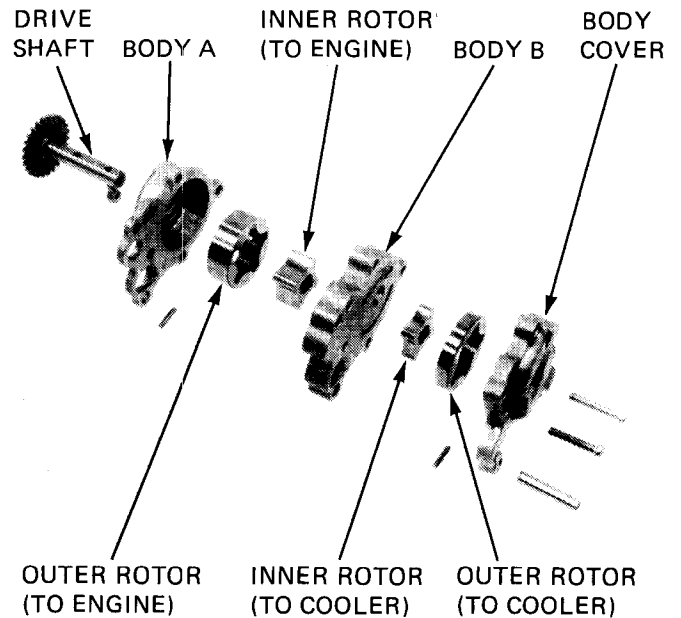
OIL PUMP

DISASSEMBLY

Remove the oil pump body cover screws and cover.



Remove both rotors, drive pin and drive shaft.





LUBRICATION

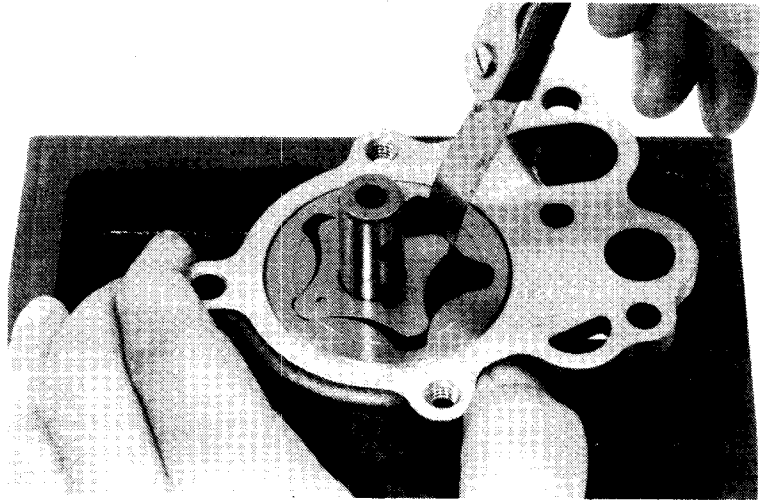
INSPECTION

Measure the rotor tip clearance.

NOTE:

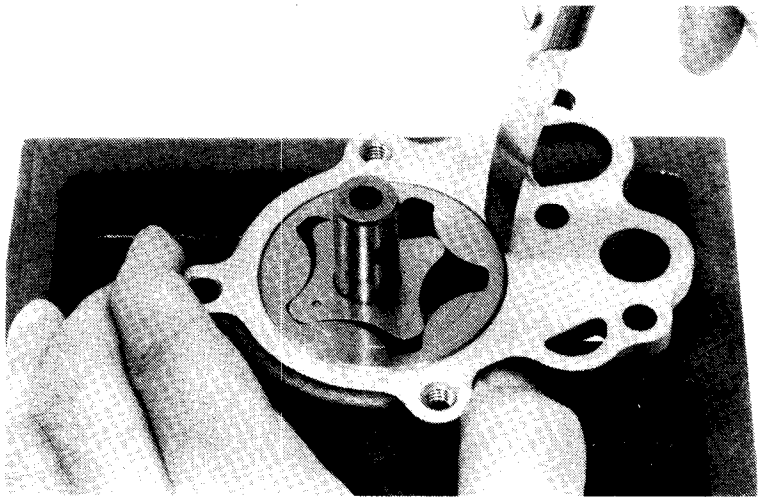
Specifications are the same for the engine and cooler pumps.

SERVICE LIMIT: 0.20 mm (0.008 in)



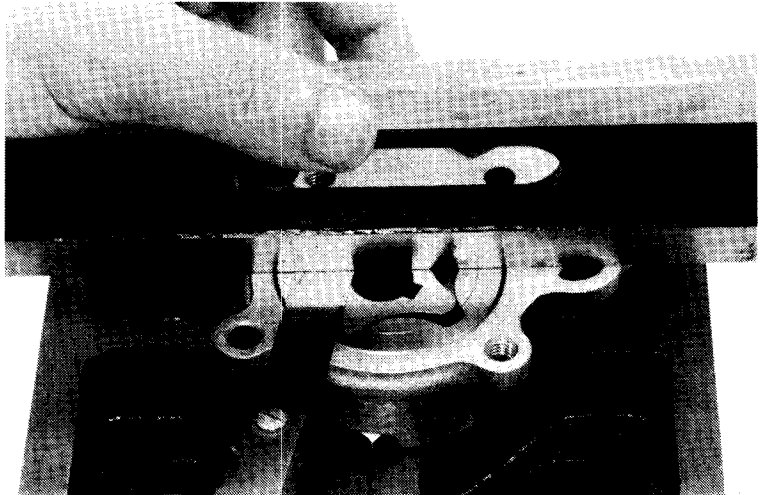
Measure the pump body clearance.

SERVICE LIMIT: 0.35 mm (0.014 in)



Measure the pump end clearance.

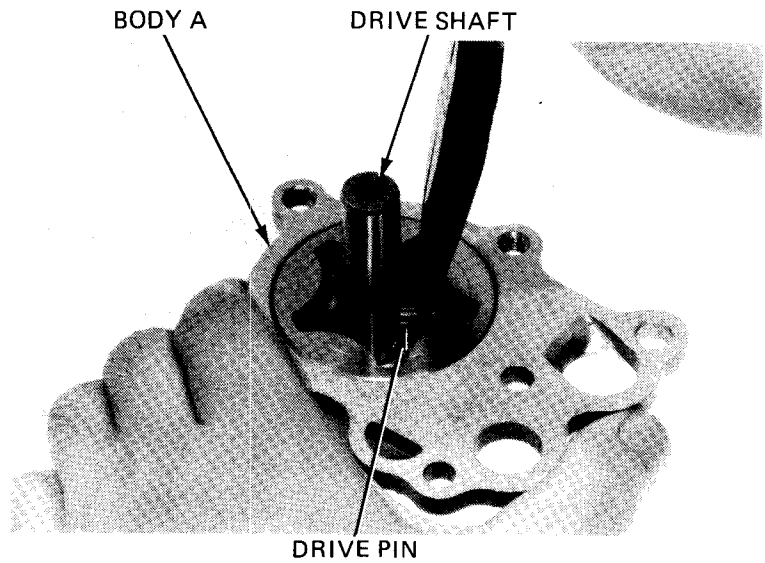
SERVICE LIMIT: 0.10 mm (0.004 in)



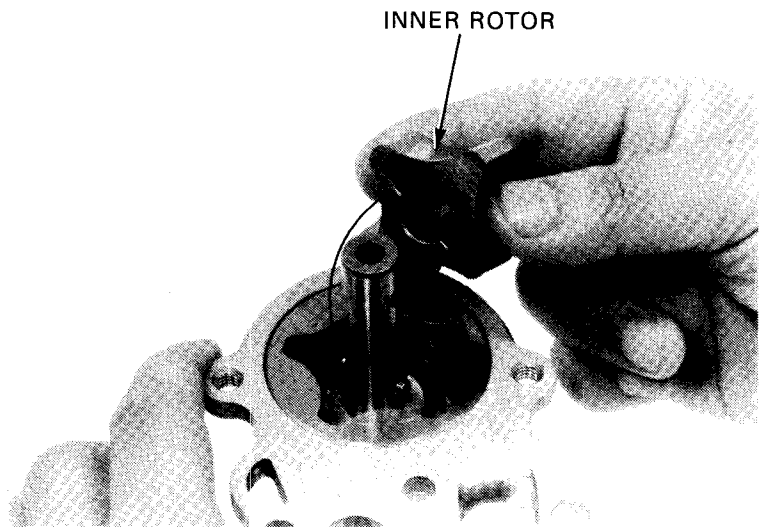


ASSEMBLY

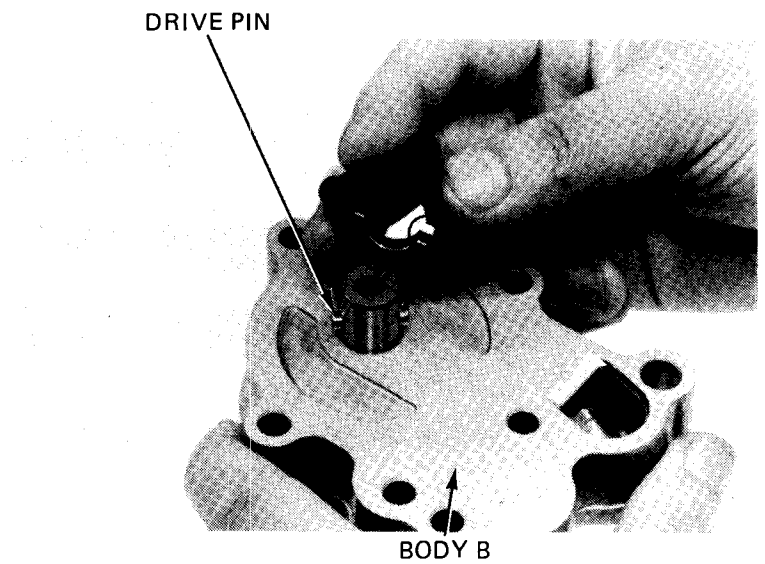
Install the outer rotor into body A and insert the drive shaft.
Insert the drive pin into the drive shaft.



Align the slots in the inner rotor with the drive pin and install the inner rotor.



Install body B and insert the drive pin into the shaft.
Align the slot in the inner rotor with the drive pin.
Install the side covers and tighten the screws.



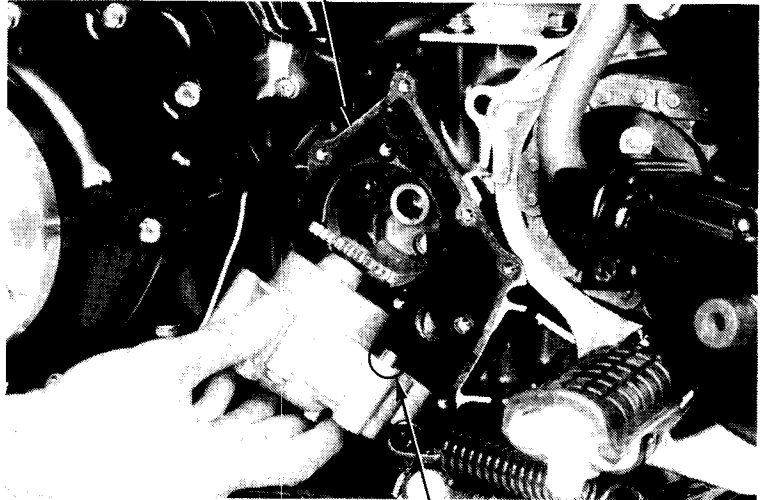


LUBRICATION

INSTALLATION

Install a new gasket.
Engage the oil pump drive and driven gears.
Install the dowel pin.
Install the oil pump and tighten the mounting bolts.

GASKET

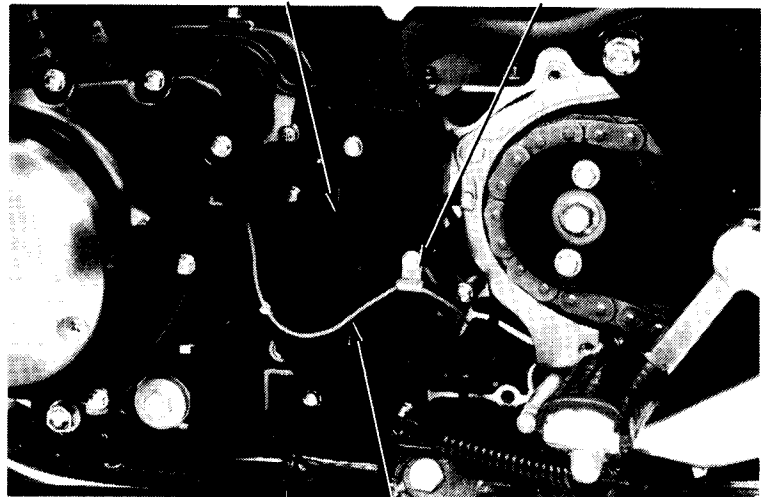


DOWEL PIN

Install the oil pump cover and tighten the oil pump cover bolts.
Route the neutral switch wire as shown.
Install the left crankcase rear cover and gearshift pedal.
Fill the crankcase with the recommended oil (page 2-1 and 2-3).

OIL PUMP COVER

CLAMP



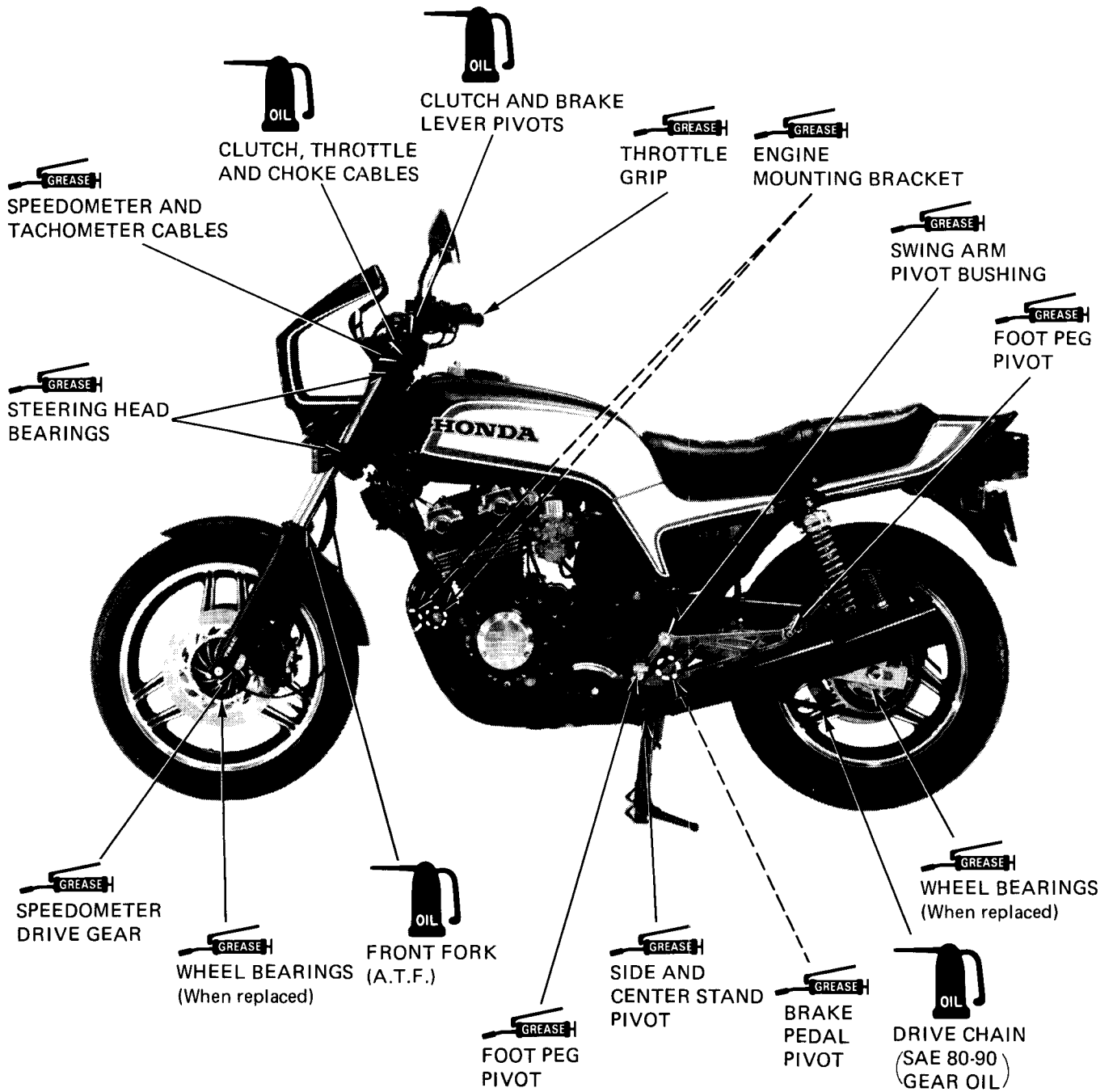
NEUTRAL SWITCH WIRE

<CHASSIS LUBRICATION>
CONTROL CABLE LUBRICATION

Periodically, disconnect the throttle and clutch cables at their upper ends.
Thoroughly lubricate the cables and their pivot points with a commercially available cable lubricant.



LUBRICATION POINTS





HONDA
CB1100F

MEMO