

# Engine Lubrication System

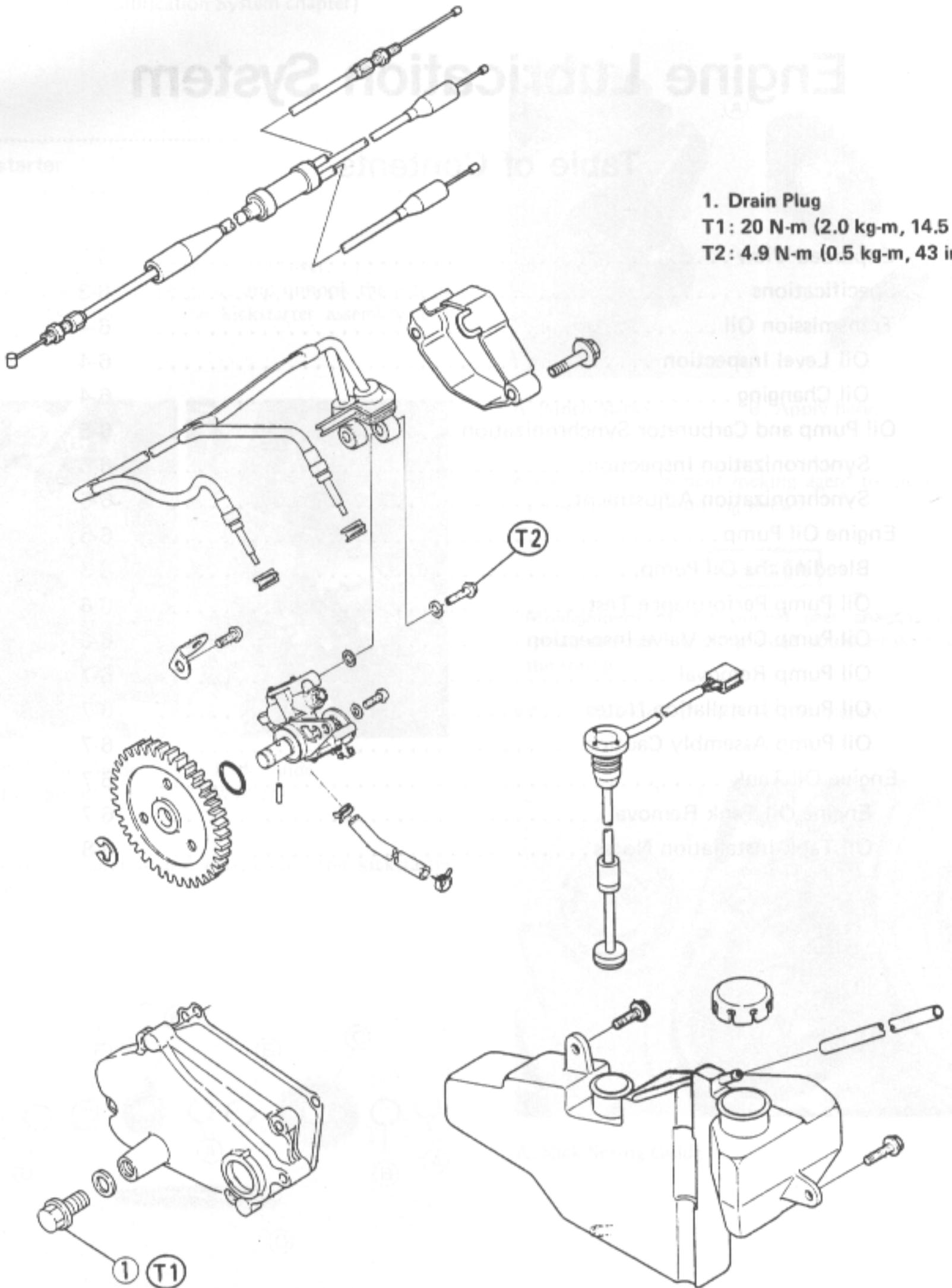
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## 6-2 ENGINE LUBRICATION SYSTEM

### Exploded View



- 1. Drain Plug**  
**T1: 20 N-m (2.0 kg-m, 14.5 ft-lb)**  
**T2: 4.9 N-m (0.5 kg-m, 43 in-lb)**

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**Specifications**

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Item	Standard	Service Limit
Engine Lubrication System: Transmission oil:      Grade Viscosity Amount Engine oil pump:      Oil pump output @2,000 r/min (rpm), 3 min.	SE class SAE 10W30 or 10W40 0.85 L 3.0 – 3.7 mL (per one outlet)	---

## 6-4 ENGINE LUBRICATION SYSTEM

### Transmission Oil

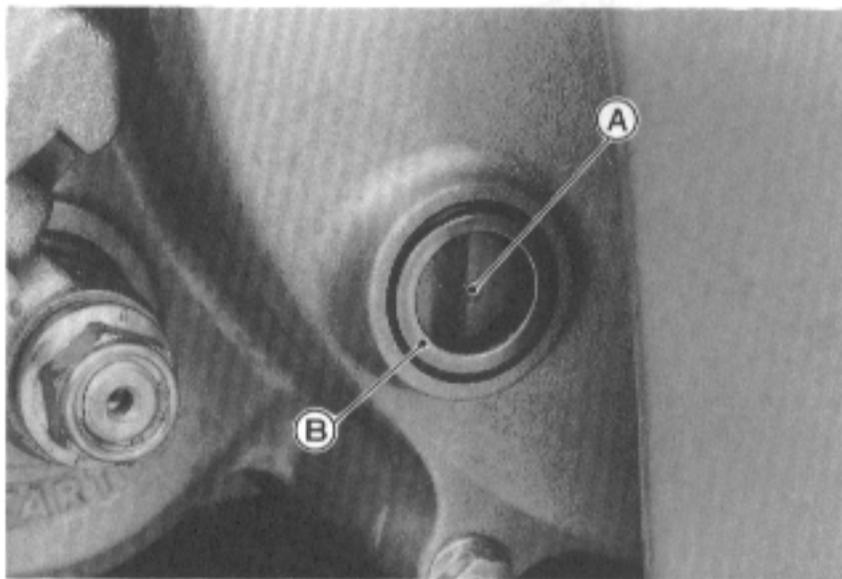
In order for the transmission and clutch to function properly, always maintain the transmission oil at the proper level and change the oil periodically.

#### WARNING

Motorcycle operation with insufficient, deteriorated, or contaminated transmission oil will cause accelerated wear and may result in transmission seizure, accident, and injury.

#### Oil Level Inspection

- If the motorcycle has just been used, wait several minutes for all the oil to drain down.
- If the oil has been poured in since the motorcycle was last used, kick the engine over 3 or 4 times with the ignition switch left in the OFF position. This ensures that the oil "settle."
- Situate the motorcycle so that it is perpendicular to the ground.
- Check the oil level through the oil level gauge.
- ★ The oil level should come up above the mark.



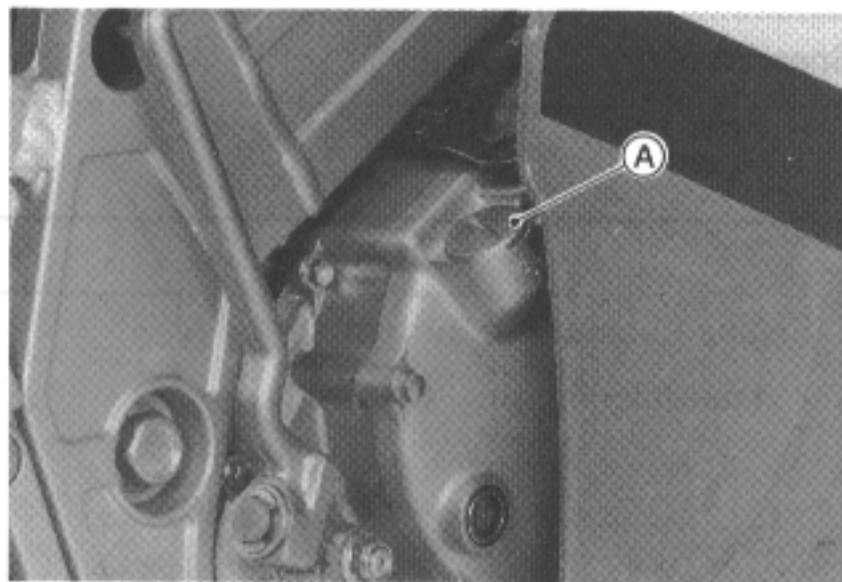
A. Mark

B. Oil Level Gauge

- ★ If the oil level is too high, remove the excess oil, using a syringe or some other suitable device.
- ★ If the oil level is too low, add oil through the oil filler opening. Use the same type and brand of oil that is already in the engine.

#### NOTE

If the oil must be refilled but the type and brand of the oil that already is in the engine are unidentified, change the oil in the engine completely.

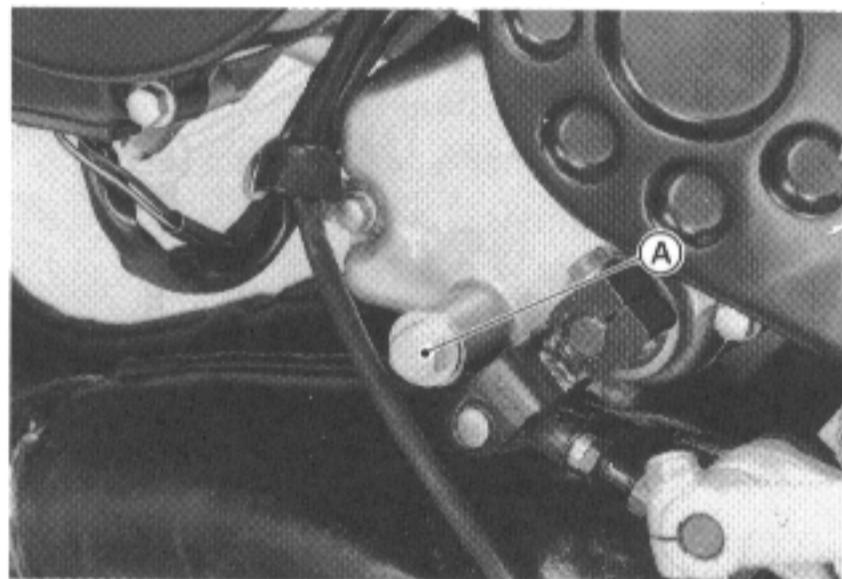


A. Oil Filler Opening Plug

- Install the oil filler opening plug.

#### Oil Changing

- Warm up the engine thoroughly so that the oil will pick up any sediment and drain easily. Then stop the engine.
- Place an oil pan beneath the engine.
- Remove the transmission drain plug.



A. Transmission Oil Drain Plug

- With the motorcycle perpendicular to the ground, let the oil completely drain.
- After the oil has completely drained, install the drain plug with its gasket.

#### NOTE

Replace the damaged gasket with a new one.

- Fill the engine up to the proper level with a transmission oil specified in the table.
- Check the oil level.

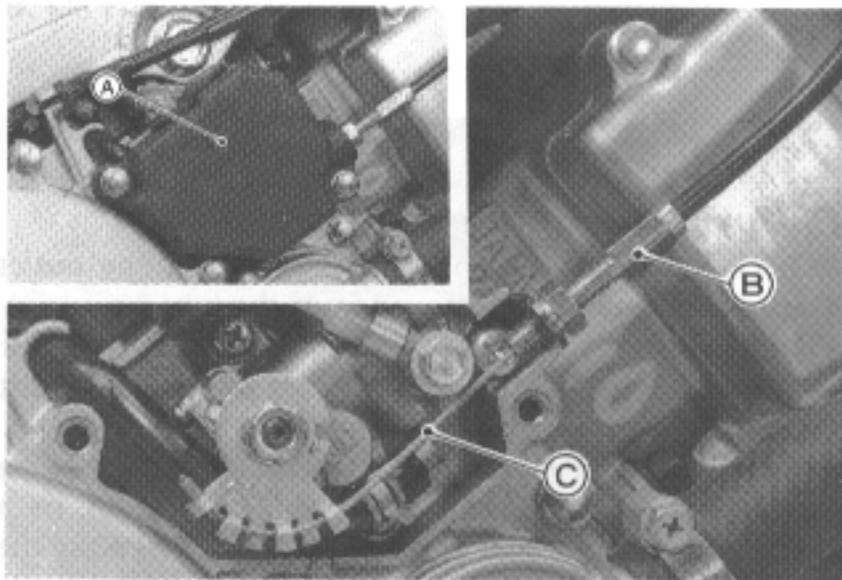
**Transmission Oil**

- Grade: SE class
- Viscosity: SAE 10W30 or 10W40
- Capacity: 0.85 L

**Oil Pump and Carburetor Synchronization**

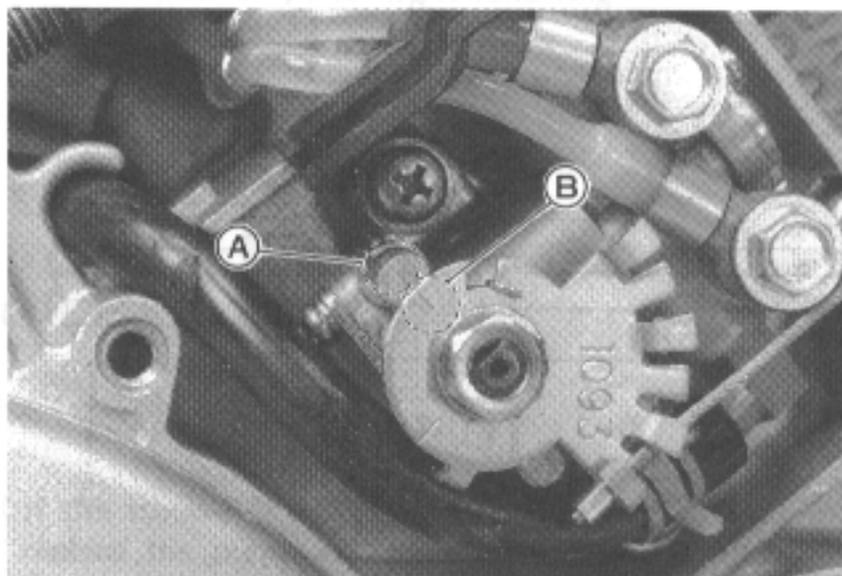
*Synchronization Inspection*

- Check the throttle grip play (see Fuel System chapter).
- Remove the fairings.
- Remove the oil pump cover.
- Check to see that the outer cable end of the oil pump is fully seated in the cable adjuster.



A. Oil Pump Cover      C. Inner Cable  
B. Outer Housing

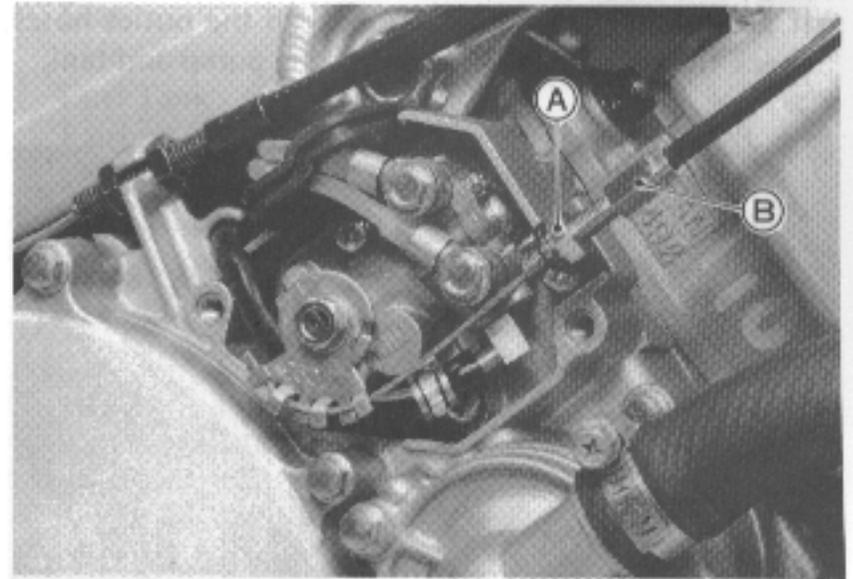
- Make sure the tab on the oil pump lever is bent to hold the oil pump inner cable securely.
- Turn the throttle grip fully, and check to see if the synchronization mark on the pump lever aligns with the mark on the lever stopper.
- ★ If they do not line up, adjust the oil pump cable.



A. Mark on Stopper      B. Mark on Pump Lever

*Synchronization Adjustment*

- Loosen the oil pump cable adjuster locknut, and turn the adjuster to synchronize the pump with the carburetor.



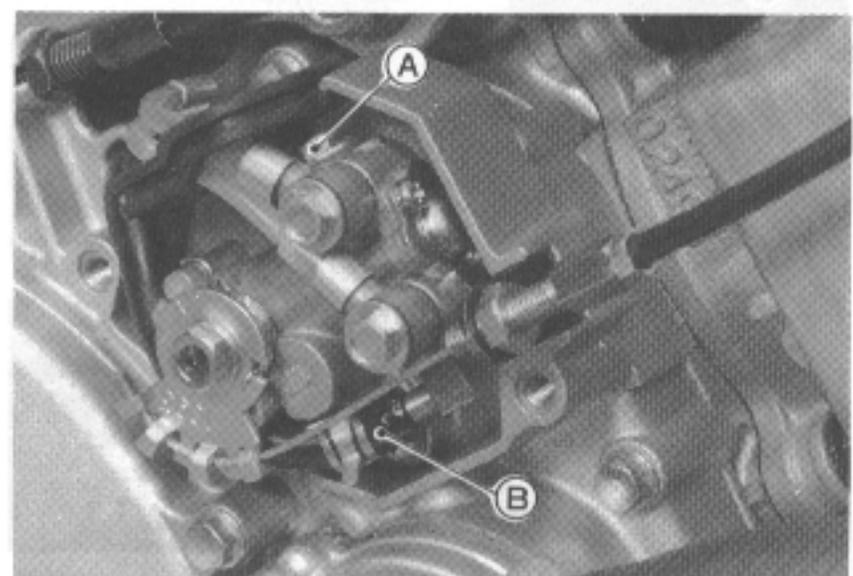
A. Locknut      B. Cable Adjuster

- Tighten the locknut, and check the pump synchronization. Re-adjust if necessary.
- Install the oil pump cover.

**Engine Oil Pump**

*Bleeding the Oil Pump*

- First check that there is plenty of engine oil in the oil tank.
- Remove the oil pump cover.
- Bleed the air from the oil pump inlet hose and oil pump body by backing out the bleeder bolt on the oil pump body a couple of turns. Leave it until the oil flows out of the bleeder bolt, and tighten the bolt securely.

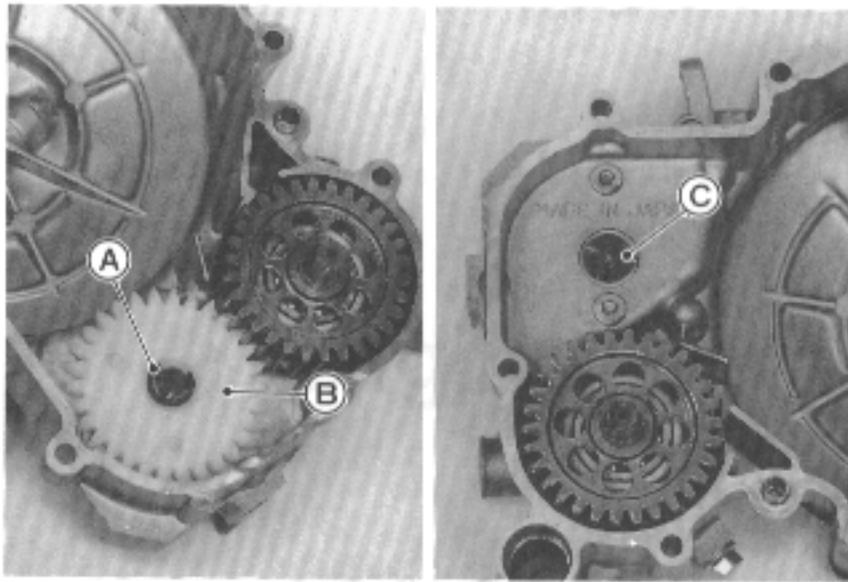


A. Bleeder Bolt      B. Inlet Hose

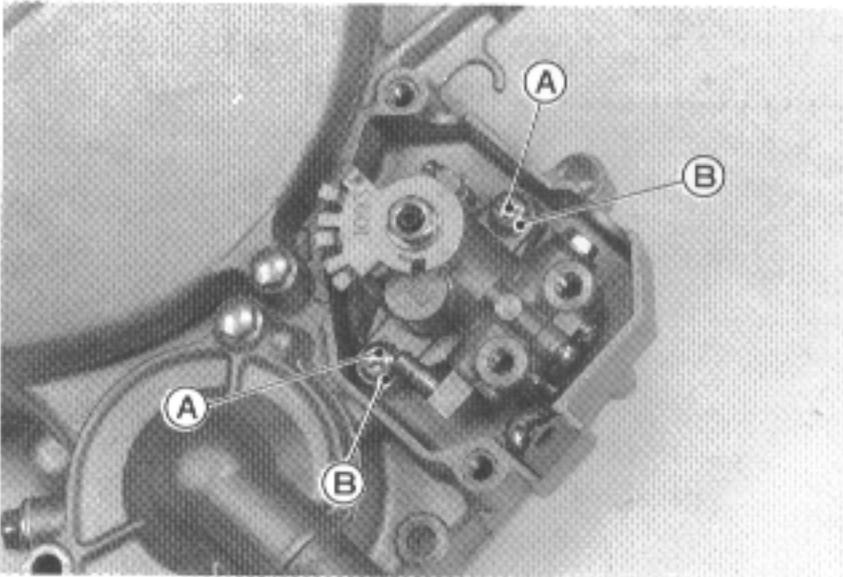


**Oil Pump Removal**

- Remove the engine right cover (see Engine Right Side chapter) and remove the following.



A. E-ring  
B. Oil Pump Driven Gear  
C. Pin



A. Mounting Screws  
B. Washers

**Oil Pump Installation Notes**

- After installation perform the following.
  - Oil Pump Bleeding
  - Oil Pump and Carburetor Synchronization

**Oil Pump Assembly Caution**

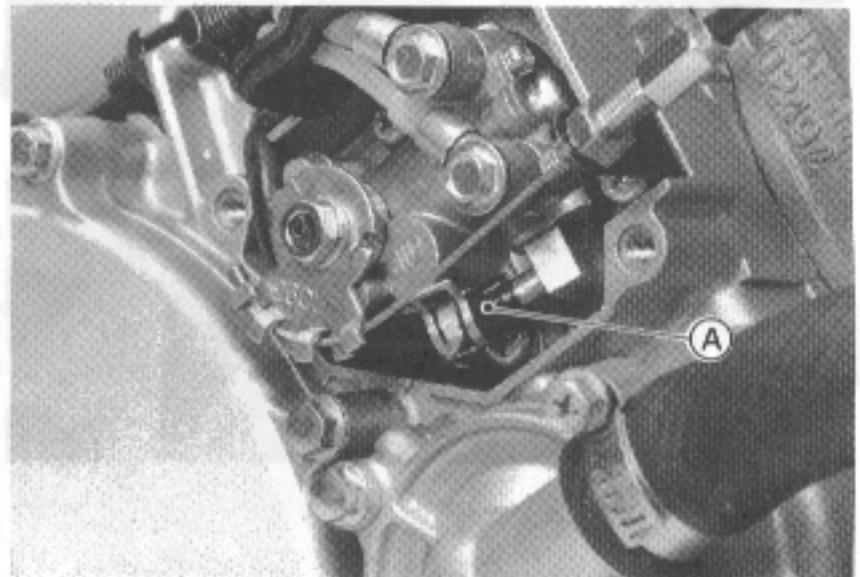


- If the trouble is with internal parts of the oil pump, replace the pump as a unit. The pump is precision made with no allowance for replacement of individual parts.

**Engine Oil Tank**

**Engine Oil Tank Removal**

- Remove the following.
  - Seat
  - Side Covers
  - Fuel Tank
  - Fairings
  - Carburetor (see Fuel System chapter)
  - Air Cleaner Housing (see Fuel System chapter)
  - Oil Pump Cover

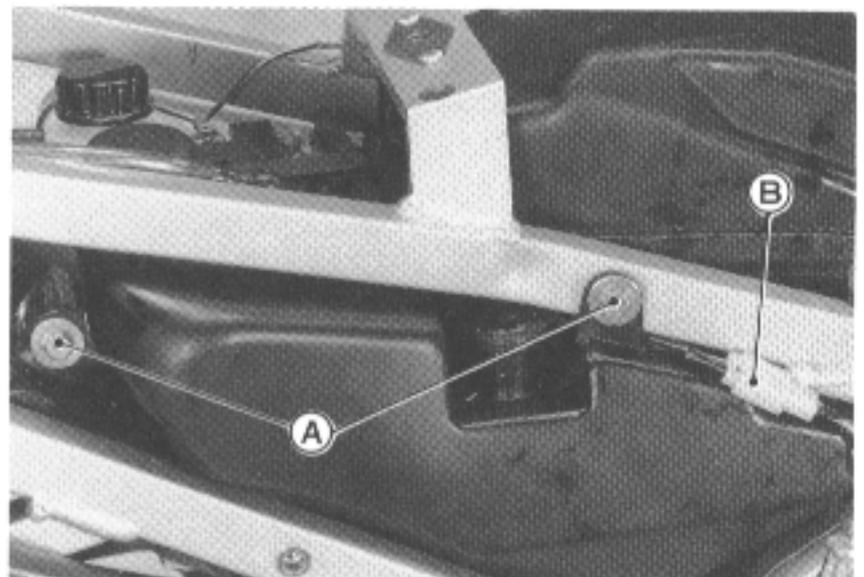


A. Oil Pump Inlet Hose End

\*If any air has gotten trapped in the oil pump inlet hose, bleed the oil pump (see Oil Pump Bleeding).

**NOTE**

- When disconnecting the inlet hose, screw a suitable bolt into the oil pump inlet hose to keep the oil from flowing out. Then keep the end of the hose upward.



A. Mounting Bolts  
B. Oil Level Warning Light Lead Connector

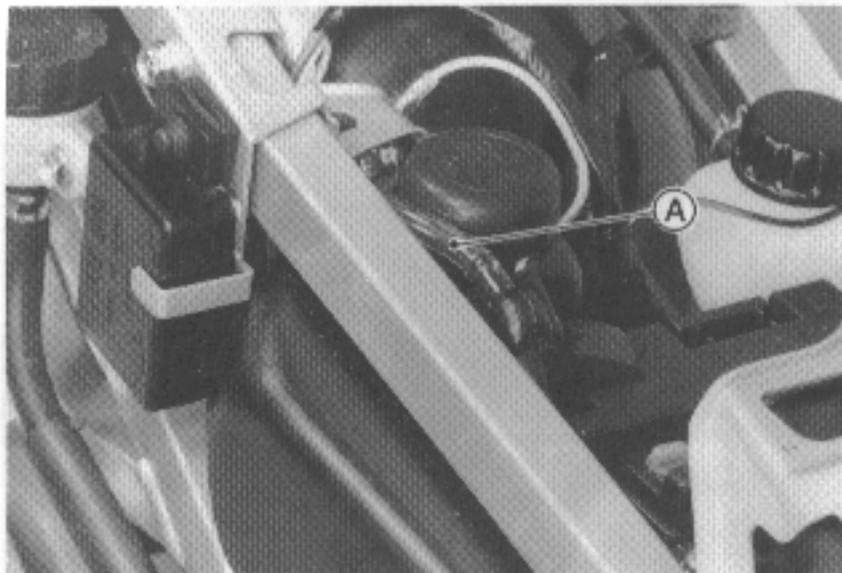
- Remove the engine oil tank.

## 6-8 ENGINE LUBRICATION SYSTEM

### Oil Tank Installation Notes

#### CAUTION

- Always keep the oil tank breather tube free of obstruction, and make sure it does not get pinched, crimped, bent sharply, or melted by the exhaust pipe. If the breather is obstructed, engine oil flow to the oil pump will be hindered and serious engine damage will occur.



A. Breather Tube

- ★ If any air has gotten trapped in the oil pump inlet hose, bleed the oil pump (see Oil Pump Bleeding).

#### CAUTION

- To avoid serious engine damage, air in the oil pump line must be removed by bleeding.

Oil Pump Removal  
Remove the engine right cover (see Engine Right Side  
Accessories) and remove the breather tube (see Oil Tank  
Installation Notes).  
Remove the oil pump cover (see Oil Pump Cover Removal).  
Remove the oil pump (see Oil Pump Removal).



A. Oil Pump Cover  
B. Oil Pump Cover

Oil Pump Cover  
Check the oil pump cover for damage. If damaged, replace the cover (see Oil Pump Cover Replacement).



A. Mounting Screws  
B. Washers

Install the oil pump cover (see Oil Pump Cover Installation).  
Install the oil pump cover (see Oil Pump Cover Installation).