



# 7. CLUTCH/OIL PUMP

SERVICE INFORMATION	7- 1
TROUBLESHOOTING	7- 1
CLUTCH REMOVAL	7- 2
CLUTCH INSTALLATION	7- 5
OIL PUMP REMOVAL	7- 8
OIL PUMP INSTALLATION	7-11

## SERVICE INFORMATION

### • WORKING PRACTICE

Clutch discs, plates "A" and "B", clutch center, and clutch plates can be serviced by removing the clutch cover. To service the oil pump, it is necessary to remove the radiator and transmission cover. All these operations can be accomplished with the engine in the frame.

### • SPECIAL TOOLS

Special tool	
CLUTCH CENTER HOLDER	07923-415000
Common tools	
LOCK NUT SOCKET WRENCH (26 x 29 mm)	07716-002021
EXTENSION HANDLE	07716-0020500

### • SPECIFICATIONS

		Standard	Service Limit	
Clutch	Lever free play (at lever end)	10-20 mm (3/8-3/4 in.)	—	
	Clutch spring	Free length	33.90 mm (1.3346 in.)	32.5 mm (1.2795 in.)
		Tension	19.7-22.3 kg/23.5 mm (43.4-49.2 lbs/0.9252 in.)	18.0 kg/23.5 mm (39.7 lbs/0.9252 in.)
	Disc thickness	A	2.7 mm (0.1062 in.)	2.3 mm (0.0905 in.)
		B	3.5 mm (0.1378 in.)	3.1 mm (0.1220 in.)
	Plate warpage	A	—	0.20 mm (0.008 in.)
		B	—	0.20 mm (0.008 in.)
	Clutch outer I.D.		33.000-33.016 mm (1.2992-1.2998 in.)	33.07 mm (1.3019 in.)
Outer guide O.D.		32.950-32.975 mm (1.2972-1.2982 in.)	32.90 mm (1.2952 in.)	
Oil pump	Inner-to-outer rotor clearance	—	0.10 mm (0.004 in.)	
	Outer rotor-to-body clearance	—	0.35 mm (0.0138 in.)	
	Rotor-to-body clearance	—	0.10 mm (0.004 in.)	
Oil pressure relief valve Relief pressure		5.0-6.0 kg/cm <sup>2</sup> (71.1-85.3 psi.)	—	

## TROUBLESHOOTING

### Oil Pump

• Refer to page 2-1 for oil pump troubleshooting.

### Clutch

• Faulty clutch operation can usually be corrected by adjusting the free play.

### Clutch Slips When Accelerating

- No free play
- Discs worn
- Springs weak

### Clutch Will Not Disengage

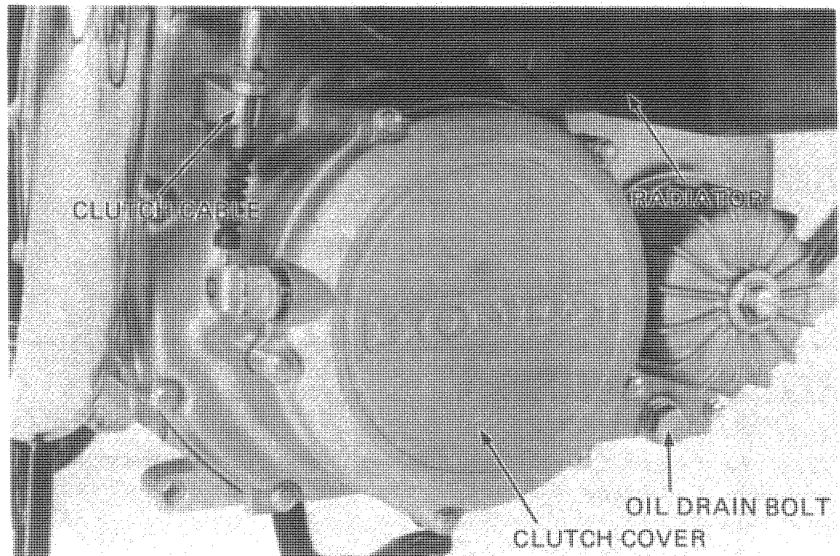
- Too much free play
  - Plates warped
- Clutch Chatters or Rattles
- Worn clutch outer and disc splines
- Motorcycle Creeps with Clutch Disengaged
- Too much free play
  - Plates warped
- Excessive Lever Pressure
- Clutch cable linked, damaged or dirty
  - Lifter mechanism damaged
- Clutch Operation Feels Rough
- Outer drum slots rough
  - Disc plate wave spring weak or damaged



**CLUTCH/OIL PUMP**

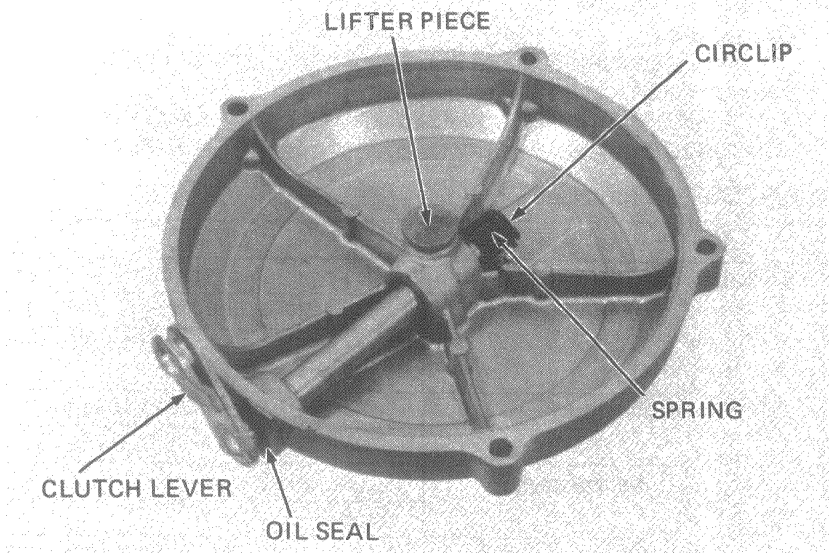
**CLUTCH REMOVAL**

Drain the oil from engine.  
Disconnect the clutch cable at the lower adjuster.  
Remove the clutch cover.



• **CLUTCH LIFTER REMOVAL**

Remove the lifter piece, circlip, spring, clutch lever and O-ring.

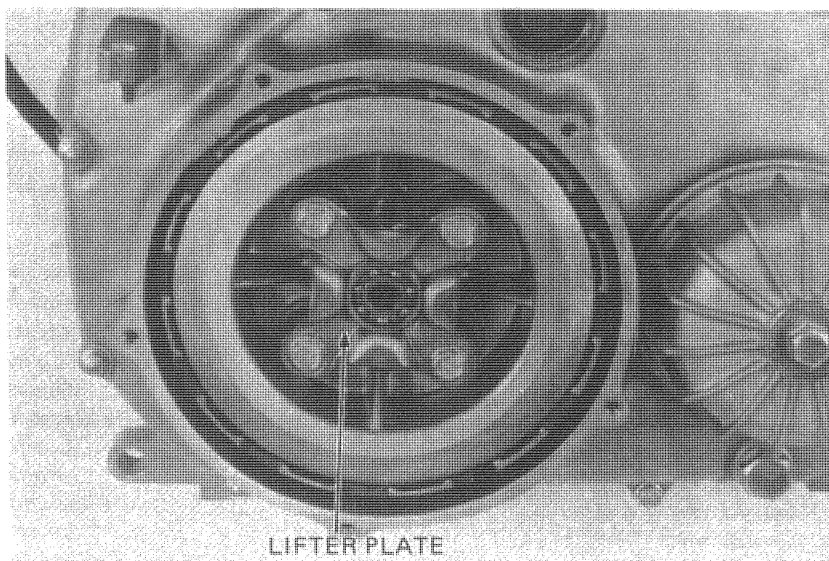


• **CLUTCH LIFTER PLATE REMOVAL**

Remove the bolts, springs and lifter plate.

**NOTE**

Loosen the bolts in an X pattern in two or more steps.





### • CLUTCH REMOVAL

Attach the CLUTCH CENTER HOLDER on to the pressure plate boss with four, 6 x 35 mm bolts.

#### NOTE

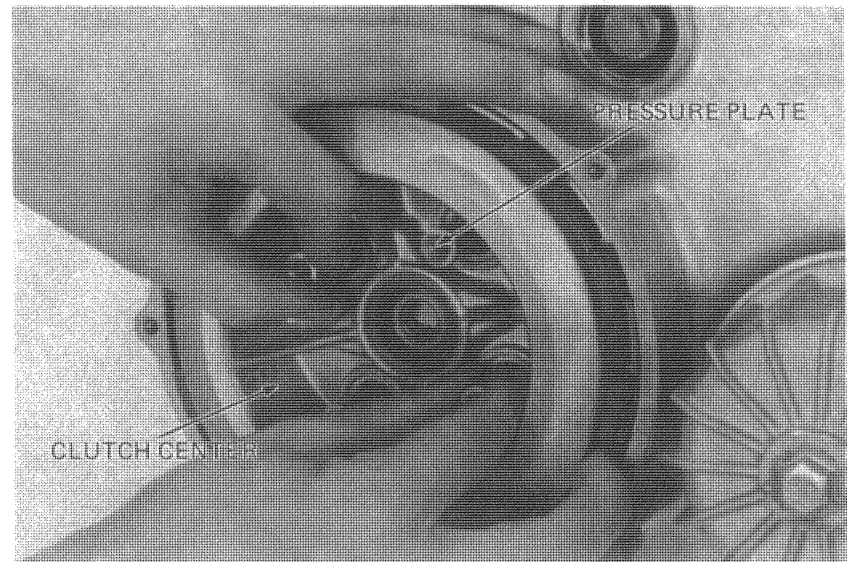
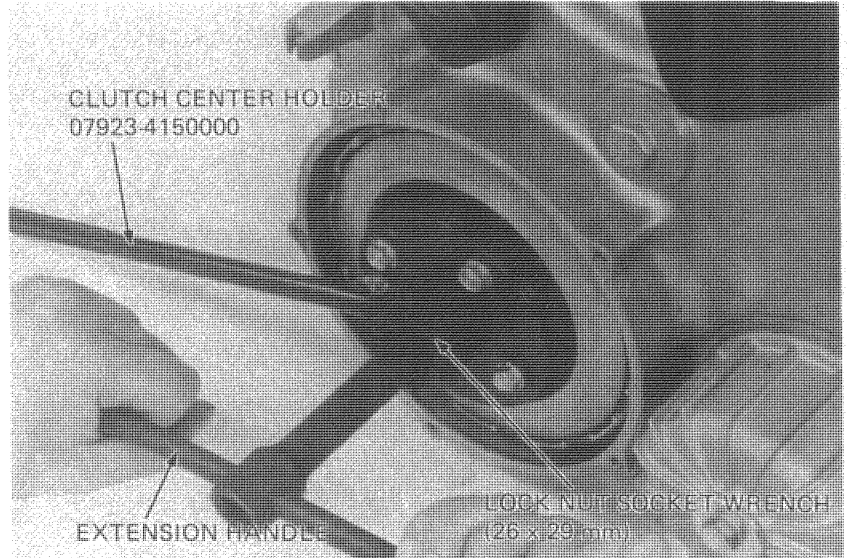
Tighten the bolts finger tight.

Remove the lock nut and lock washers.

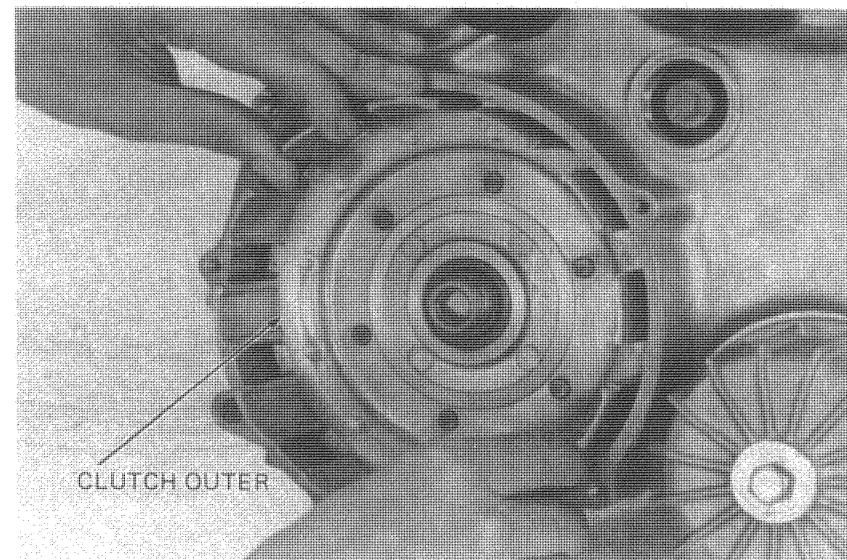
#### CAUTION

*Damage to the pressure plate will occur, if the clutch center holder is not attached with 4 bolts.*

Remove the pressure plate, discs "A" and "B", disc plate, and clutch center as a unit.



Remove the clutch outer.  
Remove the clutch outer guide and thrust washer.





**CLUTCH/OIL PUMP**

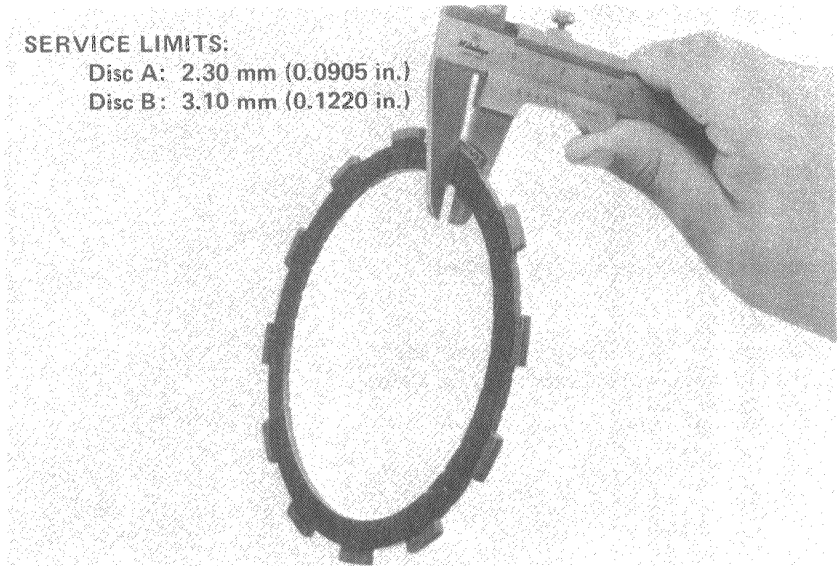
• **CLUTCH DISC INSPECTION**

Replace the clutch discs if they show signs of scoring or discoloration. Measure the disc thickness.

**SERVICE LIMITS:**

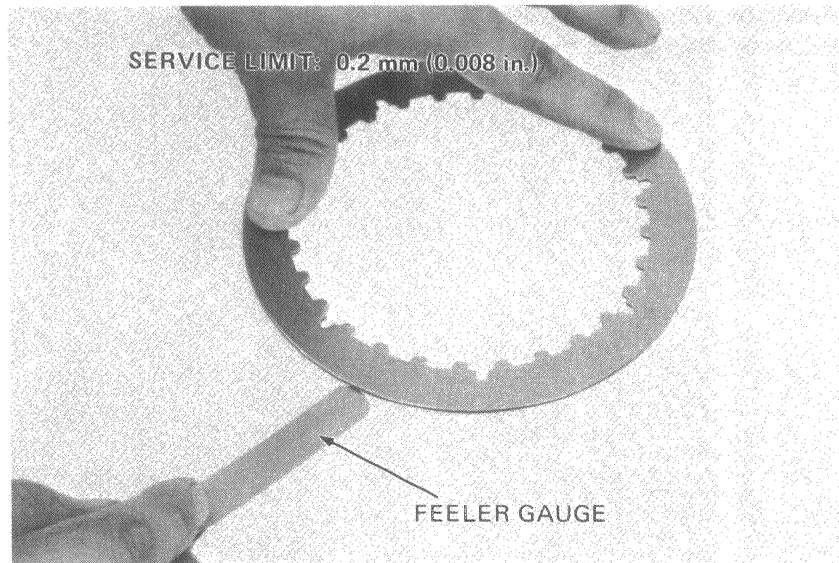
Disc A: 2.30 mm (0.0905 in.)

Disc B: 3.10 mm (0.1220 in.)



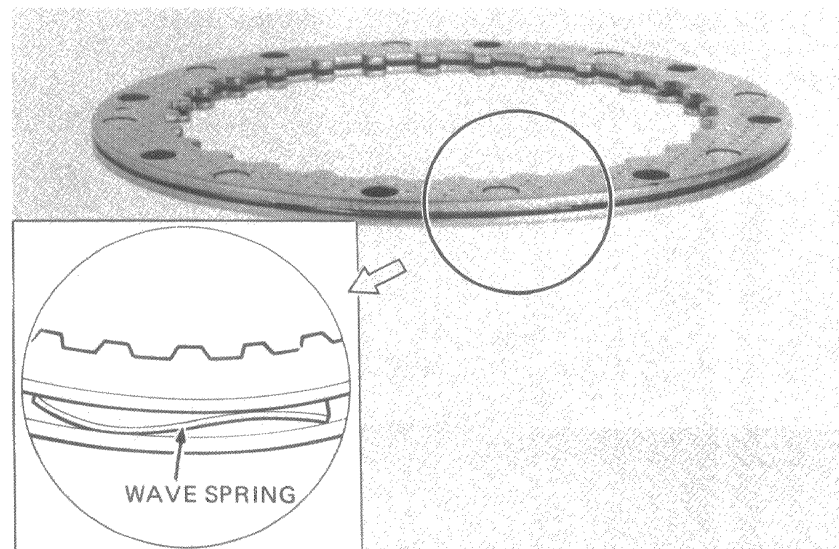
• **CLUTCH PLATE INSPECTION**

Check for plate warpage on a surface plate, using a feeler gauge.



• **CLUTCH PLATE B INSPECTION**

Check the wave spring for damage.

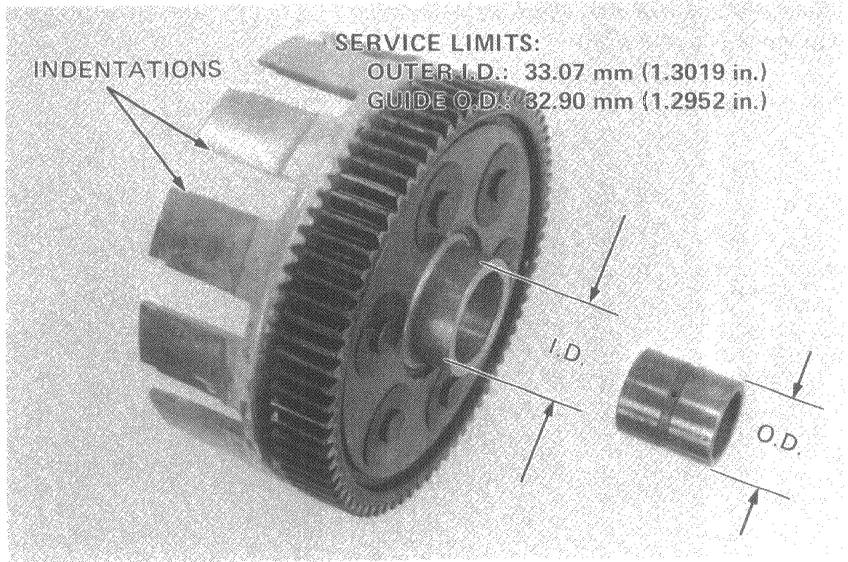




### ● CLUTCH OUTER AND OUTER GUIDE INSPECTION

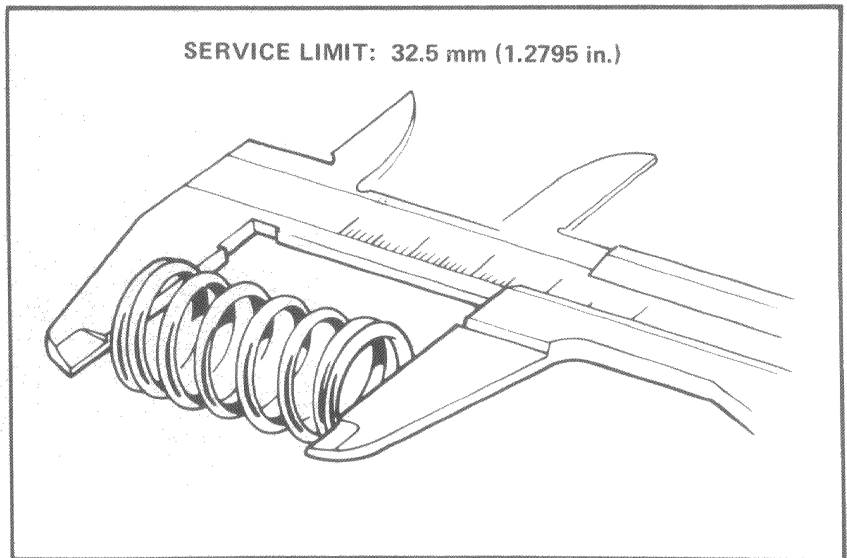
Check the slots in the outer drum for nicks, cuts or indentations made by the friction discs.

Measure the I.D. of the clutch outer and the O.D. of the outer guide.



### ● CLUTCH SPRING INSPECTION

Measure the spring free length.

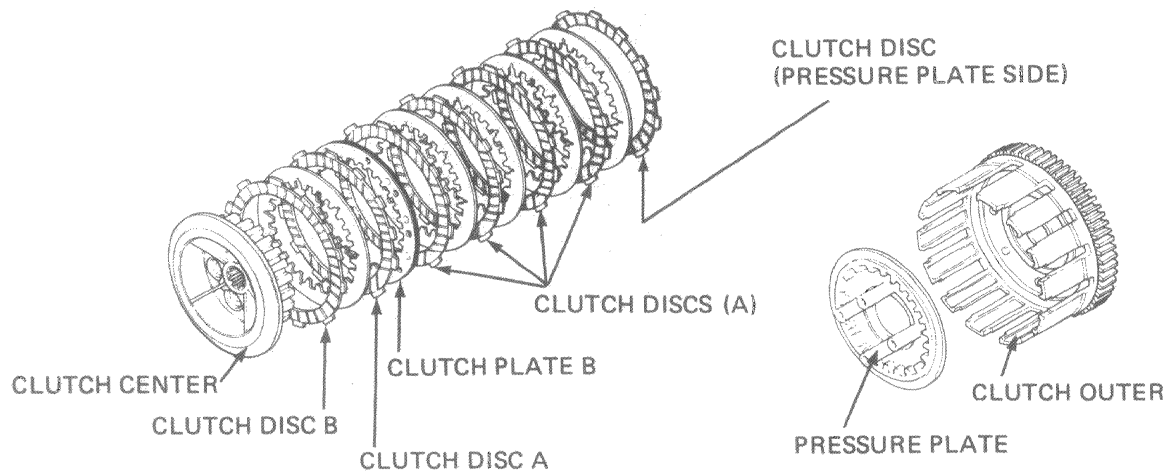


## CLUTCH INSTALLATION

Install the clutch plates and discs in the clutch outer as shown.

### NOTE

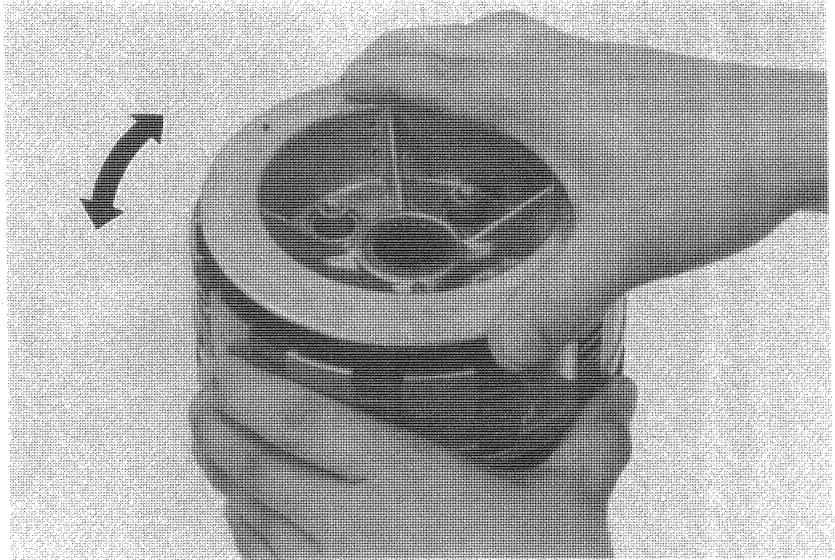
The disc on the pressure plate side is identified by the grooves in its lining.





**CLUTCH/OIL PUMP**

Install the clutch center, aligning the splines by rotating the clutch center.



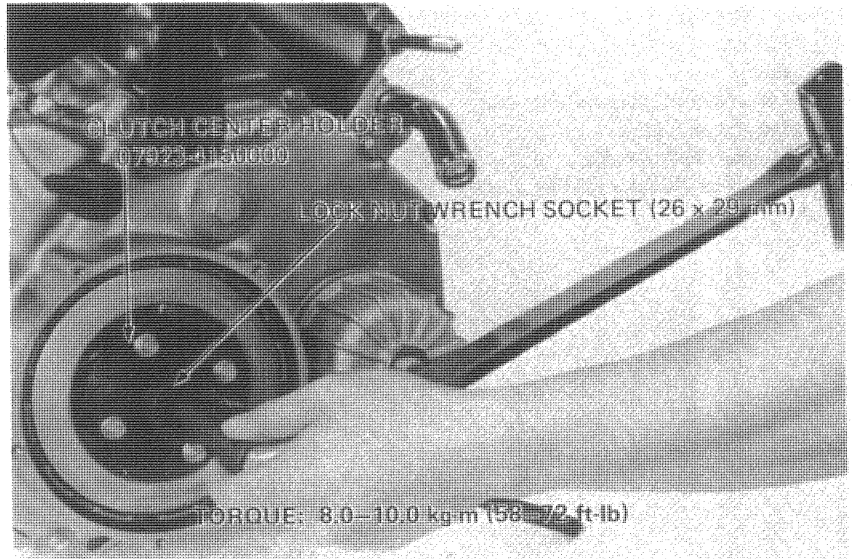
Install the thrust washer and outer guide on the main shaft.





**CLUTCH/OIL PUMP**

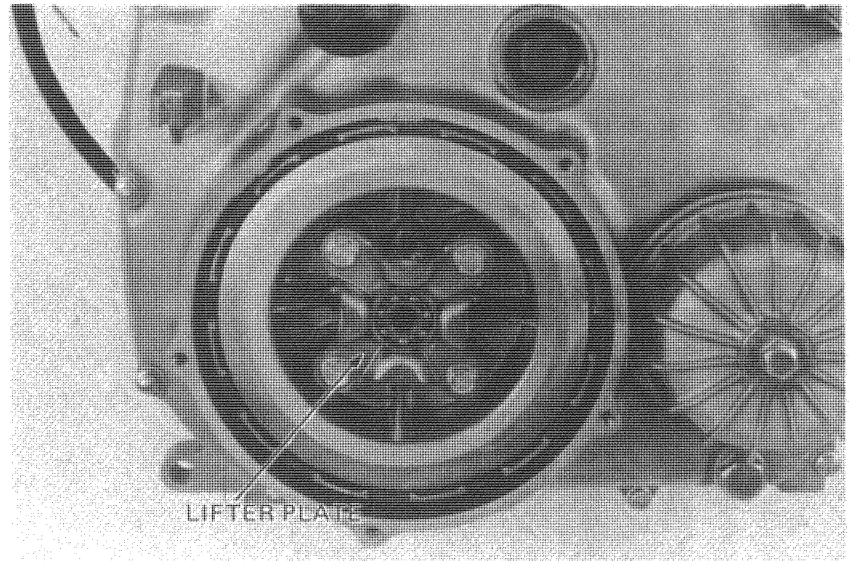
Attach the CLUTCH CENTER HOLDER to the pressure plate boss to prevent it from turning. Torque the lock nut.



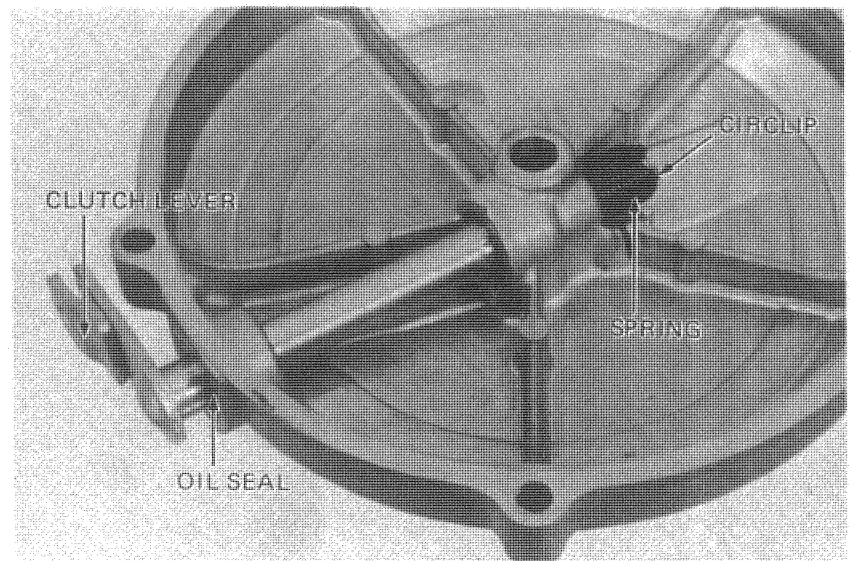
Install the clutch springs, lifter plate, and lifter plate bolts.

**NOTE**

Tighten the bolts evenly 2-3 steps using a criss cross pattern.



Install the oil seal in the clutch cover.  
Install the clutch lever.  
Install the spring and circlip.





**CLUTCH/OIL PUMP**

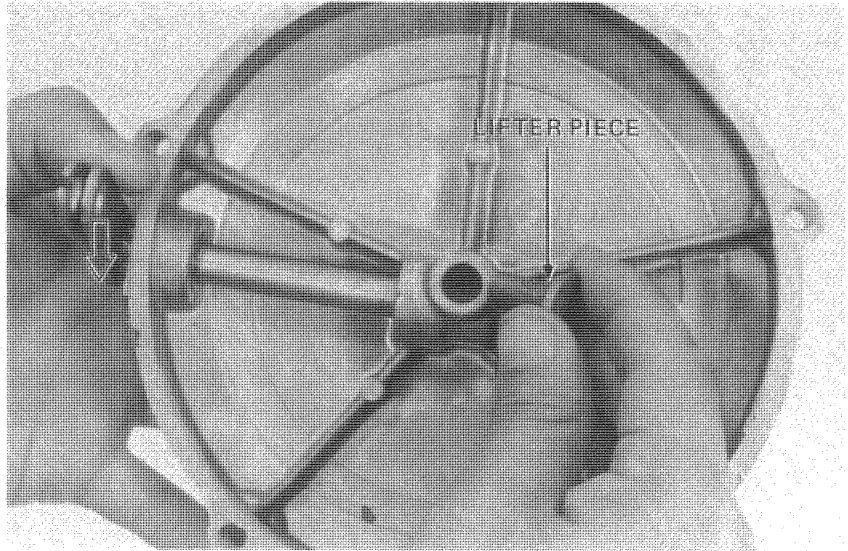
Rotate the clutch lever to align hole in the lever with the hole in the clutch cover and insert the lifter piece.

Install the clutch cover gasket.

Install the clutch cover.

Connect the clutch cable.

Adjust the clutch (Page 3-13).



**OIL PUMP REMOVAL**

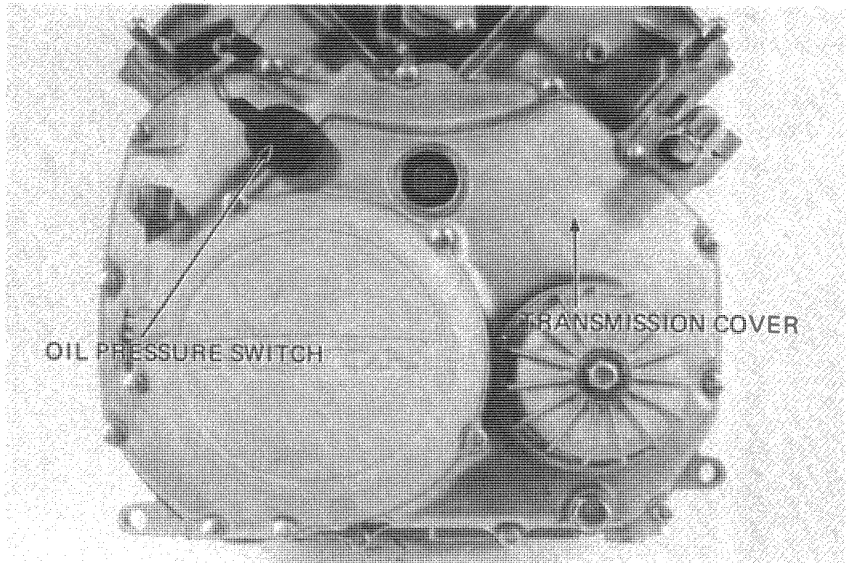
Drain the oil from the engine.

Disconnect the oil pressure switch.

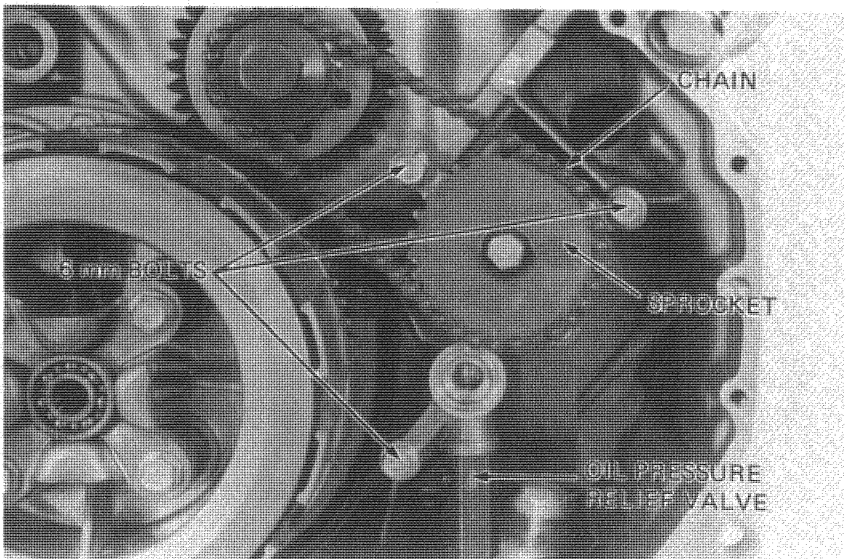
Remove the transmission cover.

**NOTE**

When this operation is to be accomplished with the engine in the frame, remove the radiator and clutch cable at the lower adjuster.



Remove the two, 6 mm bolts shown and the oil pump drive chain.

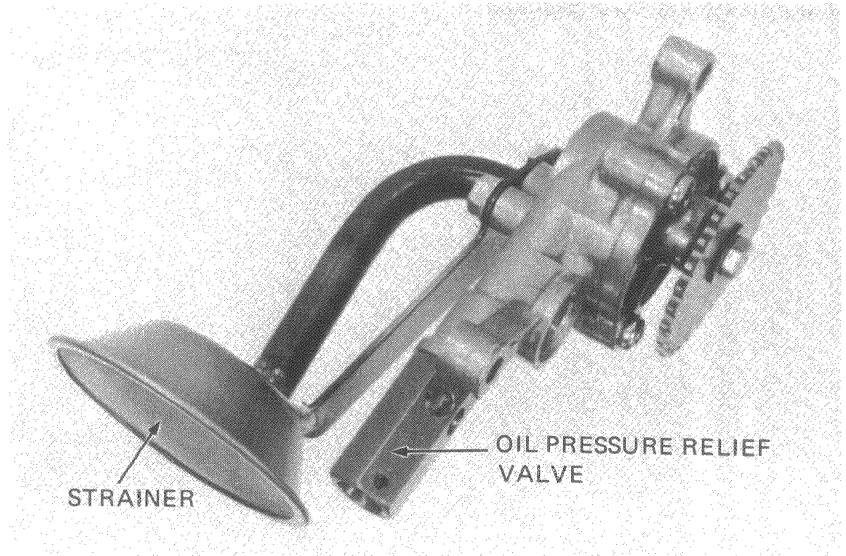




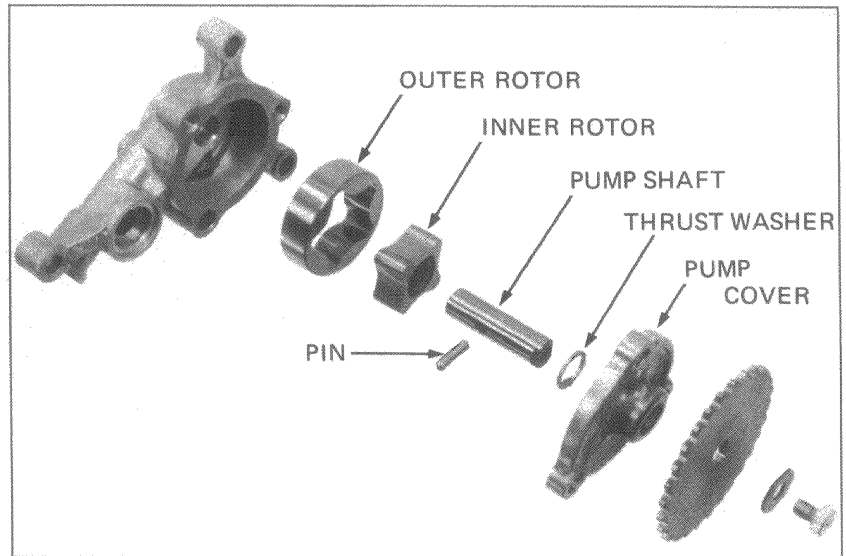


● **OIL PUMP DISASSEMBLY**

Remove the pressure relief valve and oil strainer. Inspect the strainer and clean with solvent.



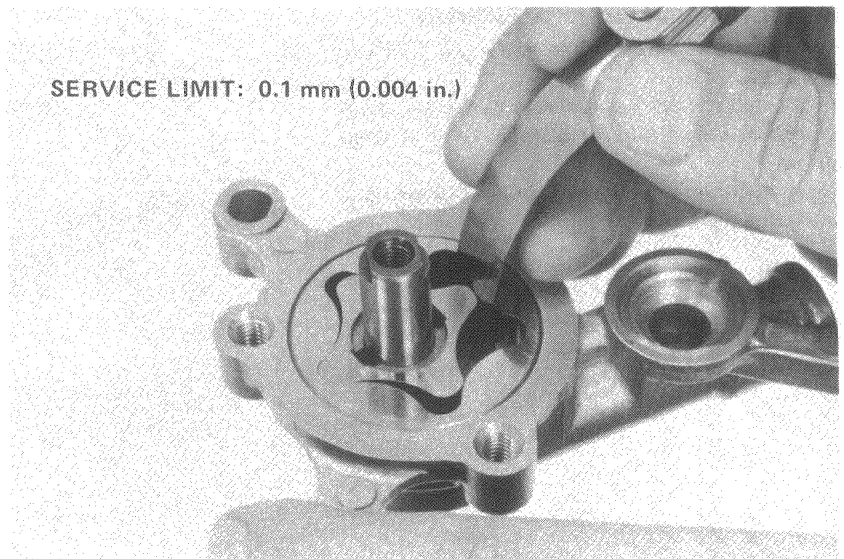
Remove the sprocket.  
Remove the pump cover, thrust washer, pump shaft, and driving pin.  
Remove the inner and outer rotors.



● **OIL PUMP INSPECTION**

Measure pump tip clearance.

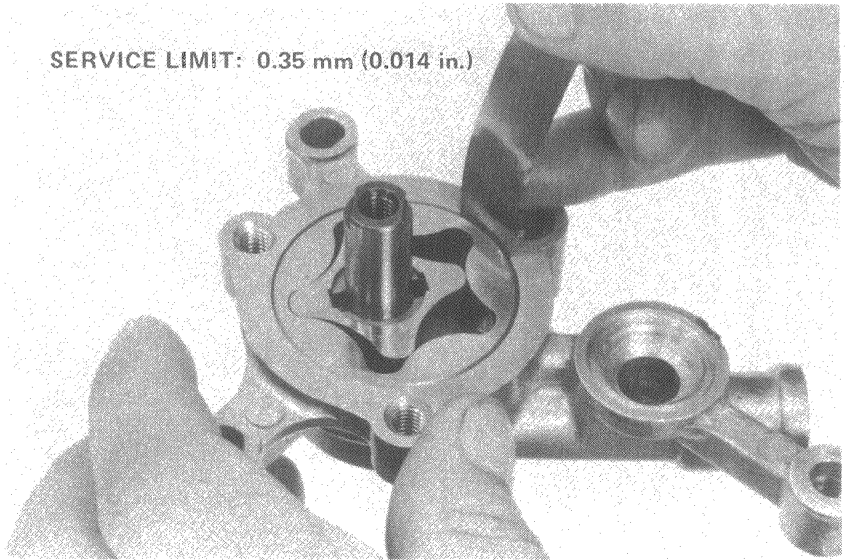
SERVICE LIMIT: 0.1 mm (0.004 in.)





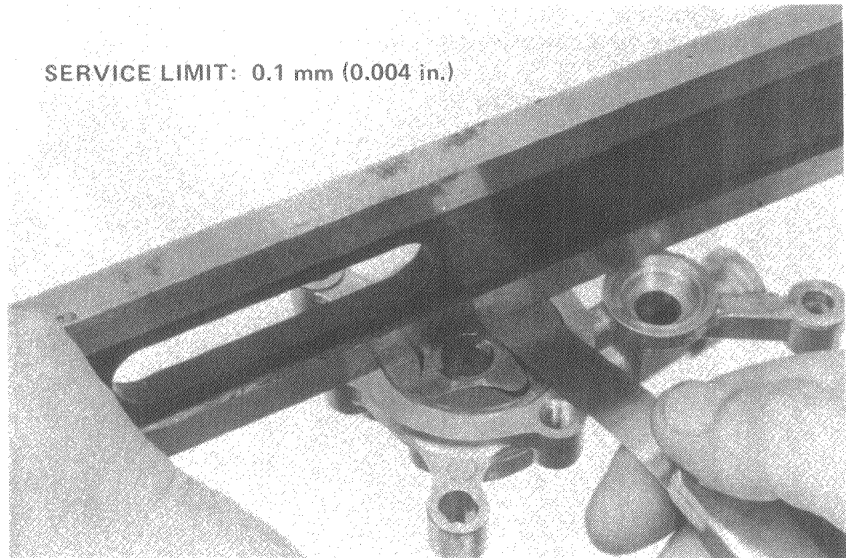
Measure the pump body clearance.

SERVICE LIMIT: 0.35 mm (0.014 in.)



Measure the pump end clearance with a straight edge and feeler gauge.

SERVICE LIMIT: 0.1 mm (0.004 in.)

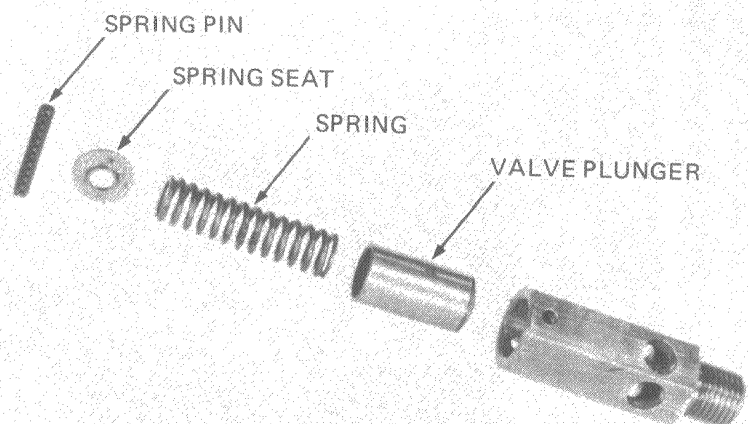


#### ● RELIEF VALVE INSPECTION

Remove the valve as an assembly and check its operation.

If the valve does not operate properly, disassemble it and check for a stuck valve or weak spring.

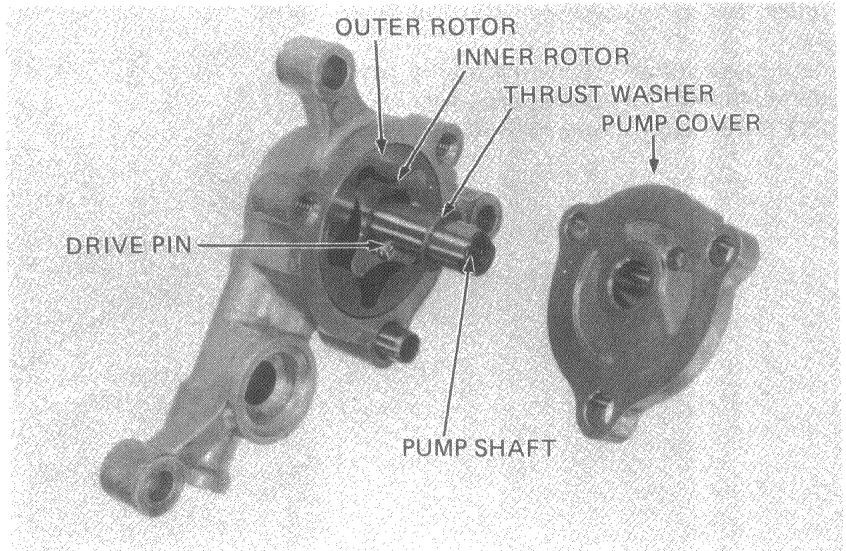
Replace the relief valve as a unit if the spring or plunger is damaged.



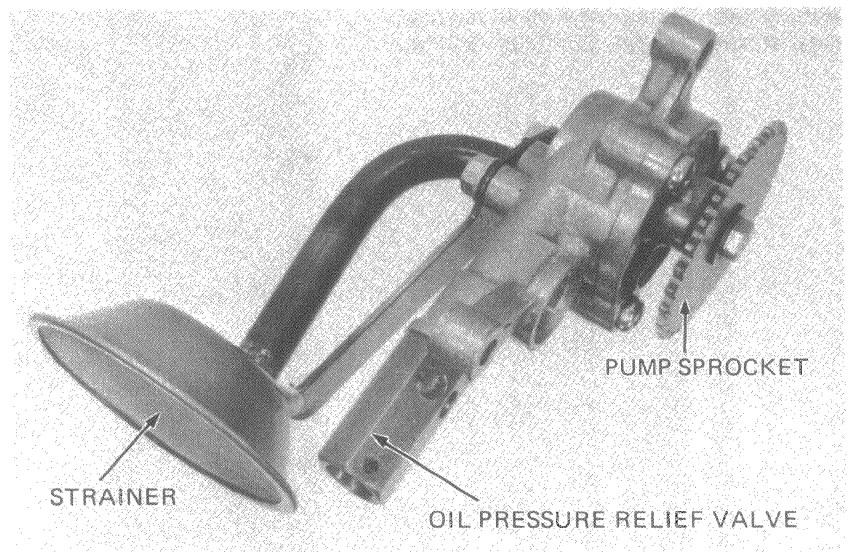


### • OIL PUMP ASSEMBLY

Insert the outer and inner rotors into the pump body.  
 Slide the drive pin into the pump shaft, and install the shaft.  
 Install the thrust washer and drive pin.  
 Install the pump cover.

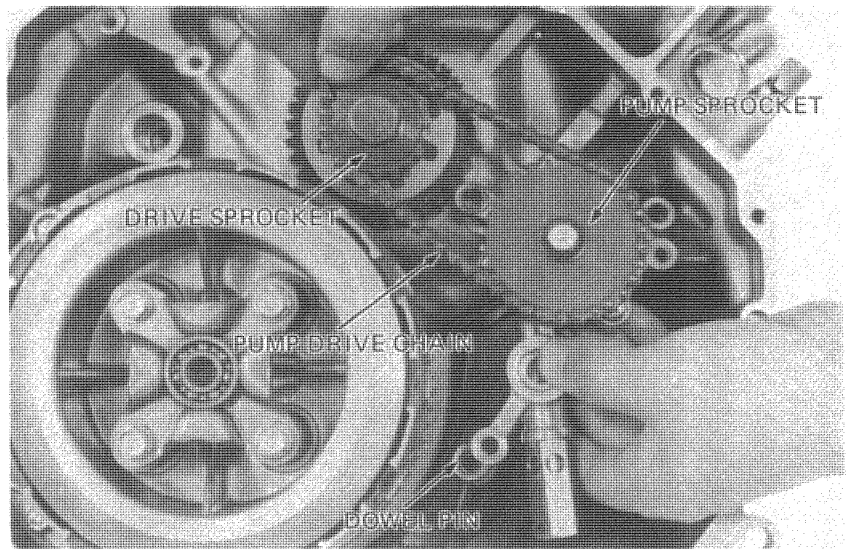


Install the oil strainer.  
 Install the oil pressure relief valve and pump sprocket. Do not tighten at this time.



### OIL PUMP INSTALLATION

Install the dowel pin.  
 Install the oil pump.  
 Do not tighten the mounting bolts at this time.  
 Place the drive chain over the pump and drive sprockets.



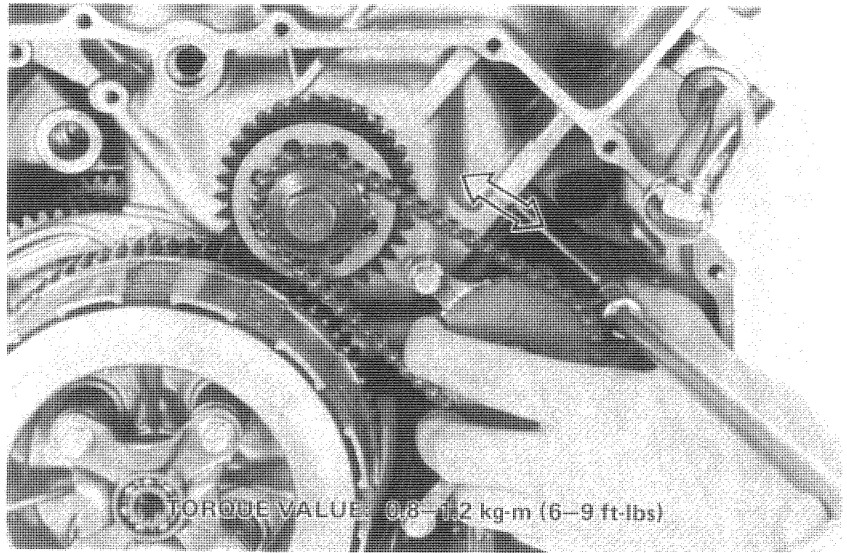


**CLUTCH/OIL PUMP**

Tighten the pump sprocket bolt and relief valve.

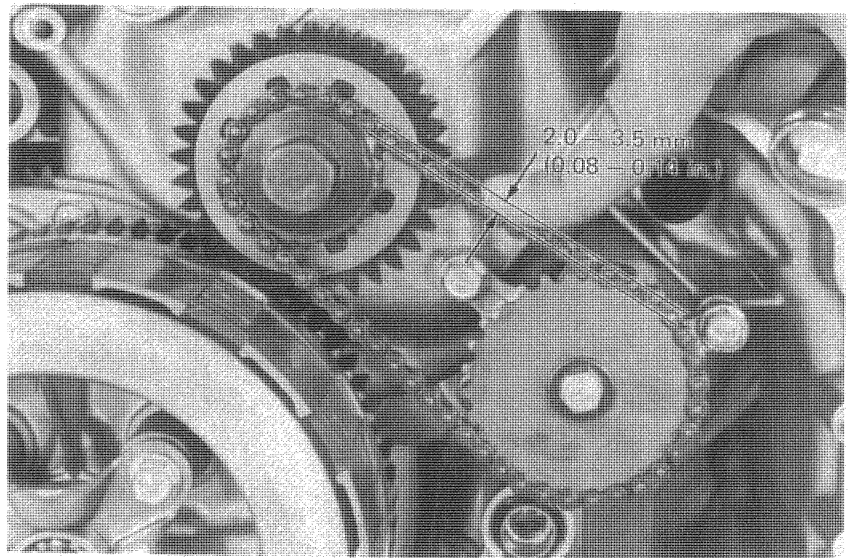
Adjust the chain free play by rotating the pump right or left, then torque the pump bolts.

**FREE PLAY: 2.0–3.5 mm (0.8–0.14 in)**

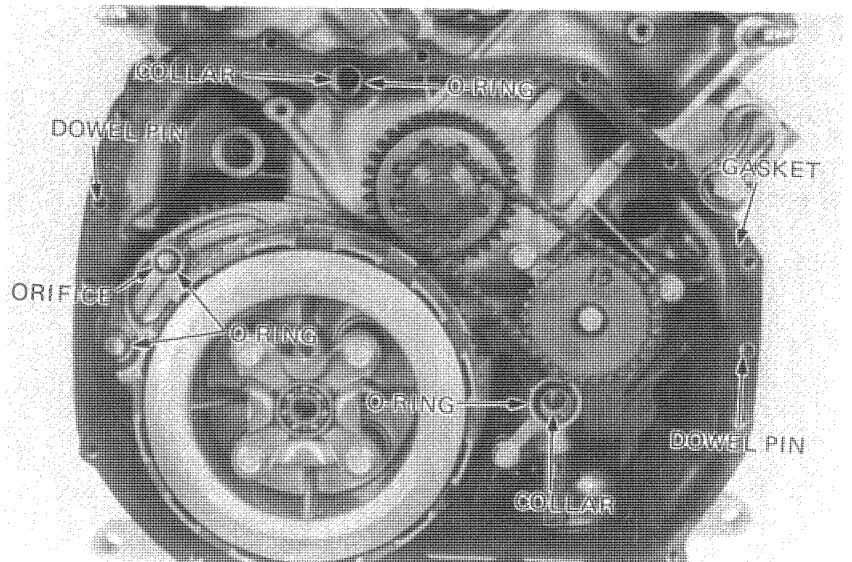


Recheck the oil pump drive chain free play.

**FREE PLAY: 2.0–3.5 mm (0.08–0.14 in.)**

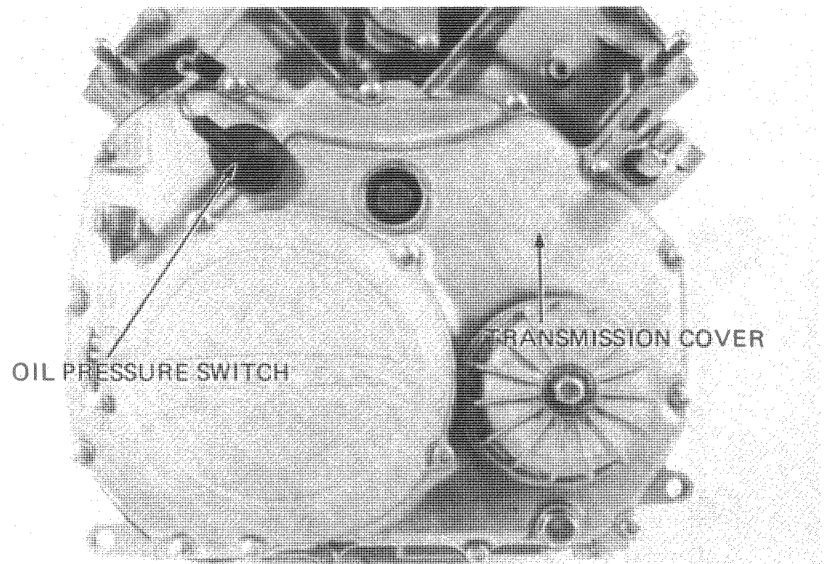


Install the dowel pins, collars, O-rings and gasket.

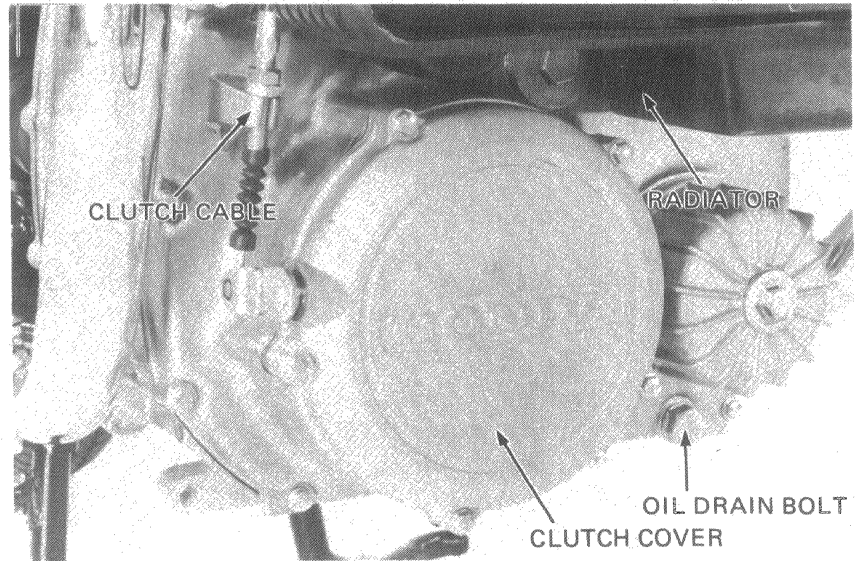


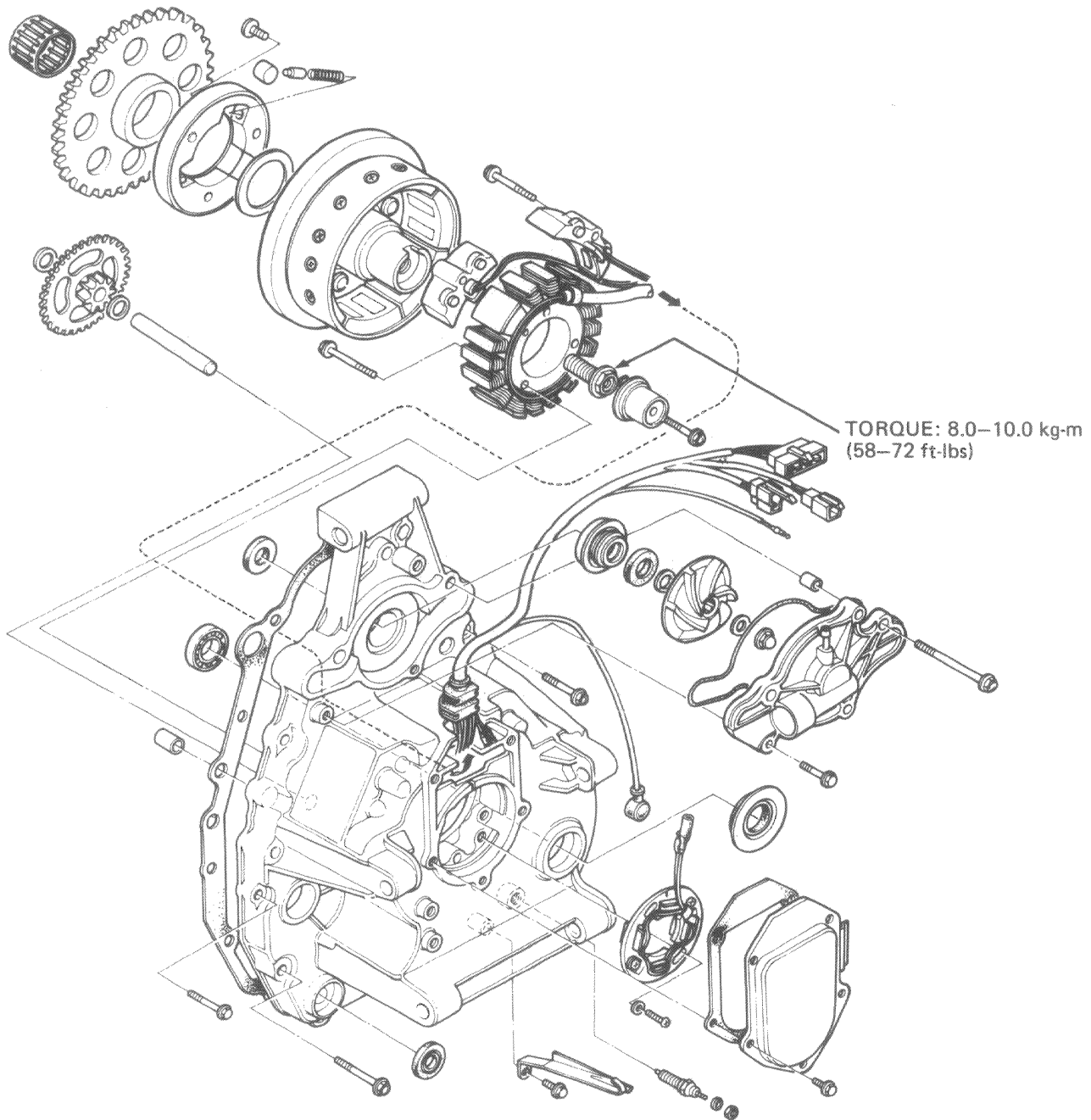


Install the transmission cover.  
Connect the oil pressure switch.



Connect the clutch cable.  
Adjust the clutch free play.  
Install the radiator and fill to the proper level  
with coolant.





TORQUE: 8.0-10.0 kg-m  
(58-72 ft-lbs)