

- Use a thickness gauge to measure the thrust clearance at some places between right crankcase and thrust washer.

Standard

**Crankshaft thrust clearance: 0.050–0.110 mm
(0.0020–0.0043 in)**

TOOL 09900-20803: Thickness gauge

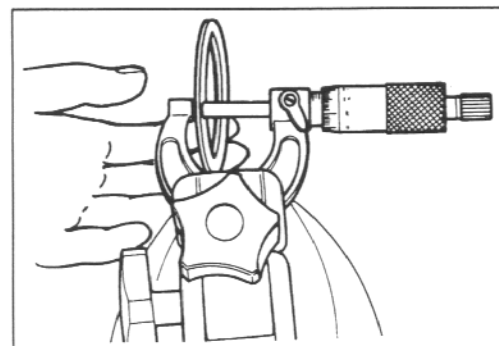
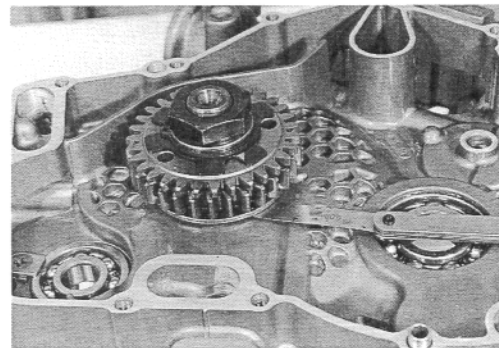
If the thrust clearance exceeds the standard range, adjust the thrust clearance by the following procedures:

- Remove the thrust shim, and measure its thickness with a micrometer.
- Change the thrust shim with the other shim if the thrust clearance is incorrect.
- Perform the thrust clearance measurement described above once again checking to make sure it is within standard.

TOOL 09900-20205: Micrometer (0–25 mm)

Unit: mm (in)

Part number	Thrust shim thickness
09160-48001	1.925–1.950 (0.0758–0.0768)
09160-48002	1.950–1.975 (0.0768–0.0778)
09160-48003	1.975–2.000 (0.0778–0.0787)
09160-48004	2.000–2.025 (0.0787–0.0797)
09160-48005	2.025–2.050 (0.0797–0.0807)
09160-48006	2.050–2.075 (0.0807–0.0817)
09160-48007	2.075–2.100 (0.0817–0.0827)
09160-48008	2.100–2.125 (0.0827–0.0837)
09160-48009	2.125–2.150 (0.0837–0.0846)
09160-48010	2.150–2.175 (0.0846–0.0856)

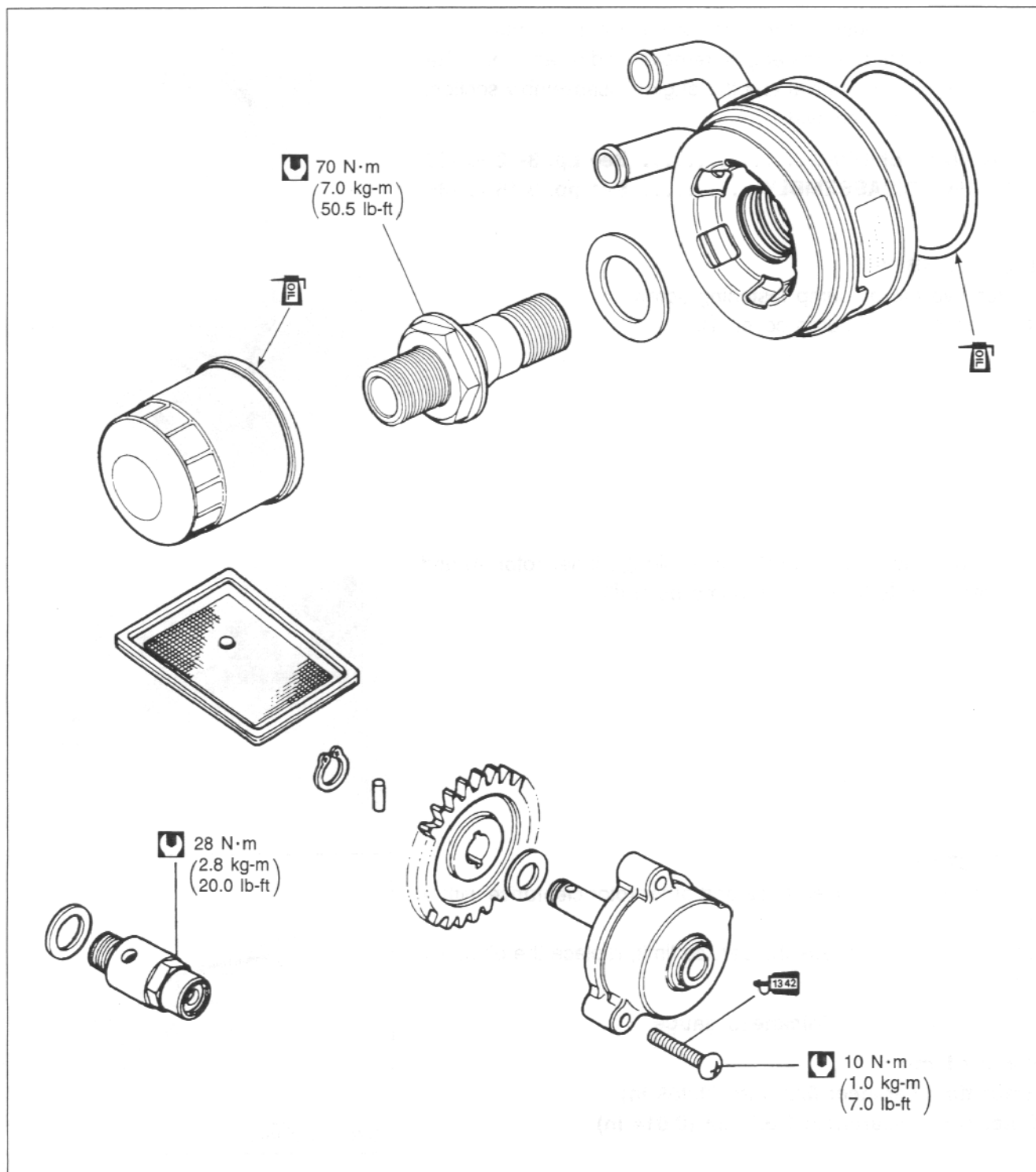


**TRANSMISSION/CRANKSHAFT/CONROD
INSTALLATION**

Refer to the engine reassembly and the engine installation sections for these engine components installation.

- * **ENGINE REASSEMBLY** See pp. 3-37 to -78.
- * **ENGINE INSTALLATION** See pp. 3-11 to -15.

ENGINE LUBRICATION SYSTEM



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OIL PUMP REMOVAL

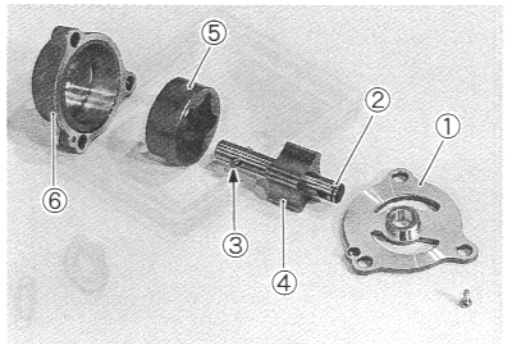
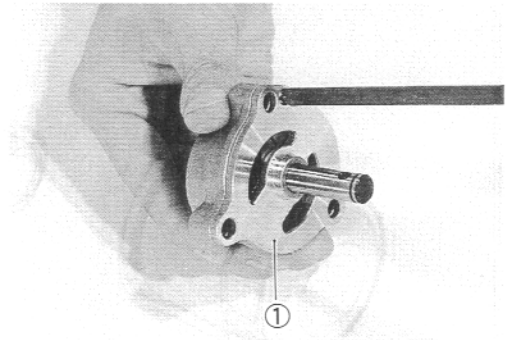
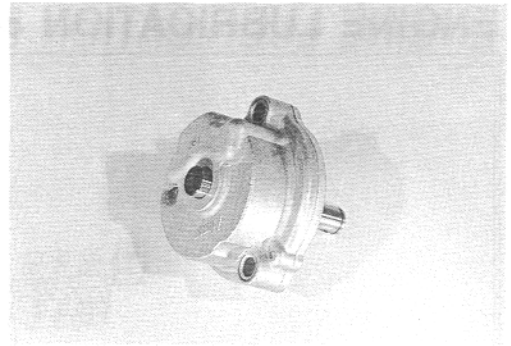
The crankcase must be separated to service the oil pump. The oil pump service requires engine removal and disassembly. Refer to the engine removal and the engine disassembly sections for the oil pump removal.

- * **ENGINE REMOVAL** See pp. 3- 2 to -10.
- * **ENGINE DISASSEMBLY** See pp. 3-16 to -35.

DISASSEMBLY

- Remove the oil pump fastening screw.
- Remove the oil pump cover ①.


- Remove the rotor shaft ②, drive pin ③, inner rotor ④ and outer rotor ⑤ from the oil pump body ⑥.



INSPECTION

Inspect the rotor tip clearance and outer rotor clearance with a thickness gauge.

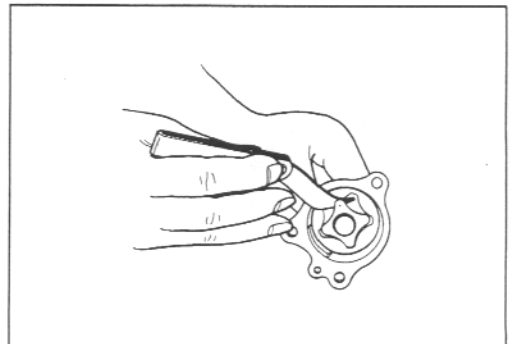
If the clearance exceeds the service limit, replace the oil pump with a new one.

 **09900-20803: Thickness gauge**

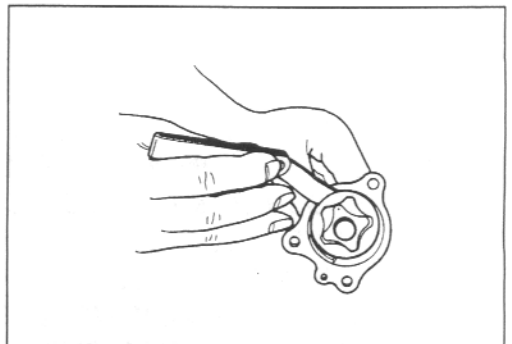
Service Limit

Rotor tip clearance: 0.20 mm (0.008 in)

Outer rotor clearance: 0.35 mm (0.014 in)



(Rotor tip clearance)



(Outer rotor clearance)

REASSEMBLY AND INSTALLATION

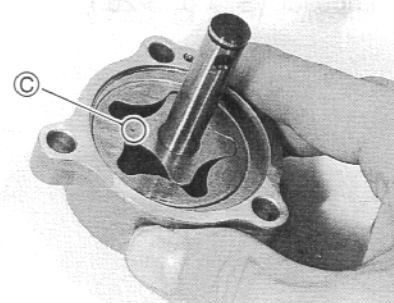
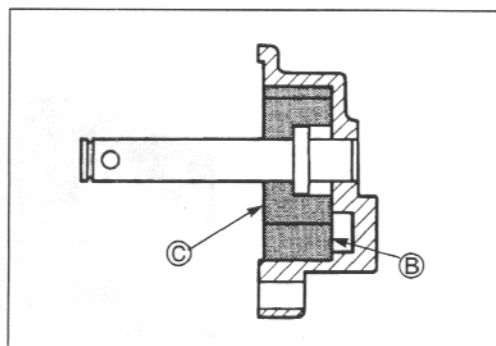
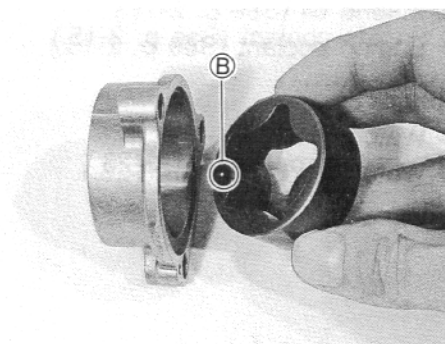
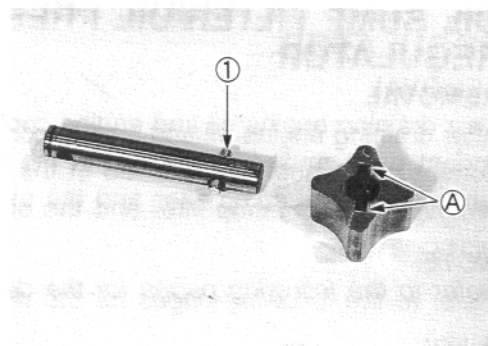
▲ CAUTION

Wash the oil pump parts with fresh engine oil before reassembly.

- Insert the rotor shaft into the inner rotor by aligning the drive pin ① with a slot ② in the inner rotor.
- Install the outer rotor and inner rotor into the oil pump body.

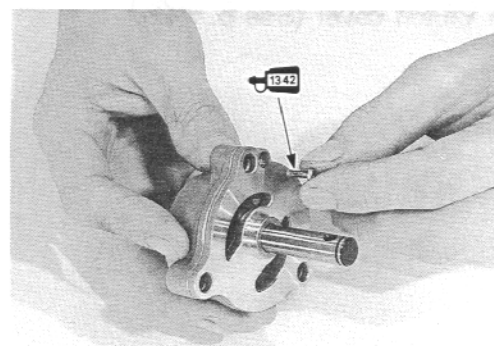
NOTE:

Position the punched mark ③ on the outer rotor to be faced to the oil pump body side and punched mark ④ on the inner rotor to the oil pump cover side.



- Apply a small quantity of THREAD LOCK "1342" to the screw and tighten it.

 99000-32050: THREAD LOCK "1342"



- Refer to the engine reassembly and the engine installation sections for the oil pump installation.
- * **ENGINE REASSEMBLY** See pp. 3-37 to -78.
- * **ENGINE INSTALLATION** See pp. 3-11 to -15.