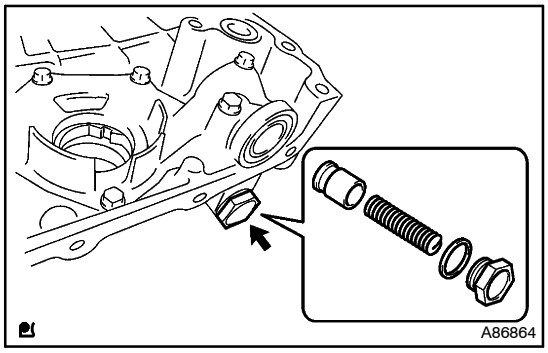
170NR–02

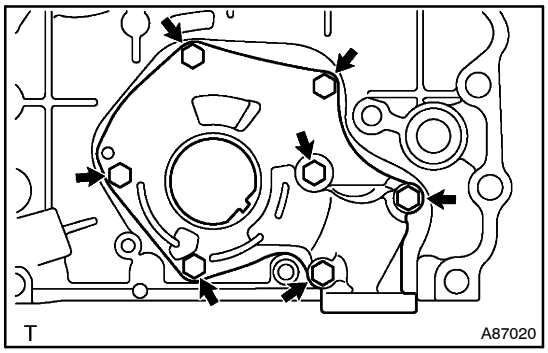
OVERHAUL



1. REMOVE OIL PUMP RELIEF VALVE

(a) Using a 27 mm socket wrench, remove the relief valve plug and gasket.

(b) Remove the valve spring and oil pump relief valve.

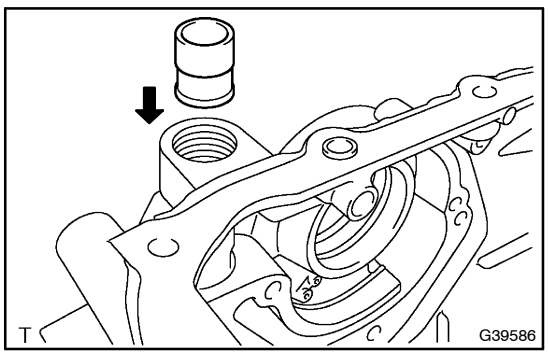


2. REMOVE OIL PUMP COVER

(a) Remove the 7 bolts and oil pump cover.

3. REMOVE OIL PUMP ROTOR SET

(a) Remove the oil pump rotor set from the timing chain cover.

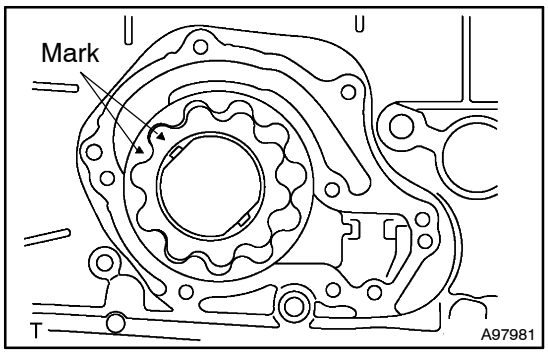


4. INSPECT OIL PUMP RELIEF VALVE

(a) Coat the relief valve with engine oil and drop it into the relief valve hole.

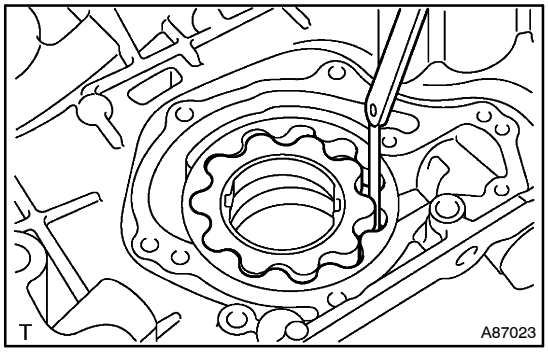
(b) Check that the relief valve falls in smoothly by its own weight.

If it does not, replace the relief valve. If necessary, replace the timing chain cover.



5. INSPECT OIL PUMP ROTOR SET

(a) Install the rotors to the timing chain cover with the rotors' marks facing outward. Check that the rotors revolves smoothly.



6. INSPECT ROTOR TIP CLEARANCE

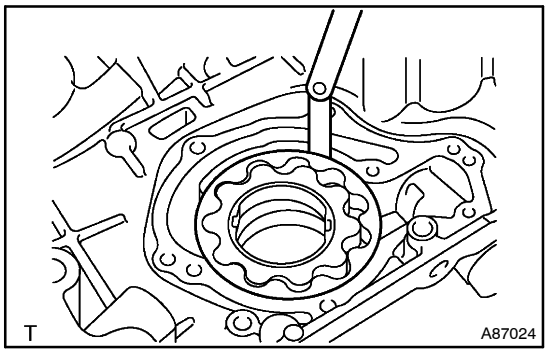
(a) Check the tip clearance.

(1) Using a feeler gauge, measure the clearance between the drive and driven rotor tips, as shown in the illustration.

Tip clearance:

Standard	0.040 to 0.160 mm (0.0016 to 0.0063 in.)
Maximum	0.26 mm (0.0102 in.)

If the tip clearance is greater than the maximum, replace the timing chain cover.



7. INSPECT ROTOR BODY CLEARANCE

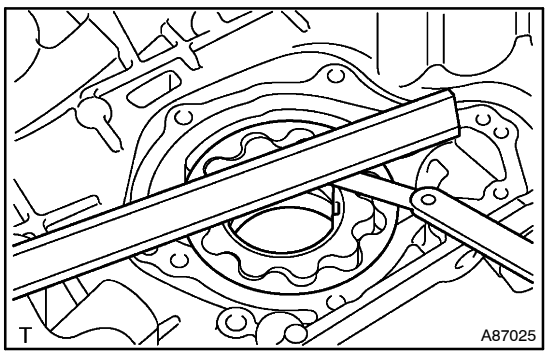
(a) Check the body clearance.

(1) Using a feeler gauge, measure the clearance between the timing chain cover and driven rotor, as shown in the illustration.

Body clearance:

Standard	0.250 to 0.325 mm (0.0098 to 0.0128 in.)
Maximum	0.425 mm (0.0167 in.)

If the body clearance is greater than the maximum, replace the timing chain cover.



8. INSPECT ROTOR SIDE CLEARANCE

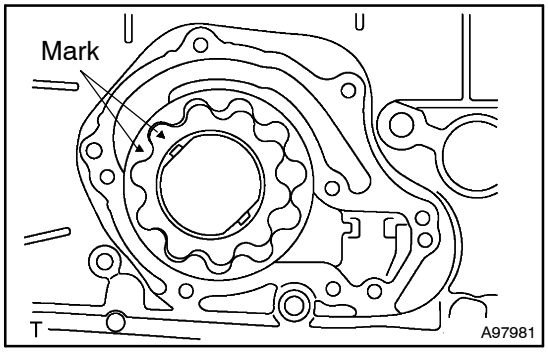
(a) Check the side clearance.

(1) Using a feeler gauge and precision straight edge, measure the clearance between the rotors and precision straight edge, as shown in the illustration.

Side clearance:

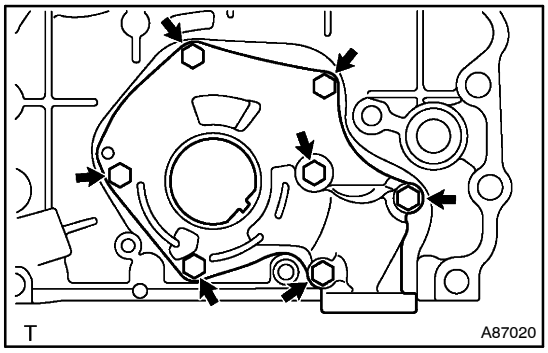
Standard	0.025 to 0.075 mm (0.0010 to 0.0030 in.)
Maximum	0.130 mm (0.0051 in.)

If the side clearance is greater than the maximum, replace the timing chain cover.



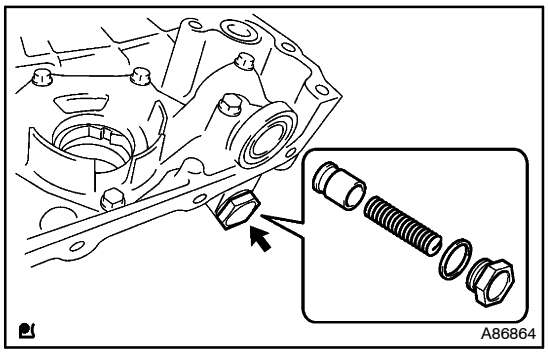
9. INSTALL OIL PUMP ROTOR SET

(a) Coat the oil pump gear set with engine oil and place it into timing chain cover with the marks facing outward (oil pump cover side). Check that the rotors revolve smoothly.



10. INSTALL OIL PUMP COVER

(a) Install the oil pump cover with the 7 bolts.
Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)



11. INSTALL OIL PUMP RELIEF VALVE

(a) Coat the oil pump relief valve with engine oil.
(b) Insert the relief valve and relief valve spring into the timing chain cover hole.
(c) Install a new gasket to the relief valve plug.
(d) Using a 27 mm socket wrench, install the plug.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)