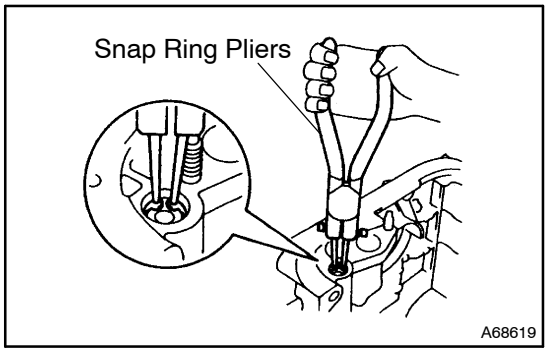
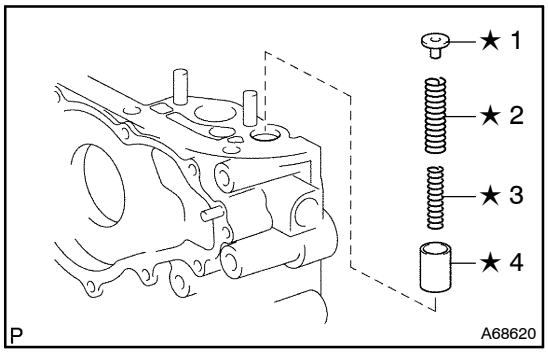
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OVERHAUL

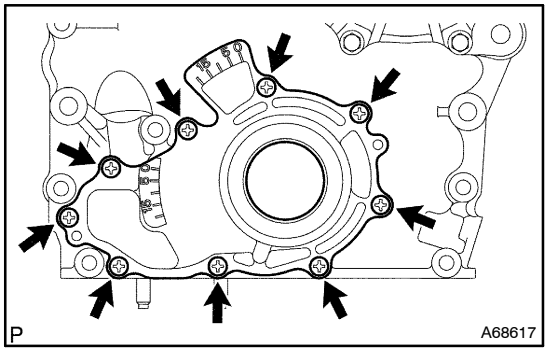


1. REMOVE OIL PUMP RELIEF VALVE

(a) Using a snap ring pliers, remove the snap ring.

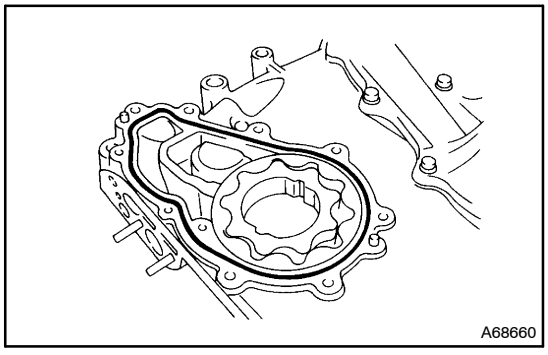


(b) Remove the oil pump relief valve retainer (★ 1), oil pump relief valve spring No. 2 (★ 2), oil pump relief valve spring No. 1 (★ 3) and oil pump relief valve (★ 4).

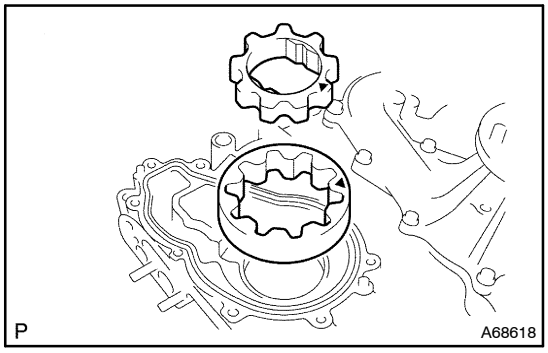


2. REMOVE OIL PUMP COVER

(a) Remove the 9 screws and oil pump cover.

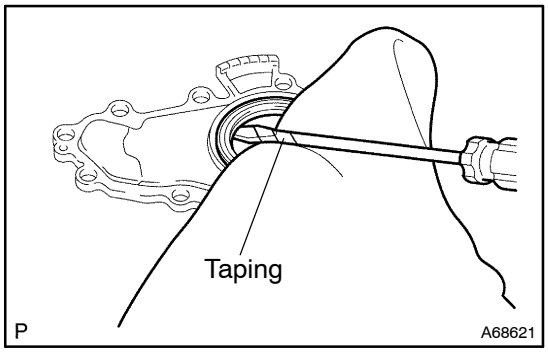


(b) Remove an O–ring from the timing gear case.



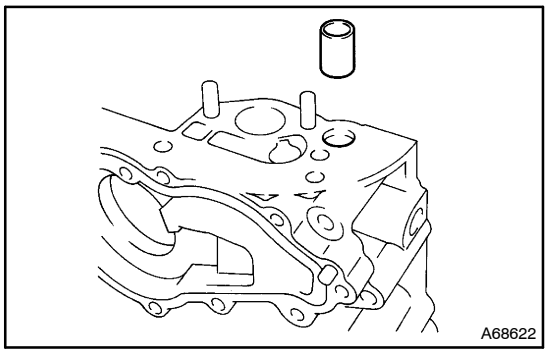
3. REMOVE OIL PUMP ROTOR SET

(a) Remove the oil pump rotor set from the timing gear case.



4. REMOVE TIMING GEAR CASE OR TIMING CHAIN CASE OIL SEAL

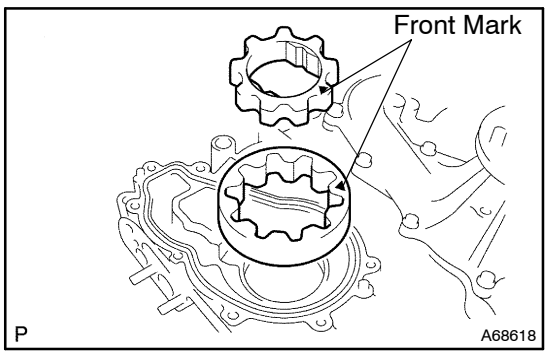
(a) Using a screwdriver with taping its tip, remove an oil seal.



5. INSPECT OIL PUMP RELIEF VALVE

(a) Coat the oil pump relief valve with engine oil and check that it falls smoothly into the valve hole by its own weight.

If it does not, replace the oil pump relief valve. If necessary, replace the oil pump assembly.

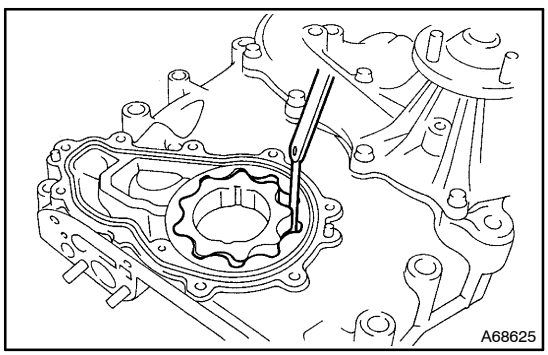


6. INSPECT OIL PUMP ROTOR SET

(a) Apply the engine oil to the oil pump rotor set.

(b) Place the oil pump rotor set into the timing gear case with the front mark outward

(c) Check that the oil pump rotor set moves smoothly.



7. INSPECT ROTOR TIP CLEARANCE

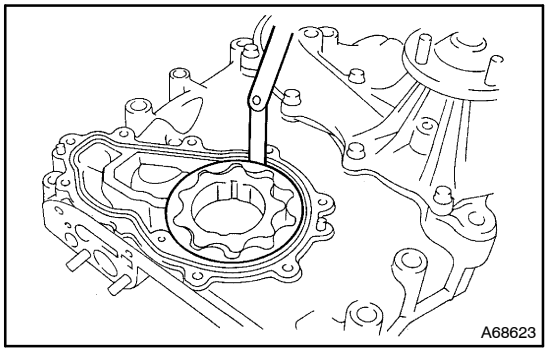
(a) Using a feeler gauge, measure the clearance between the drive and driven rotor tips.

Standard tip clearance:

0.110 – 0.240 mm (0.0043 – 0.0095 in.)

Maximum tip clearance: 0.250 mm (0.0098 in.)

If the tip clearance is greater than maximum, replace the oil pump rotor set.

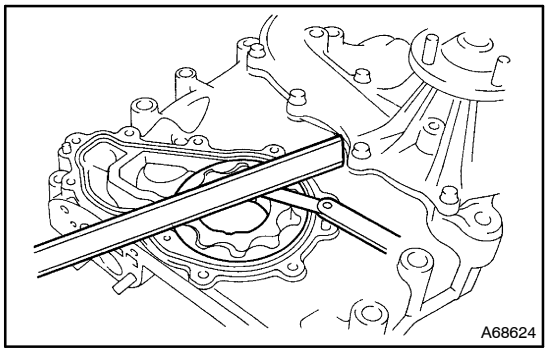


8. INSPECT ROTOR BODY CLEARANCE

(a) Using a feeler gauge, measure the clearance between the driven rotor and body.

Standard body clearance:
0.100 – 0.175 mm (0.0039 – 0.0069 in.)
Maximum body clearance: 0.300 mm (0.0118 in.)

If the body clearance is greater than maximum, replace the oil pump rotor set. If necessary, replace the oil pump assembly.

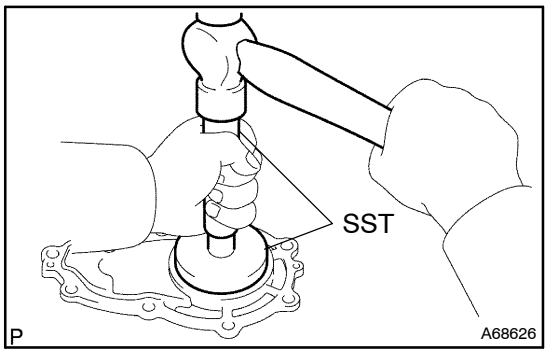


9. INSPECT ROTOR SIDE CLEARANCE

(a) Using a precision straight edge and feeler gauge, measure the clearance between the oil pump rotor set and precision straight edge.

Standard side clearance:
0.030 – 0.090 mm (0.0012 – 0.0035 in.)
Maximum side clearance: 0.150 mm (0.0059 in.)

If the side clearance is greater than maximum, replace the oil pump rotor set. If necessary, replace oil pump assembly.

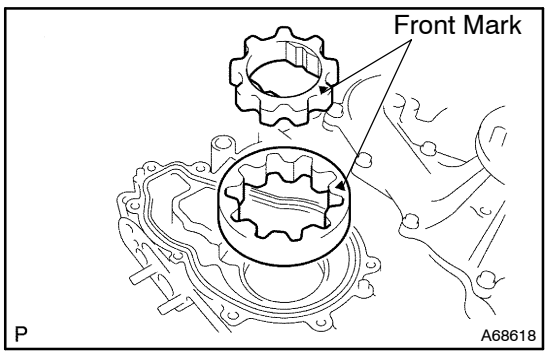


10. INSTALL TIMING GEAR CASE OR TIMING CHAIN CASE OIL SEAL

(a) Using SST, tap in a new oil seal until its surface is flush with the oil pump cover edge.

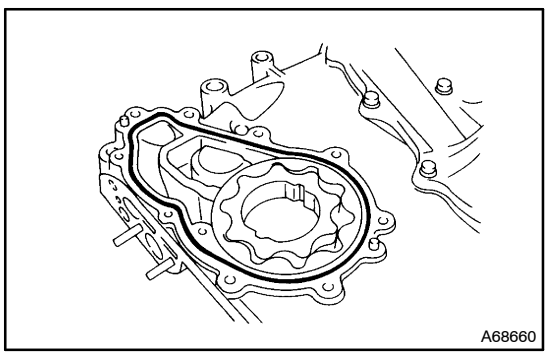
SST 09950–60010 (09951–00480, 09951–00710, 09952–06010), 09950–70010 (09951–07100)

(b) Apply Mp grease to the oil seal lip.



11. INSTALL OIL PUMP ROTOR SET

(a) Place the oil pump rotor set into the timing gear case with the front mark outward.

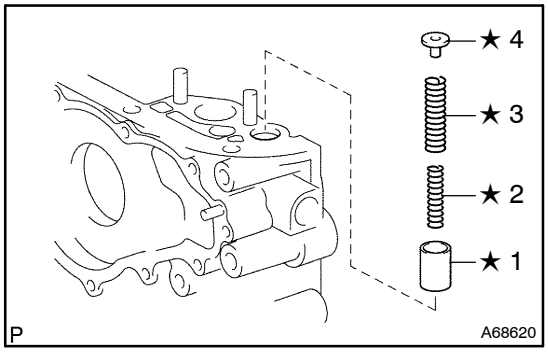


12. INSTALL OIL PUMP COVER

(a) Place a new O–ring to the timing gear case.

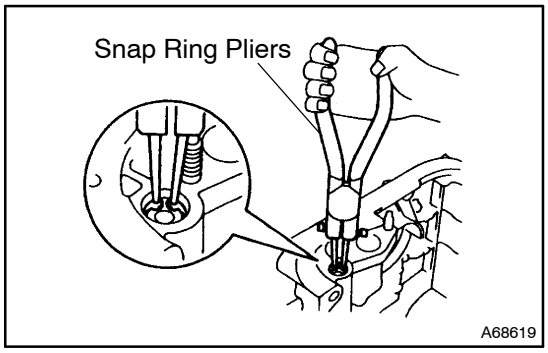
(b) Install the oil pump cover with the 9 screws.

Torque: 10 N·m (105 kgf·cm, 8 ft·lbf)



13. INSTALL OIL PUMP RELIEF VALVE

(a) Install the oil pump relief valve (★ 1), oil pump relief valve spring No. 1 (★ 2), oil pump relief valve spring No. 2 (★ 3) and oil pump relief valve retainer (★ 4).



(b) Using a snap ring pliers, install the snap ring.