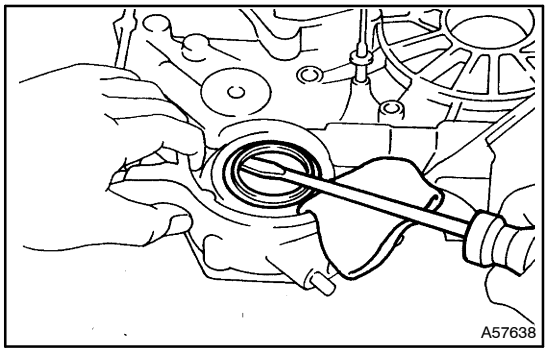
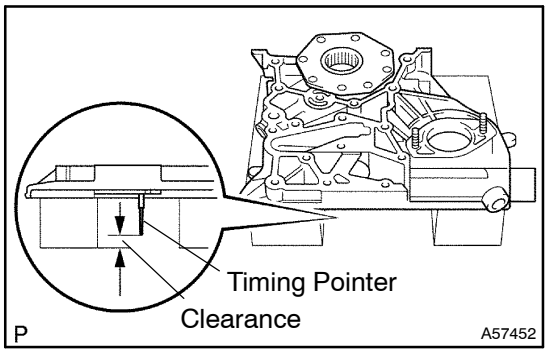
170BU–01

OVERHAUL



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

(a) Using a screwdriver and hammer, tap out the oil seal.

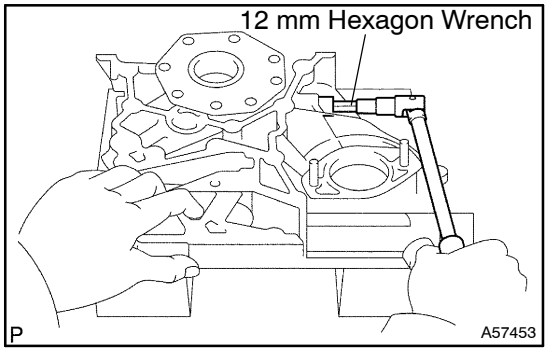


2. REMOVE OIL PUMP RELIEF VALVE

(a) Place the timing belt case on wooden blocks.

NOTICE:

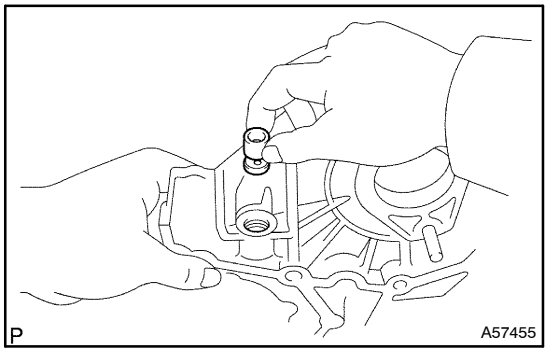
Be careful not to damage the timing pointer.



(b) Using a 12 mm hexagon wrench, remove the plug, gasket, spring and relief valve.

3. REMOVE OIL PUMP DRIVE GEAR

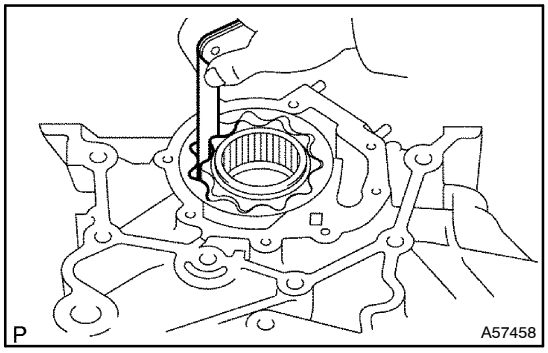
(a) Remove the 8 screws, pump body cover, the drive and driven rotors.



4. INSPECT OIL PUMP RELIEF VALVE

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

If it doesn't, replace the relief valve. If necessary, replace the oil pump assembly.



5. INSPECT OIL PUMP DRIVE GEAR

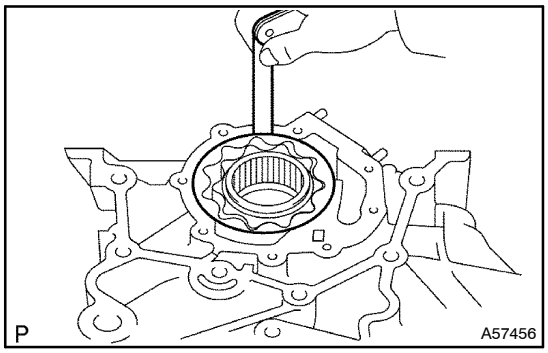
(a) Insert the drive and driven rotors into timing belt case with the marks facing the pump body cover side (See step 6).

(b) Inspect the rotor tip clearance.

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

Standard tip clearance:
0.110 – 0.240 mm (0.0043 – 0.0094 in.)
Maximum tip clearance: 0.30 mm (0.0118 in.)

If the tip clearance is greater than maximum, replace the rotors as set.

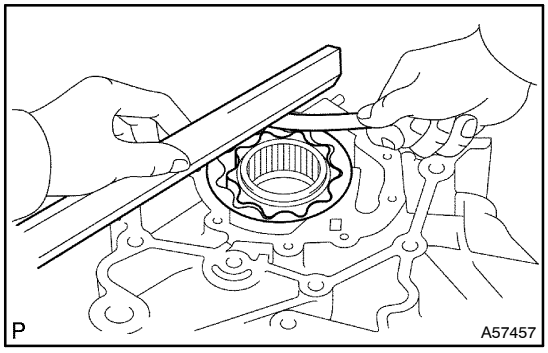


(c) Inspect the rotor body clearance.

(1) Using a feeler gauge, measure the clearance between the driven rotor and gear case.

Standard body clearance:
0.144 – 0.219 mm (0.0057 – 0.0086 in.)
Maximum body clearance: 0.40 mm (0.0157 in.)

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

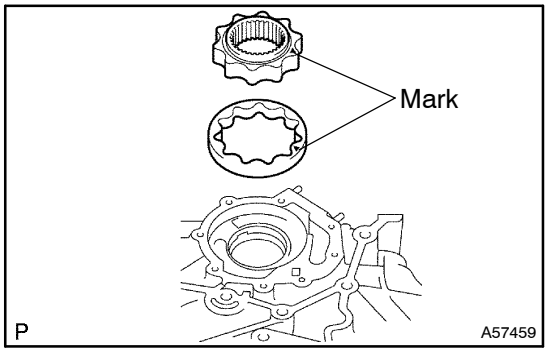


(d) Inspect the rotor side clearance.

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

Standard side clearance:
0.035 – 0.085 mm (0.014 – 0.0033 in.)
Maximum side clearance: 0.15 mm (0.0059 in.)

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

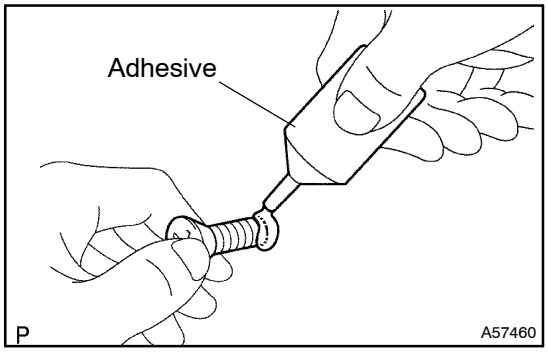


6. INSTALL OIL PUMP DRIVE GEAR

(a) Place the timing belt case on wooden blocks (See step 2).

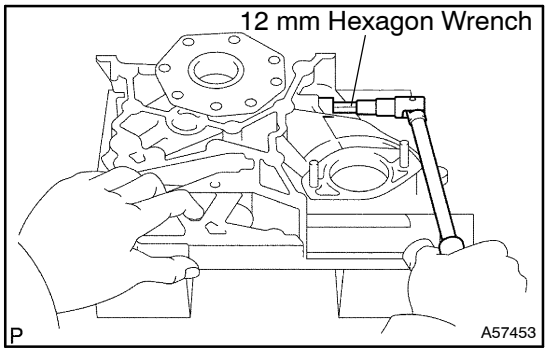
NOTICE:
Be careful not to damage the timing pointer.

(b) Insert the drive and driven rotors into timing belt case with the marks facing the oil pump cover side.



(c) Apply adhesive to 2 or 3 threads of the screws.
Adhesive:
Part No. 08833–00080, THREE BOND 1344 LOCTITE 242 or equivalent

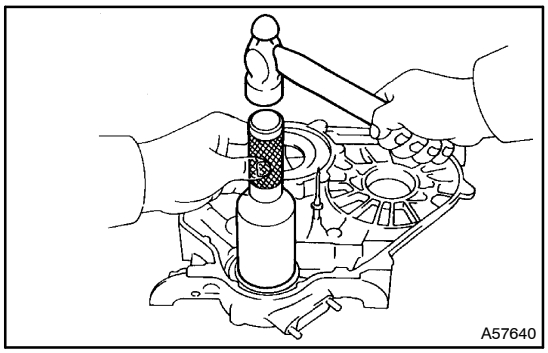
(d) Install the oil pump cover with the 8 screws.
Torque: 10 N·m (105 kgf·cm, 7 ft·lbf)



7. INSTALL OIL PUMP RELIEF VALVE

(a) Insert the relief valve and spring into the installation hole of the timing belt case.

(b) Using a 12 mm hexagon wrench, install a new gasket and the plug.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)



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

(a) Using SST and a hammer, tap in a new oil seal to the depth of 0.5 mm (0.020 in.) from the oil pump case edge.
SST 09214–60010

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