EM1TP–01

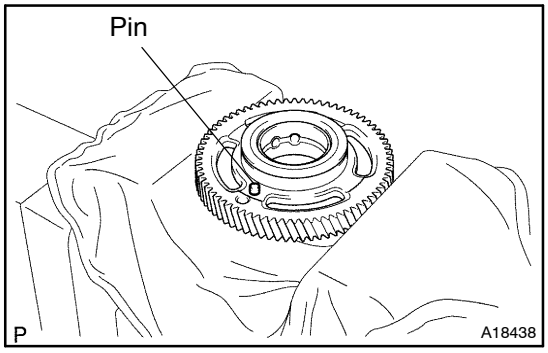
INSTALLATION

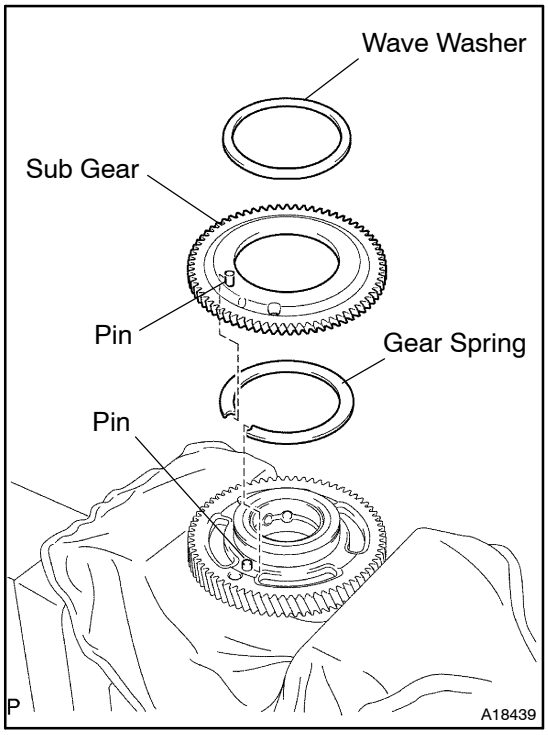
1. ASSEMBLE IDLER GEARS (MAIN GEAR AND SUB–GEAR)

(a) Mount the idler gear in a vise as shown in the illustrtation.

NOTICE:

Be careful not to damage the gear.





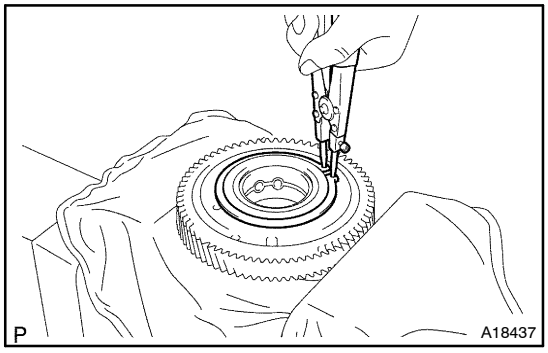
(b) Install the gear spring.

(c) Install the sub gear.

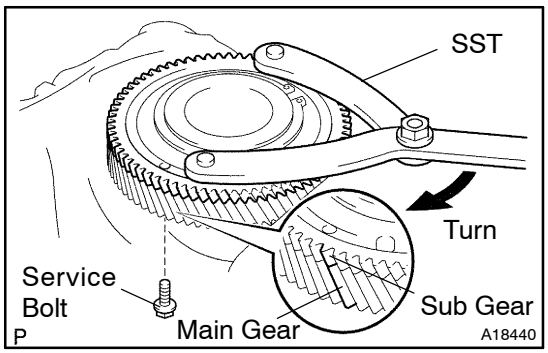
HINT:

Align the pins on the gears with the spring ends.

(d) Install the wave washer.



(e) Using snap ring pliers, install the snap ring.



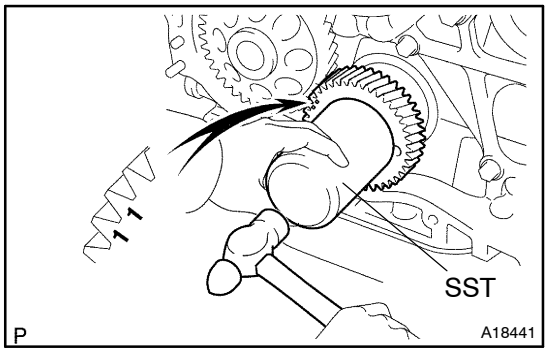
(f) Using SST, align the holes of the idler gear and sub gear by turning the sub gear clockwise, and install a service bolt.

Recommended service bolt:

Thread diameter	6 mm
Thread pitch	1.0 mm
Bolt length	Approx. 19 mm (0.75 in.)

SST 09960–10010 (09962–01000, 09963–00700)

(g) Align the gear teeth of the main gear sub gear, and tighten the service bolt.

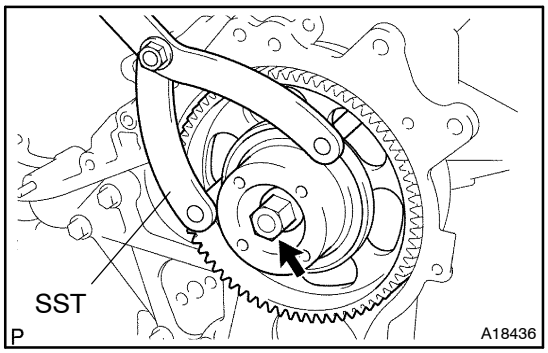


2. INSTALL CRANKSHAFT TIMING GEAR

(a) Face the crankshaft timing gear with timing mark 1 facing the forward.

(b) Align the set key on the crankshaft with the key groove of the crankshaft timing gear.

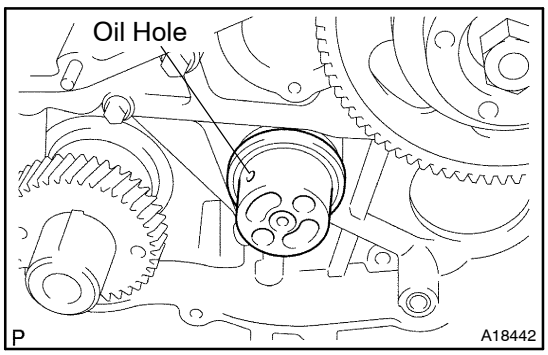
(c) Using SST and a hammer, tap in the timing gear.
SST 09223–00010



3. INSTALL SUPPLY PUMP DRIVE GEAR

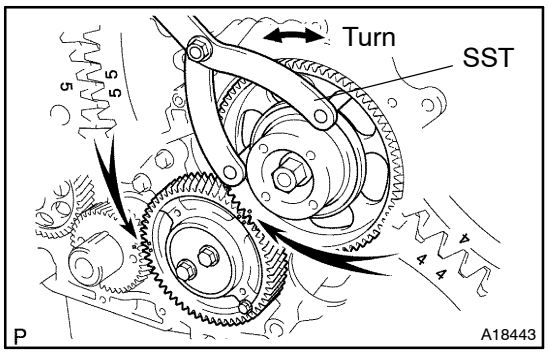
Using SST, install the drive gear and a new O–ring with the cap nut.

SST 09960–10010 (09962–01000, 09963–01000)
Torque: 64 N·m (652 kgf·cm, 47 ft·lbf)



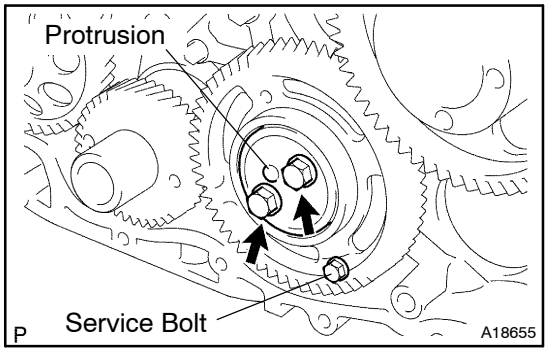
4. INSTALL IDLER GEAR ASSEMBLY

(a) Install the gear shaft as shown in the illustration.



(b) Align timing marks 5 of the idler gear and crankshaft timing gear

(c) Using SST, turn the drive gear, and align timing marks 4 of the idler gear and drive gear, and mesh the gears.
SST 09960–10010 (09962–01000, 09963–01000)

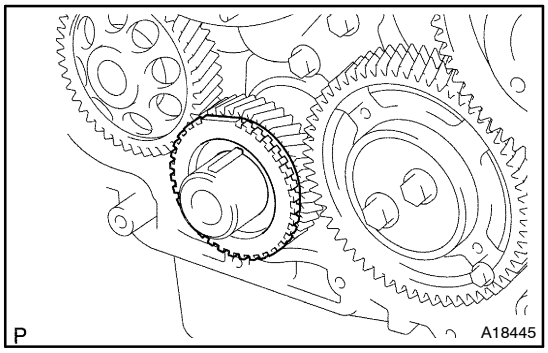


(d) Face the thrust plate with the protrusion facing the forward.

(e) Align the bolt holes, and Install the thrust plate with the 2 bolts.

Torque: 50 N·m (510 kgf·cm, 37 ft·lbf)

(f) Remove the service bolt.



5. INSTALL CRANKSHAFT POSITION SENSOR PLATE

(a) Align the set key with the key groove of the sensor plate.

(b) Install the sensor plate, facing the cup side outward.

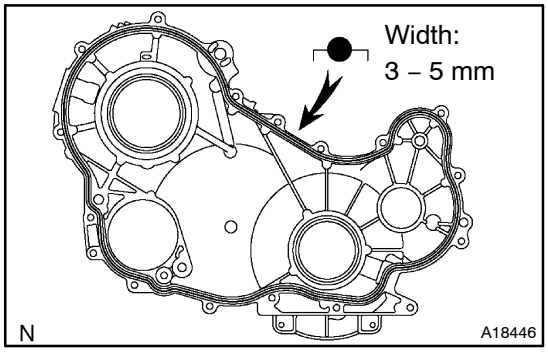
6. INSTALL TIMING GEAR COVER

(a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the timing gear cover and cylinder block.

(1) Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.

(2) Thoroughly clean all components to remove all the loose material.

(3) Using a non–residue solvent, clean both sealing surfaces.



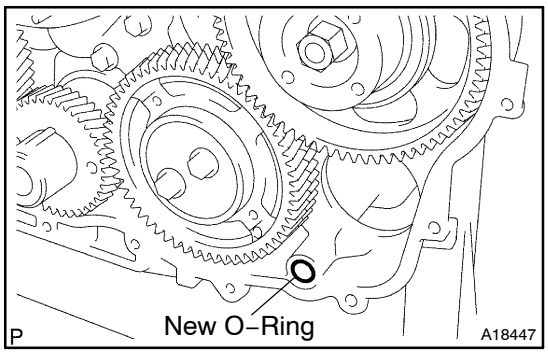
(b) Apply seal packing to the timing gear cover as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent

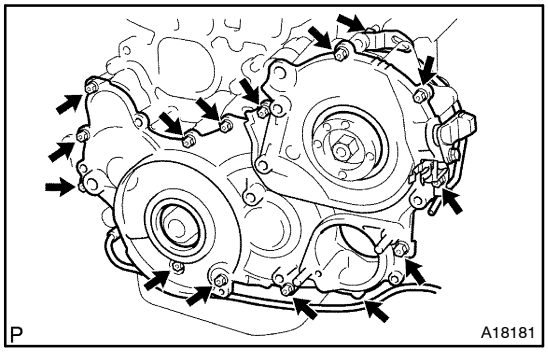
(1) Install a nozzle that has been cut to a 3 – 5 mm (0.12 – 0.20 in.) opening.

(2) Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.

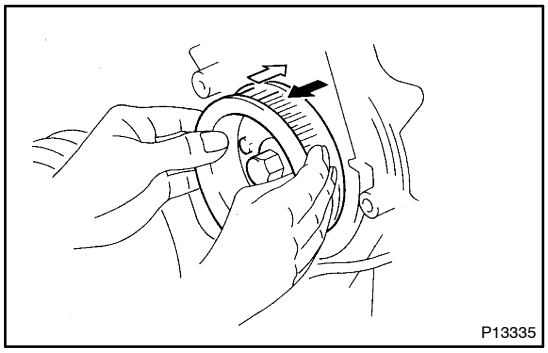
(3) Immediately remove nozzle from the tube and reinstall cap.



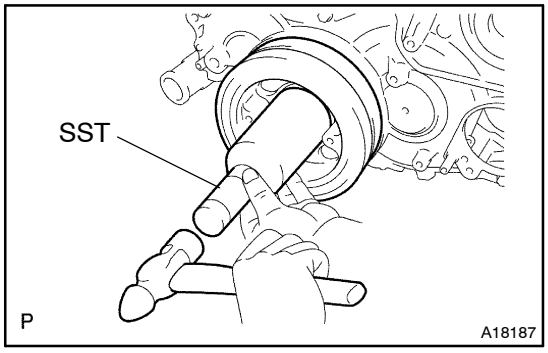
(c) Install a new O–ring to the timing gear case.



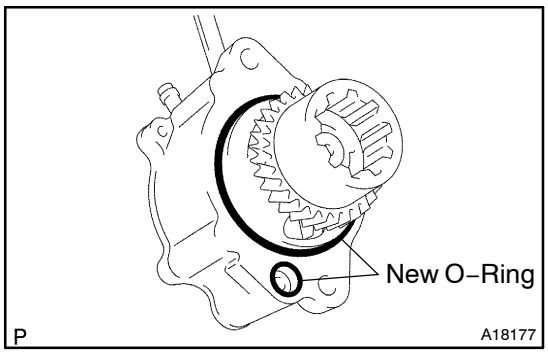
(d) Install the timing gear cover and vacuum pipe with the 14 bolts and 3 nuts.
Torque: 13 N·m (133 kgf·cm, 10 ft·lbf)
(e) Install the crankshaft position sensor connector to the connector bracket on the vacuum pipe.



7. Reference:
CHECK SUPPLY PUMP DRIVE SHAFT THRUST CLEARANCE
(a) Temporarily install the No.2 camshaft timing pulley and flange with the 4 bolts.
(b) Move the No.2 camshaft timing pulley back and forth to check that the supply pump drive shaft has sufficient thrust clearance.
Thrust clearance: 0.15 – 0.55 mm (0.0059 – 0.0217 in.)
If the thrust clearance is not sufficient, loosen the 2 supply pump nuts and 3 pump stay bolts, then retighten them.
If the thrust clearance is still not sufficient, remove the timing gear cover and then reinstall it.



8. INSTALL CRANKSHAFT PULLEY
(a) Align the set key with the key groove of the pulley.
(b) Using SST and a hammer, tap in the pulley.
SST 09214–60010
(c) Temporarily install the pulley bolt.
NOTICE:
Do not turn the crankshaft pulley. The valve heads will hit against the piston top.

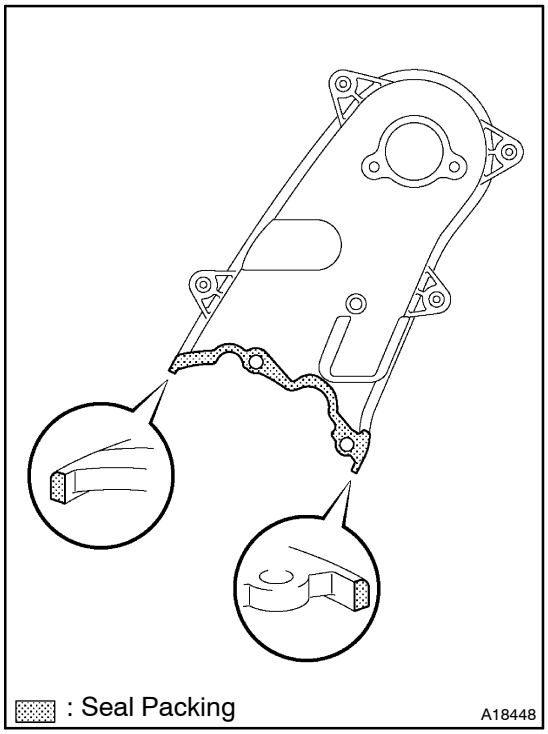


9. INSTALL VACUUM PUMP
(a) Install 2 new O–rings to the vacuum pump.
(b) Install the vacuum pump with the 2 nuts.
Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)
10. INSTALL DRIVE BELT TENSIONER
Install the tesioner with the 4 bolts. Alternately tighten the 4 bolts.
Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)
11. INSTALL ALTERNATOR
Install the alternator with the bracket and 3 bolts.

Torque:
62 N·m (632 kgf·cm, 46 ft·lbf) for tensioner side
21 N·m (214 kgf·cm, 15 ft·lbf) for bracket side

12. INSTALL WATER PUMP PULLEY AND FLUID COUPLING

Install the water pump pulley and fluid coupling with the 4 nuts.



13. INSTALL NO. 2 TIMING BELT COVER

(a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of timing gear cover and timing belt cover.
  (1) Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
  (2) Thoroughly clean all components to remove all the loose material.
  (3) Using a non–residue solvent, clean both sealing surfaces.

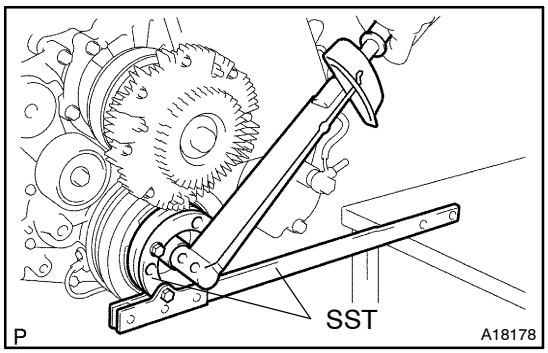
(b) Apply seal packing to the timing gear cover as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent
  (1) Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.
  (2) Immediately remove nozzle from the tube and reinstall cap.

(c) Install the timing belt cover with the 4 bolts and nut.

Torque: 10 N·m (102 kgf·cm, 7 ft·lbf)

14. INSTALL TIMING BELT AND PULLEYS (See page EM–18)



15. TIGHTEN CRANKSHAFT PULLEY BOLT

Using SST, tighten the pulley nut.

SST 09213–58013 (90201–08131, 91111–50845), 09330–00021

Torque: 365 N·m (3,722 kgf·cm, 269 ft·lbf)