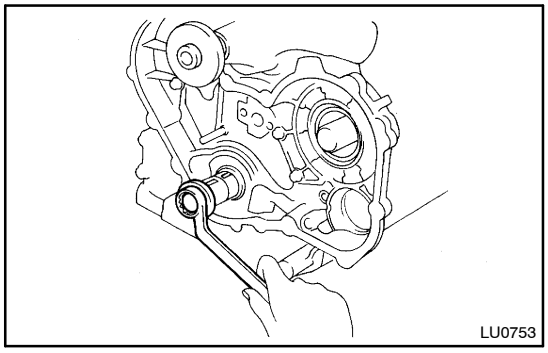
EM1UB–01

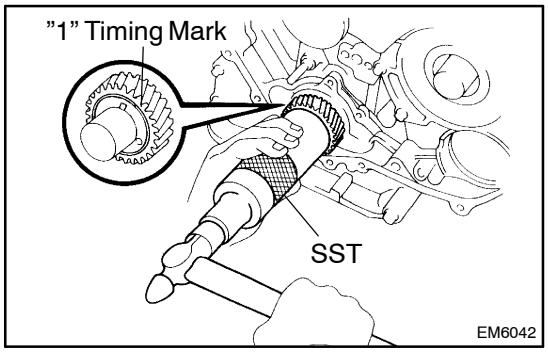
INSTALLATION



1. INSTALL CRANKSHAFT TIMING GEAR

(a) Check the set key on crankshaft facing upward.

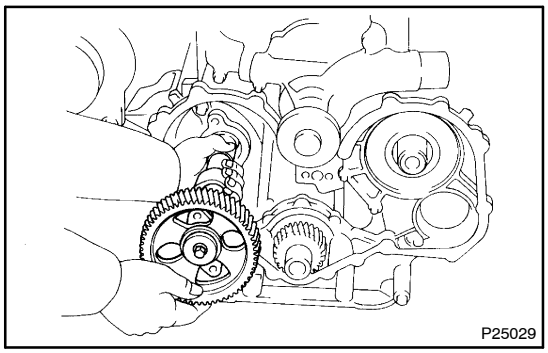
If not, then turn the crankshaft with a crankshaft pulley mount bolt.



(b) Put the timing gear on the crankshaft with the ”1” timing mark of the timing gear facing forward.

(c) Align the timing gear set key with the key groove of the timing gear.

(d) Using SST and a hammer, tap in the timing gear.
SST 09608–06041



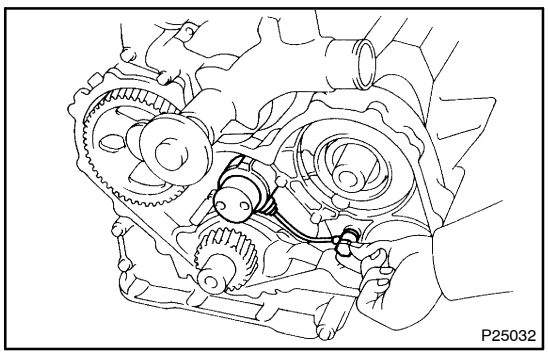
2. INSTALL CAMSHAFT TIMING GEAR AND CAMSHAFT ASSEMBLY

(a) Install the camshaft into the cylinder block.

NOTICE:

Be careful not to damage the camshaft bearing.

(b) Install and torque the 2 bolts.
Torque: 18.5 N·m (189 kgf·cm, 14 ft·lbf)

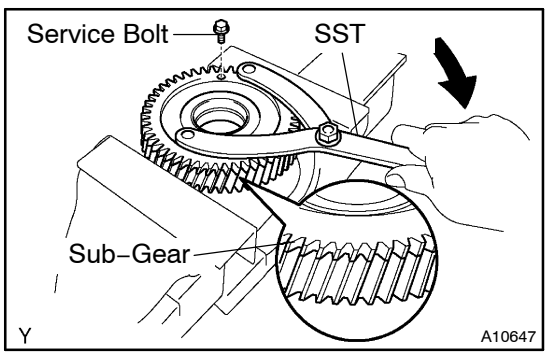


3. INSTALL IDLER GEAR SHAFT

Temporarily install the idle gear shaft with the union bolt.

NOTICE:

Do not tighten the union bolt.

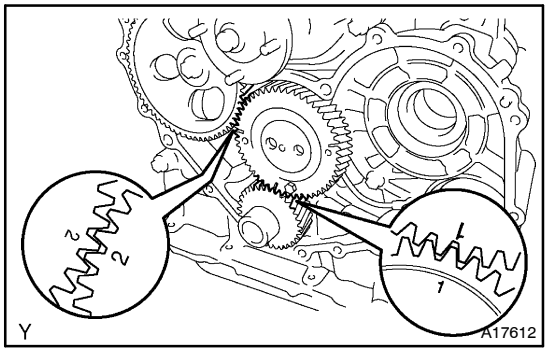


4. INSTALL IDLE GEAR

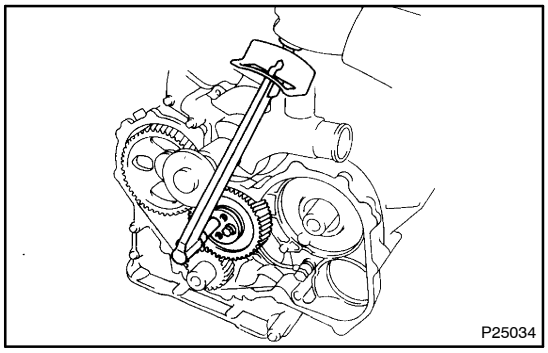
When the sub–gear and the idle gear have shifted, do the following work (a) and (b).

(a) Using SST, align the holes of the idle gear and sub–gear by turning the sub–gear clockwise, and install a service bolt.
SST 09960–10010 (09962–01000, 09963–00500)

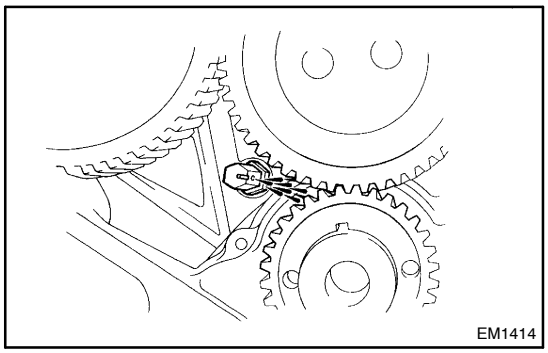
(b) Align the gear teeth of the idle gear and sub–gear, and tighten the service bolt.



(c) Align the idle gear timing marks ”1” and ”2” with the crankshaft gear timing mark ”1” and camshaft gear timing mark ”2” respectively, and mesh the gears.

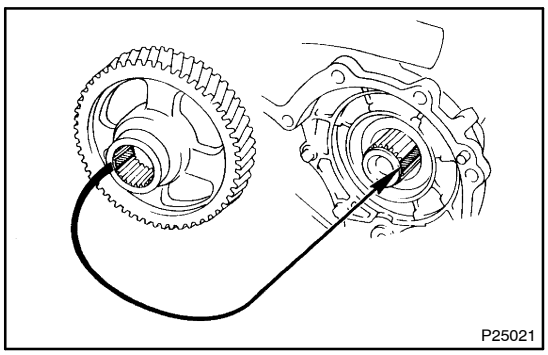


(d) Apply a light coat of engine oil on the threads and under the bolt heads.
(e) Install the thrust plate with the 2 bolts. Torque the bolts.
Torque: 47.5 N·m (484 kgf·cm, 35 ft·lbf)
(f) Remove the service bolt.

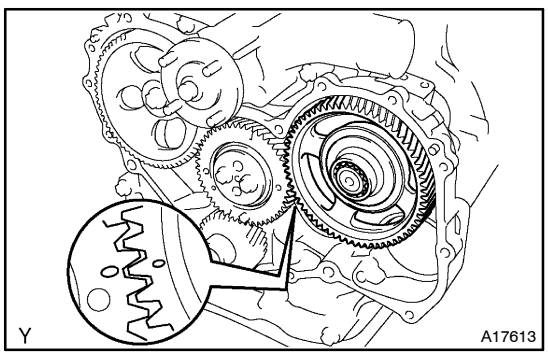


(g) Check that the oil nozzle is in the position shown.

5. TORQUE UNION BOLT FOR IDLE GEAR SHAFT
Torque: 11 N·m (112 kgf·cm, 8 ft·lbf)



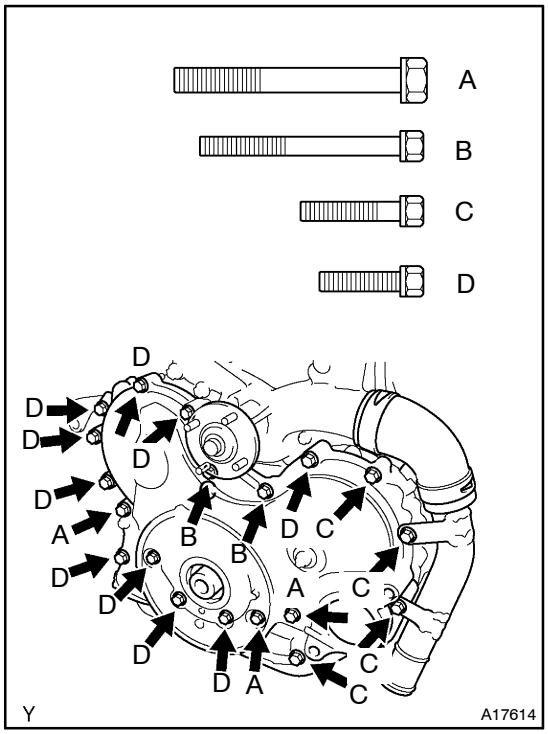
6. INSTALL INJECTION PUMP DRIVE GEAR
(a) Apply MP grease to the drive gear spline, bearing and injection pump spline.
(b) Align the spline toothless portions of the injection pump drive gear and injection pump, and install the injection pump drive gear.



(c) Align the idle gear timing mark ”0” with the injection pump drive gear timing mark ”0”, and mesh the gears.

7. INSTALL VACUUM PUMP
(a) Install 2 new O–rings to vacuum pump.
(b) Install the vacuum pump with the 2 bolts.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

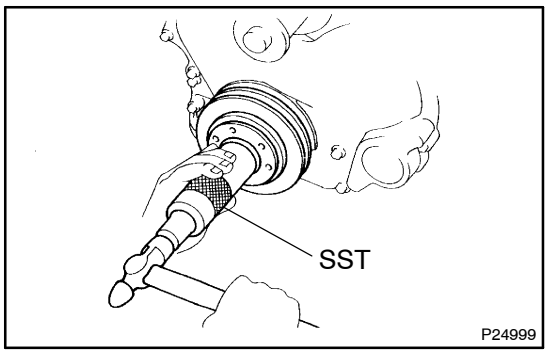
8. CHECK IDLE GEAR THRUST CLEARANCE
(See page EM–12)
Standard thrust clearance:
0.060 – 0.170 mm (0.0024 – 0.0067 in.)
Maximum thrust clearance: 0.30 mm (0.118 in.)

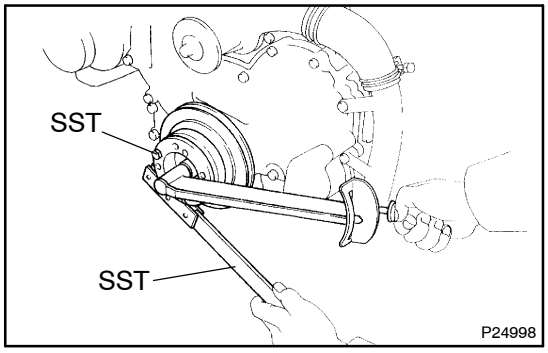


9. INSTALL TIMING GEAR COVER
(a) Install a new gasket and the timing gear cover.
(b) Align the 2 knock pins of the oil pump and lightly tap in the timing gear cover, using a plastic–faced hammer.
(c) Install the 15 mount bolts.
Torque:
14 mm head: 44 N·m (449 kgf·cm, 32 ft·lbf)
12 mm head: 21 N·m (214 kgf·cm, 15 ft·lbf)

HINT:
Each bolt length is indicated in the illustration.
Bolt length:
A 85 mm (3.35 in.) for 14 mm head
B 77 mm (3.03 in.) for 12 mm head
C 40 mm (1.57 in.) for 12 mm head
D 35 mm (1.38 in.) for 12 mm head

10. INSTALL VACUUM PIPE
11. INSTALL OIL DIPSTICK GUIDE AND DIPSTICK
12. INSTALL RADIATOR PIPE
(a) Connect the radiator hose to the water pump.
(b) Install the radiator pipe with the 2 bolts.
Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)
13. INSTALL CRANKSHAFT PULLEY
(a) Align the pulley set key with the key groove of the pulley.
(b) Using SST and a hammer, tap in the pulley.
SST 09608–06041



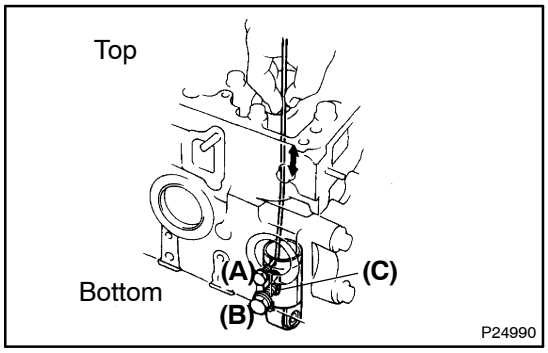


(c) Apply a light coat of engine oil on the threads and under the bolt head.

(d) Using SST, install and torque the pulley mount bolt.

SST 09213–58013 (90105–08076), 09330–00021

Torque: 294 N·m (3,000 kgf·cm, 217 ft·lbf)



14. DISPLACE VALVE LIFTERS

(a) Remove bolt (A) and let the lifter slide down.

(b) Install bolts (A) and (B) with new gaskets.

Torque:
Bolt (A) 7.5 N·m (76 kgf·cm, 66 in.·lbf)
Bolt (B) 37.5 N·m (382 kgf·cm, 28 ft·lbf)

HINT:

When installing bolt (B), check that the hole for bolt (B) is aligned with long hole (C) of valve lifter.

(c) Check that the valve lifter can move up and down within the limits of long hole (C).

NOTICE:

Be careful not to scratch the valve lifter.

15. INSTALL PUSH RODS

16. INSTALL VALVE ROCKER SHAFT ASSEMBLY (See page EM–40)

17. INSTALL CYLINDER HEAD COVER (See page EM–40)

18. INSTALL SPARK PLUGS

19. INSTALL DISTRIBUTOR (See page IG–15)

20. CONNECT HIGH–TENSION CORDS TO SPARK PLUGS

21. INSTALL EXHAUST MANIFOLD (See page EM–40)

22. INSTALL WATER PUMP PULLEY, FLUID COUPLING ASSEMBLY, FAN AND DRIVE BELTS (See page CO–6)

23. START ENGINE AND CHECK FOR LEAKS

24. CHECK ENGINE OIL LEVEL

25. READJUST VALVE CLEARANCE (See page EM–6)

26. READJUST DRIVE BELT(S) (See page CH–2)