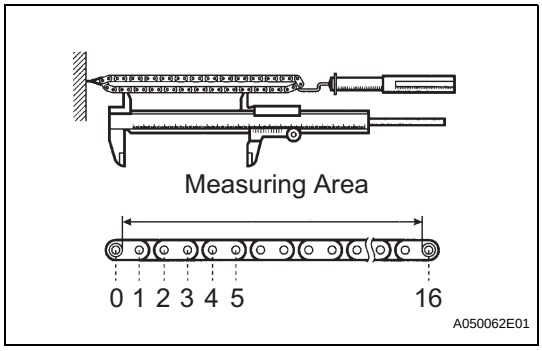


26. REMOVE CHAIN

INSPECTION

1. INSPECT CHAIN

(a) Using a spring scale, pull the timing chain with a force of 140 N (14.3 kgf, 31.5 lbf) and measure the length of it.

Maximum chain elongation:

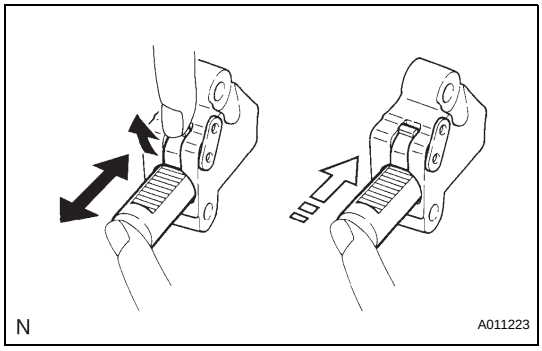
123.2 mm (4.850 in.)

If the elongation is greater than the maximum, replace the chain.

HINT:

Perform the same measurements by pulling at 3 or more random places to obtain the average length.

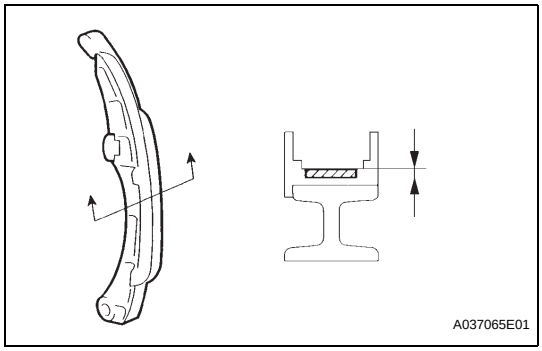
EM



2. INSPECT NO. 1 CHAIN TENSIONER

(a) Check that the plunger moves smoothly when the ratchet pawl is raised with your finger.

(b) Release the ratchet pawl and check that the plunger is locked in place by the ratchet pawl and does not move when pushed with your finger.



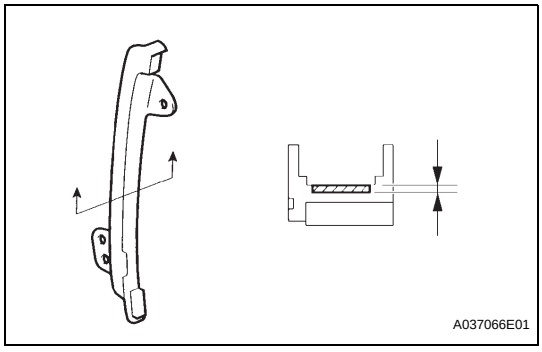
3. INSPECT CHAIN TENSIONER SLIPPER

(a) Measure the chain tensioner slipper wear.

Maximum wear:

1.0 mm (0.039 in.)

If the wear is greater than the maximum, replace the slipper.



4. INSPECT NO. 1 CHAIN VIBRATION DAMPER

(a) Measure the vibration damper wear.

Maximum wear:

1.0 mm (0.039 in.)

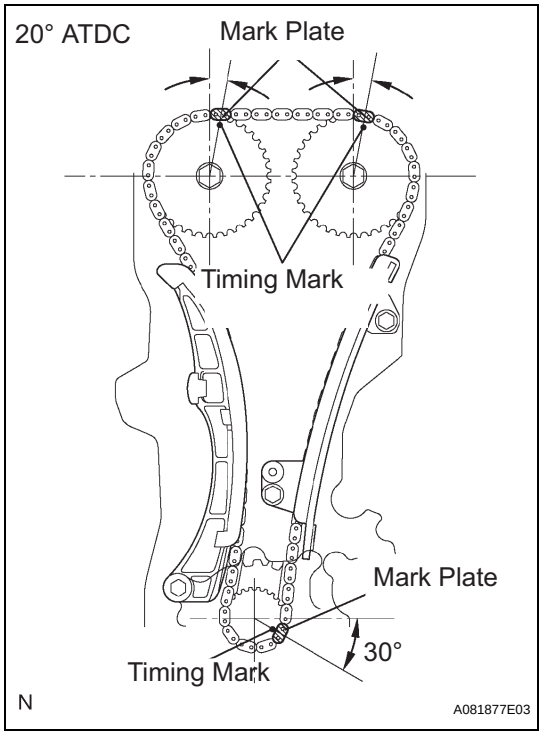
If the wear is greater than the maximum, replace the damper.

INSTALLATION

1. INSTALL CHAIN

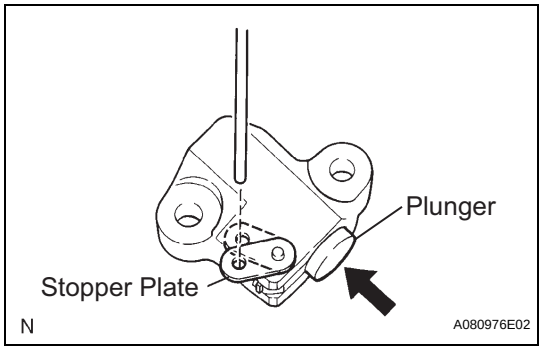
(a) Set the position of the No. 1 cylinder to 20° ATDC.
NOTICE:
To prevent the pistons from hitting against valves, the following procedures must be performed in the order below.
(1) Set the crankshaft between 40 to 140° ATDC.
(2) Set the cams of the intake and exhaust timing sprockets to 20° ATDC.
(3) Reset the crankshaft to 20° ATDC.

(b) Install the chain vibration damper with the 2 bolts.
Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)



(c) Align the timing mark of the camshaft timing sprocket, camshaft timing gear and crankshaft timing sprocket with each mark plate (colored in yellow) of the timing chain.
HINT:
To prevent the exhaust camshaft from springing back, turn it using a wrench and set it at the mark on the chain.

(d) Install the chain tensioner slipper with the bolt.
Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)



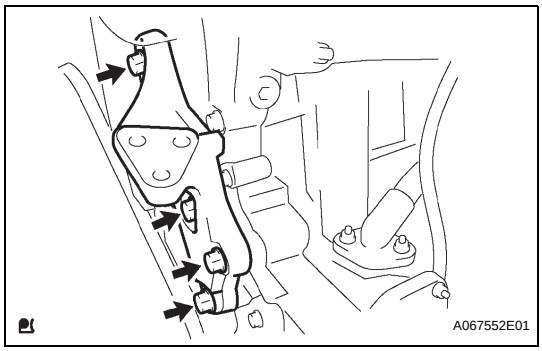
(e) Install the chain tensioner with the 2 bolts.
(1) While rotating the stopper plate of the chain tensioner upward as shown in the illustration, push in the plunger of the tensioner.
(2) While rotating the stopper plate of the tensioner downward, insert a 2.5 mm (0.098 in.) diameter bar into the holes of the stopper plate and the tensioner to hold the stopper plate.
(3) Install the chain tensioner with the 2 bolts.
Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)
(4) Remove the bar from the chain tensioner.

(f) Check the tension between the intake and exhaust camshaft timing sprockets.

2. INSTALL OIL PUMP SEAL (See page EM-107)

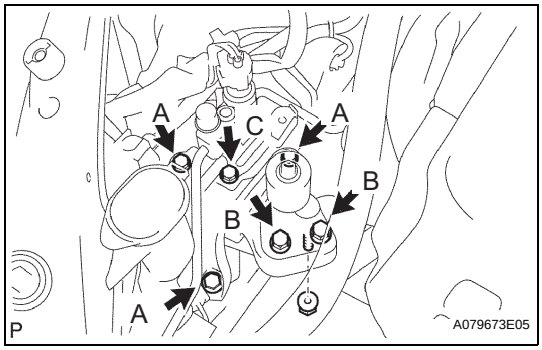
3. INSTALL TIMING CHAIN COVER (See page EM-119)

4. INSTALL WATER PUMP (See page EM-121)



5. INSTALL ENGINE MOUNTING BRACKET RH

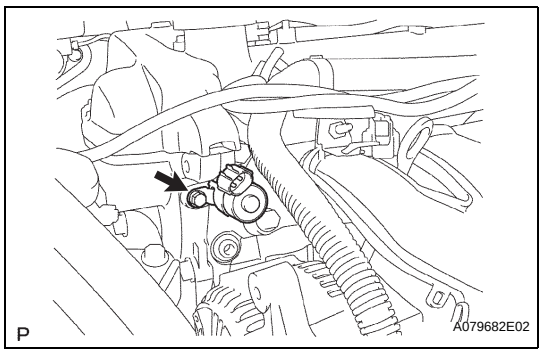
(a) Install the mounting bracket RH with the 4 bolts.
Torque: 55 N*m (561 kgf*cm, 41 ft.*lbf)



6. INSTALL ENGINE MOUNTING INSULATOR RH

(a) Install the mounting insulator with the 5 bolts and nut.
Torque: 45 N*m (459 kgf*cm, 33 ft.*lbf) for bolt A
52 N*m (530 kgf*cm, 38 ft.*lbf) for bolt B and nut

(b) Install the liquid tube with the bolt.
Torque: 9.8 N*m (100 kgf*cm, 7 ft.*lbf) for bolt C



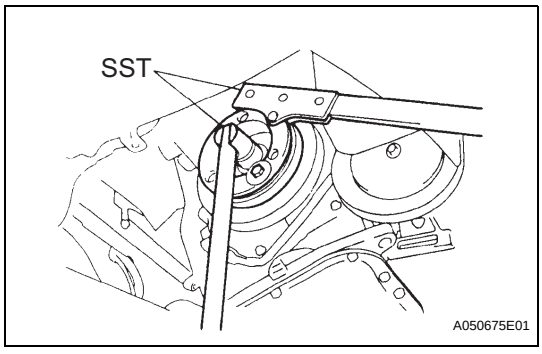
7. INSTALL CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY

(a) Apply a light coat of engine oil to a new O-ring, and install it onto the camshaft timing oil control valve.

(b) Install the camshaft timing oil control valve with the bolt.
Torque: 7.5 N*m (76 kgf*cm, 66 in.*lbf)
NOTICE:
Be careful not to twist an O-ring.

8. INSTALL CRANKSHAFT POSITION SENSOR (See page ES-338)

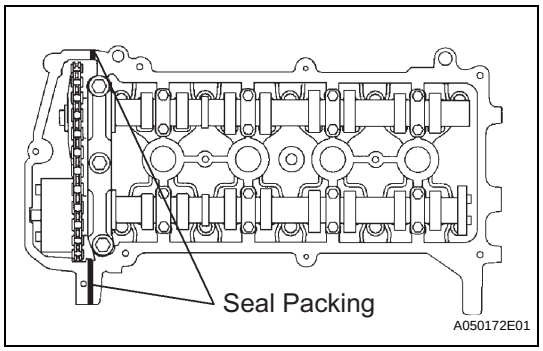
9. INSTALL WATER PUMP PULLEY (See page EM-122)



10. INSTALL CRANKSHAFT PULLEY

(a) Align the pin hole of the crankshaft pulley with the pin position and install the crankshaft pulley.

(b) Using SST, install the pulley bolt.
SST 09330-00021, 09213-58012 (91111-50845)
Torque: 128 N*m (1,305 kgf*cm, 95 ft.*lbf)



11. INSTALL CYLINDER HEAD COVER

(a) Apply seal packing to the 2 locations shown in the illustration.

Seal packing:

Part No. 08826-00080 or equivalent

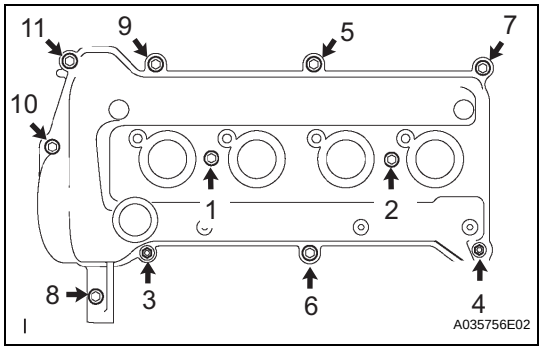
NOTICE:

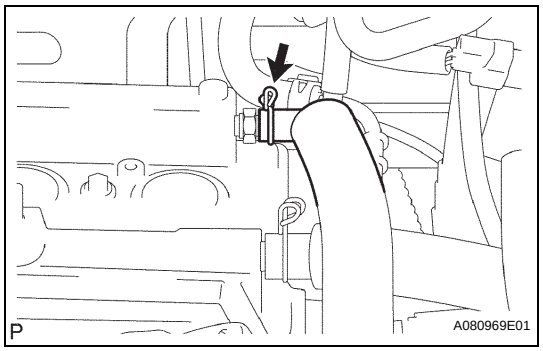
- **Remove any oil from the contact surface.**
- **Install the cylinder head cover within 3 minutes of applying seal packing.**
- **Do not start the engine for at least 2 hours after installation.**

(b) Install the head cover with the 9 bolts, 2 seal washers and 2 nuts.

(c) Using several steps, uniformly tighten the bolts and nuts in the sequence shown in the illustration.

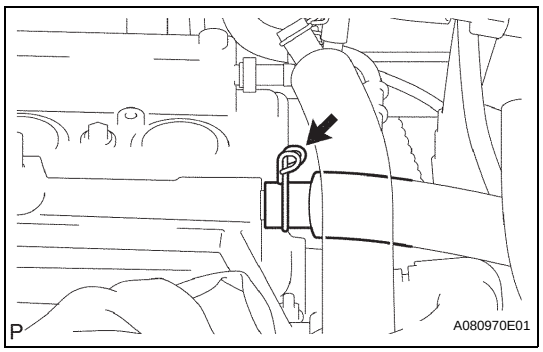
Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)





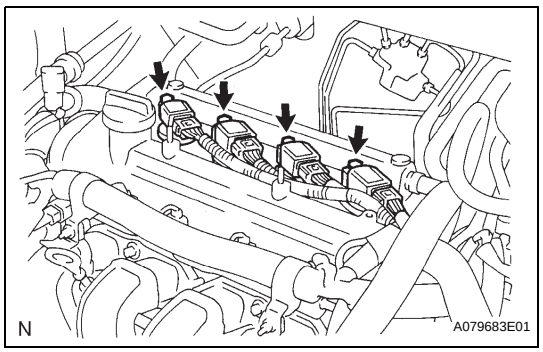
12. CONNECT NO. 2 VENTILATION HOSE

(a) Connect the No. 2 ventilation hose to the cylinder head cover.



13. CONNECT VENTILATION HOSE

(a) Connect the ventilation hose to the cylinder head cover.

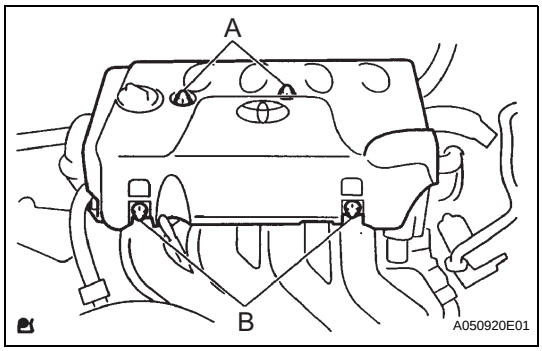


14. INSTALL IGNITION COIL

(a) Install the 4 ignition coils with the 4 bolts.

Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)

EM



15. **INSTALL NO. 2 CYLINDER HEAD COVER**
    (a) First tighten the nuts labeled A, and then tighten the nuts labeled B.
    Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)
16. **INSTALL GENERATOR (See page CH-15)**
17. **INSTALL VANE PUMP V BELT (See page EM-7)**
18. **INSTALL GENERATOR V BELT (See page EM-7)**
19. **ADJUST GENERATOR V BELT (See page EM-7)**
20. **ADJUST VANE PUMP V BELT (See page EM-7)**
21. **INSPECT DRIVE BELT TENSION (See page EM-6)**
22. **INSTALL OIL PAN DRAIN PLUG**
    (a) Install the drain plug with a new gasket.
    Torque: 37.5 N*m (383 kgf*cm, 28 ft.*lbf)
23. **ADD ENGINE OIL (See page LU-3)**
24. **CHECK FOR ENGINE OIL LEAKS**
25. **ADD COOLANT (See page CO-5)**
26. **CHECK FOR ENGINE COOLANT LEAKS (See page CO-1)**
27. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**