

INSTALLATION

1. INSTALL TIMING BELT

- (a) Check the No. 1 timing belt idler and No. 2 timing belt idler.
 - (1) Visually check the seal portion of the idler pulley for oil leakage.
If leakage is found, replace the idler.
 - (2) Check that the idler turns smoothly.
If necessary, replace the idler.
- (b) Check the water pump.
 - (1) Visually check the air hole and water hole for coolant leakage.
If leakage is found, replace the water pump and timing belt.
 - (2) Turn the pulley, and check that the water pump bearing moves smoothly.
If necessary, replace the water pump.
- (c) Remove any oil or water on the crankshaft pulley, oil pump pulley, water pump pulley, No. 1 idler and No. 2 idler, and keep them clean.

NOTICE:

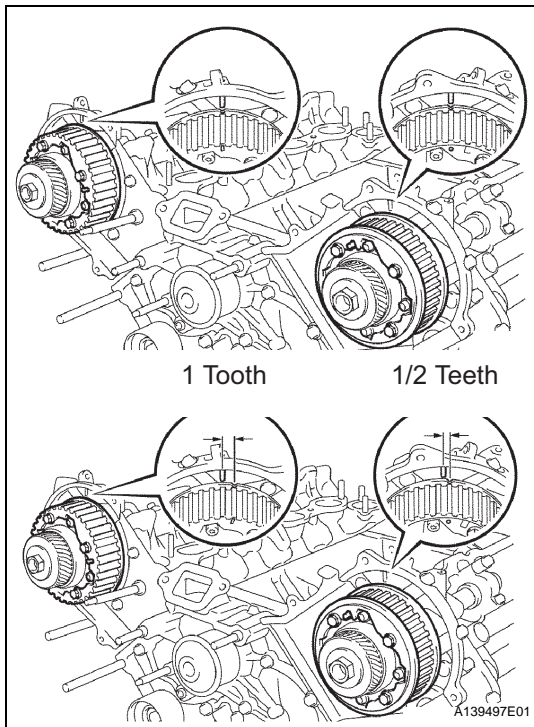
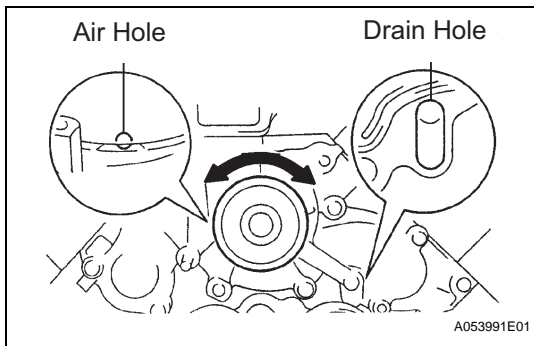
Only wipe the pulleys; do not use any cleansing agent.

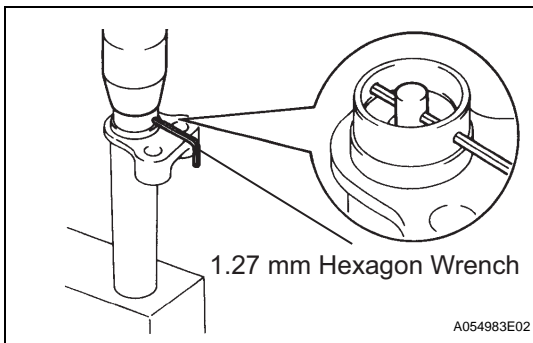
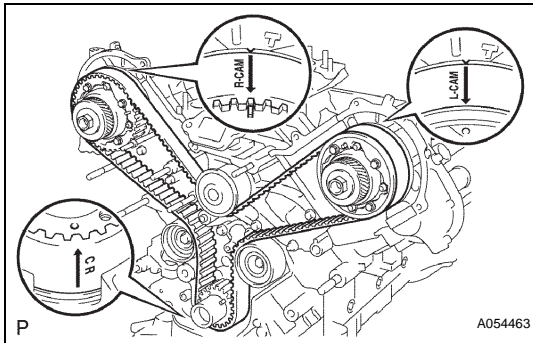
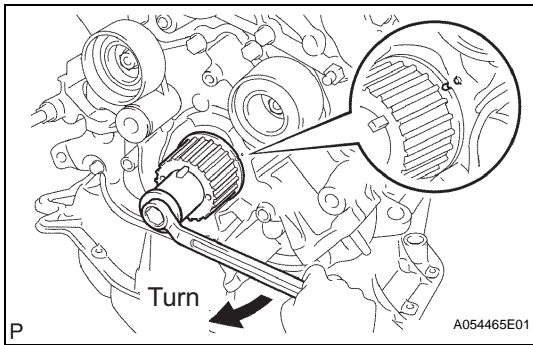
- (d) Set the No. 1 cylinder to the TDC/compression.
 - (1) Turn the hexagonal portion of the camshaft to align the timing marks of the camshaft timing pulleys and timing belt plates.

HINT:

By turning the camshaft timing pulleys clockwise as follows, installation of the timing pulleys will be easy:

- 1/2 teeth turn for the left bank camshaft timing pulley
- 1 tooth turn for the right bank camshaft timing pulley





- (2) Using the crankshaft damper bolt, turn the crankshaft to align the timing marks of the crankshaft timing pulley and oil pump body.

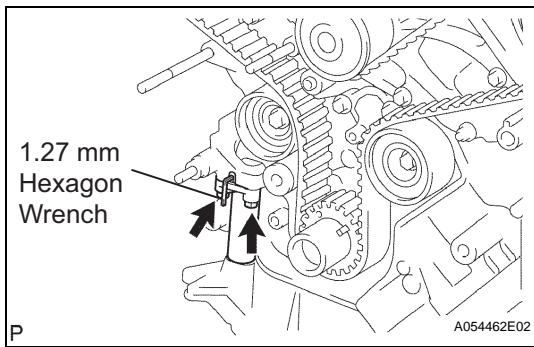
(e) Install the timing belt.

- (1) Remove any oil or water on each pulley, and keep them clean.

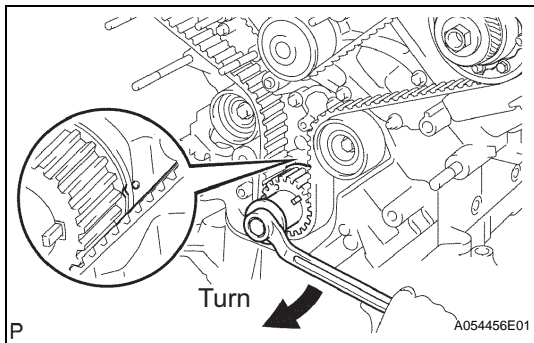
NOTICE:

Only wipe the pulleys; do not use any cleansing agent.

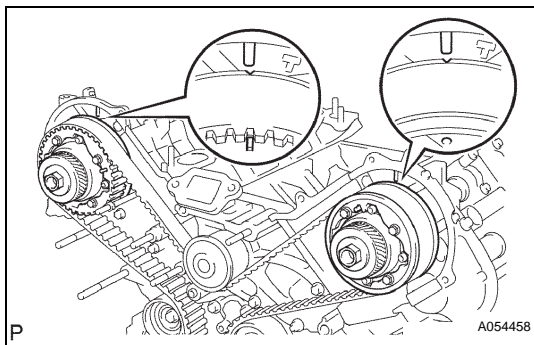
- (2) Face the front mark (arrow) on the timing belt forward.
 - (3) Put the timing belt on the crankshaft timing pulley.
 - Align the installation mark on the timing belt with the timing mark of the crankshaft timing pulley.
 - (4) Put the timing belt on the No. 2 idler.
 - (5) Put the timing belt on the camshaft timing pulley (LH bank).
 - Align the installation mark on the timing belt with the timing mark of the camshaft timing pulley.
 - (6) Put the timing belt on the water pump pulley.
 - (7) Put the timing belt on the camshaft timing pulley (RH bank).
 - Align the installation mark on the timing belt with the timing mark of the camshaft timing pulley.
 - (8) Put the timing belt on the No. 1 idler.
- (f) Set the belt tensioner.
- (1) Using a press, slowly press in the push rod using 981 to 9,807 N (100 to 1,000 kgf, 220 to 2,205 lbf) of pressure.
 - (2) Align the holes of the push rod and housing, and pass a 1.27 mm hexagon wrench through the holes to keep the setting position of the push rod.
 - (3) Release the press.
 - (4) Install the dust boot to the belt tensioner.



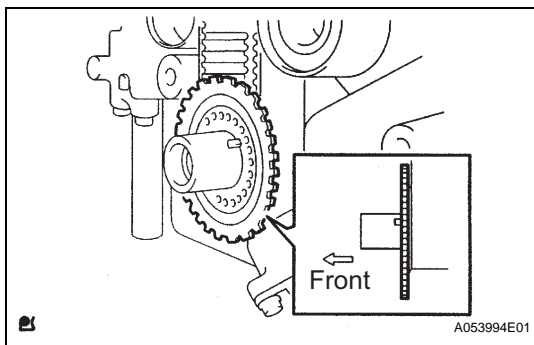
- (g) Install the belt tensioner.
- (1) Temporarily install the belt tensioner with the 2 bolts.
 - (2) Alternately tighten the 2 bolts.
Torque: 26 N*m (270 kgf*cm, 19 ft.*lbf)
 - (3) Using pliers, remove the 1.27 mm hexagon wrench from the chain tensioner.



- (h) Check the valve timing.
- (1) Using the crankshaft damper bolt, slowly turn the crankshaft pulley 2 revolutions from the TDC to TDC.
NOTICE:
Always turn the crankshaft pulley clockwise.

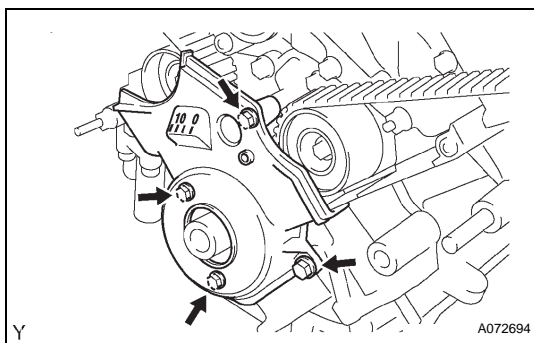


- (2) Check that each pulley is aligned with each timing mark as shown in the illustration. If the timing marks are not aligned, remove the timing belt and reinstall it.
- (3) Remove the crankshaft damper bolt.



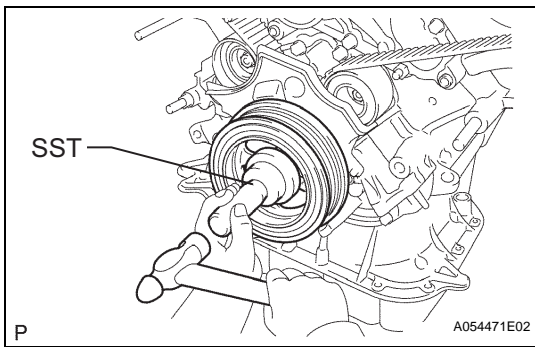
2. INSTALL NO. 1 CRANKSHAFT POSITION SENSOR PLATE

- (a) Install the sensor plate as shown in the illustration.
NOTICE:
Take care not to install it in a wrong direction.



3. INSTALL TIMING BELT NO. 1 COVER

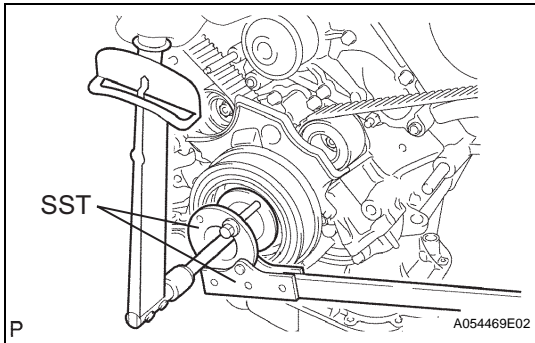
- (a) Install the timing belt cover with the 4 bolts.
Torque: 7.5 N*m (80 kgf*cm, 66 in.*lbf)



4. INSTALL CRANKSHAFT DAMPER SUB-ASSEMBLY

- (a) Align the pulley set key with the key groove of the crankshaft damper.
- (b) Using SST and a hammer, tap in the crankshaft damper.

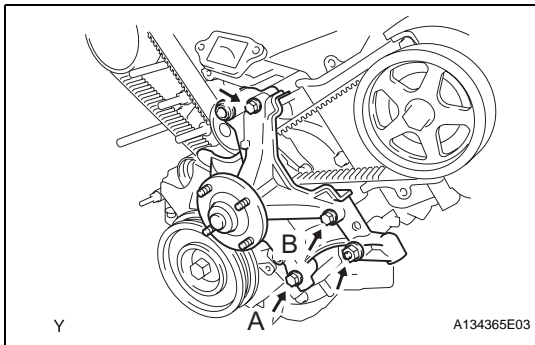
SST 09223-46011



- (c) Using SST, install the damper bolt.

SST 09213-70011 (09213-70020), 09330-00021

Torque: 245 N*m (2,498 kgf*cm, 181 ft.*lbf)



5. INSTALL FAN BRACKET SUB-ASSEMBLY

- (a) Install the idler pulley with the 2 bolts and 2 nuts.

Torque: For 12 mm head

16 N*m (160 kgf*cm, 12 ft.*lbf)

For 14 mm head

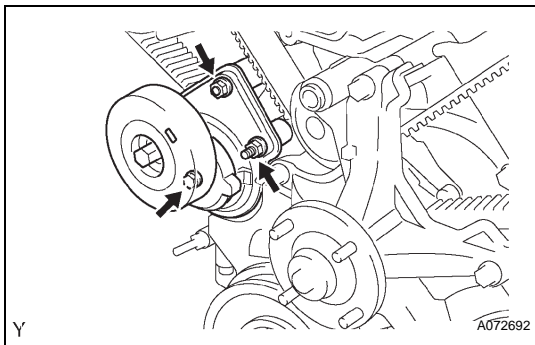
32 N*m (326 kgf*cm, 24 ft.*lbf)

HINT:

Each bolt length is as follows:

106 mm (4.17 in.) for 12 mm head (A)

114 mm (4.49 in.) for 14 mm head (B)



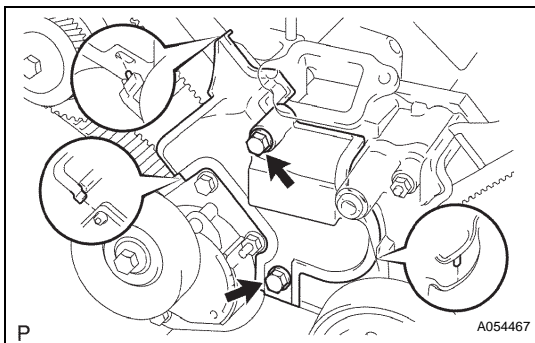
6. INSTALL V-RIBBED BELT TENSIONER ASSEMBLY

- (a) Install the belt tensioner with the bolt and 2 nuts.

Torque: 16 N*m (160 kgf*cm, 11 ft.*lbf)

HINT:

Use a bolt 106 mm (4.17 in.) in length.



7. INSTALL NO. 2 TIMING BELT COVER SUB-ASSEMBLY

- (a) Install the timing belt cover and fit the claws and pins into each part.

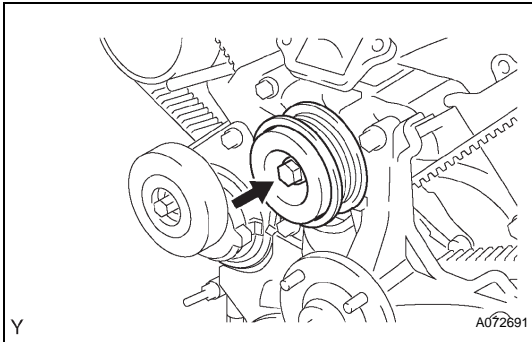
- (b) Install the timing belt cover with the 2 bolts.

Torque: 16 N*m (160 kgf*cm, 12 ft.*lbf)

HINT:

Use bolts 106 mm (4.17 in.) in length.

EM



8. **INSTALL NO. 3 TIMING BELT COVER SUB-ASSEMBLY LH**
 - (a) Install the timing belt cover sub-assembly with the 4 bolts.
Torque: 7.5 N*m (80 kgf*cm, 66 in.*lbf)
 - (b) Install the camshaft position sensor connector and grommet to the timing belt cover.
9. **INSTALL NO. 2 TIMING CHAIN OR BELT COVER**
 - (a) Install the timing chain or belt cover with the nut and 3 bolts.
Torque: 7.5 N*m (80 kgf*cm, 66 in.*lbf)
10. **INSTALL OIL COOLER PIPE**
 - (a) Install the oil cooler pipe with the bolt and nut.
Torque: 7.5 N*m (80 kgf*cm, 66 in.*lbf)
 - (b) Connect the 3 hoses.
11. **INSTALL NO. 2 IDLER PULLEY SUB-ASSEMBLY**
 - (a) Install the idler pulley and cover plate with the bolt.
Torque: 39 N*m (398 kgf*cm, 29 ft.*lbf)
12. **INSTALL COMPRESSOR**
 - (a) Install the compressor with the stay, nut and 3 bolts.
Torque: Bolt
47 N*m (475 kgf*cm, 34 ft.*lbf)
Nut
25 N*m (255 kgf*cm, 18 ft.*lbf)
13. **INSTALL GENERATOR ASSEMBLY (See page CH-17)**
14. **INSTALL VANE PUMP ASSEMBLY**
 - (a) Install the vane pump assembly with the nut and 2 bolts.
Torque: 43 N*m (438 kgf*cm, 32 ft.*lbf)
15. **INSTALL FAN WITH FLUID COUPLING**
 - (a) Install the fan pulley to the engine.
 - (b) Put the fan with fluid coupling and fan shroud together into the engine room.
 - (c) Install the fan shroud with the 3 bolts.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)
 - (d) Install the fan with fluid coupling with the 4 nuts.
Torque: 29 N*m (296 kgf*cm, 21 ft.*lbf)
16. **INSTALL FAN AND GENERATOR V BELT (See page EM-6)**
17. **INSTALL RADIATOR SUPPORT SEAL UPPER**
18. **INSTALL AIR CLEANER HOSE ASSEMBLY**
19. **INSTALL THROTTLE BODY COVER SUB-ASSEMBLY**
 - (a) Install the throttle body cover sub-assembly with the 2 nuts.
Torque: 7.5 N*m (80 kgf*cm, 66 in.*lbf)
20. **ADD ENGINE COOLANT (See page CO-3)**
21. **CHECK FOR ENGINE COOLANT LEAKS (See page CO-4)**