

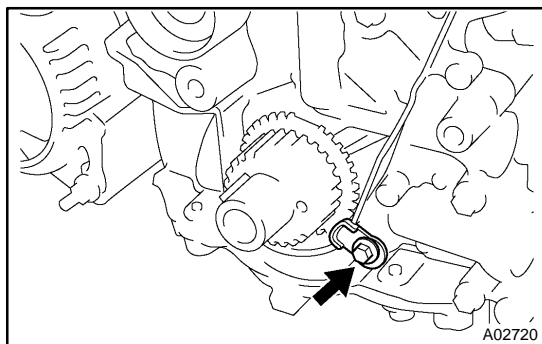
## INSTALLATION

### 1. INSTALL CRANKSHAFT TIMING PULLEY

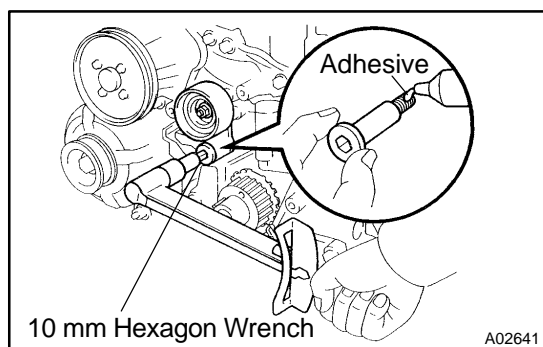
- Align the pulley set key with the key groove of the pulley.
- Slide on the timing pulley facing the flange side inward.

#### NOTICE:

Do not scratch the sensor part of the crankshaft timing pulley.

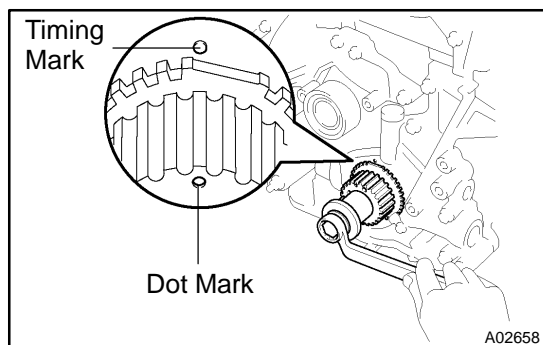


- Install the timing belt plate with the bolt.  
**Torque: 8.0 N·m (80 kgf-cm, 71 in.-lbf)**



### 2. INSTALL IDLER PULLEY

- Apply adhesive to 2 or 3 threads of the pivot bolt.  
**Adhesive:**  
**Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent**
- Using a 10 mm hexagon wrench, install the plate washer and pulley with the pivot bolt.  
**Torque: 35 N·m (350 kgf-cm, 26 ft-lbf)**
- Check that the pulley bracket moves smoothly.

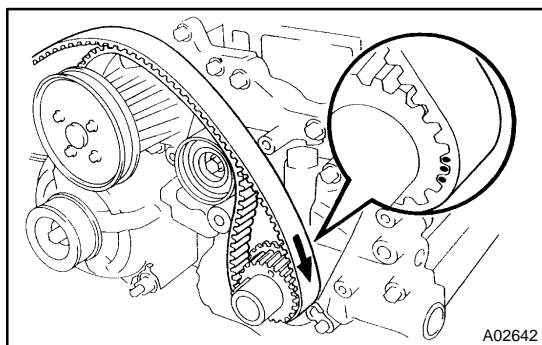


### 3. TEMPORARILY INSTALL TIMING BELT

#### NOTICE:

The engine should be cold.

- Use the crankshaft pulley bolt to turn the crankshaft, and align the dot mark on the crankshaft timing pulley and the timing mark on the oil pump body.
- Remove any oil or water on the crankshaft timing pulley and idler pulley, and keep them clean.

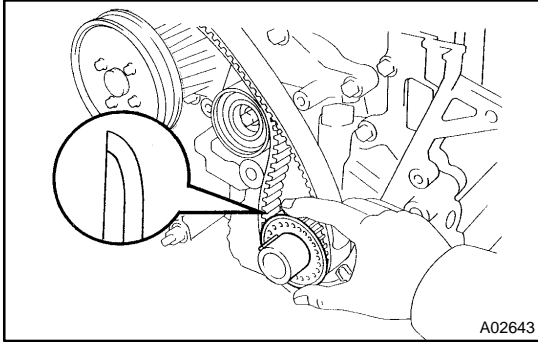


- Install the timing belt on the crankshaft timing pulley and idler pulley.

#### HINT:

When re-using timing belt:

Align the matchmarks of the crankshaft timing pulley and timing belt, and install the belt with the arrow pointing in the direction of engine revolution.

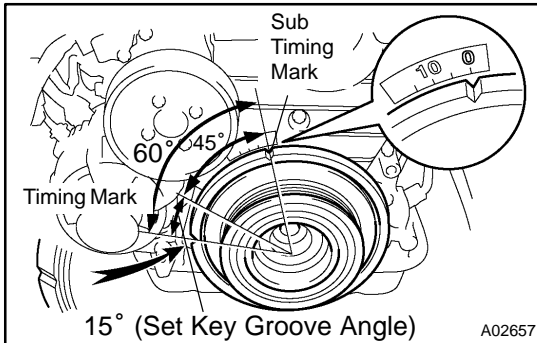
**4. INSTALL TIMING BELT GUIDE**

Install the guide, facing the cup side outward.

**5. INSTALL NO. 1 TIMING BELT COVER**

- (a) Install the gasket to the timing belt cover.
- (b) Install the timing belt cover with the 5 bolts.

**Torque: 8.0 N·m (80 kgf·cm, 71 in.-lbf)**

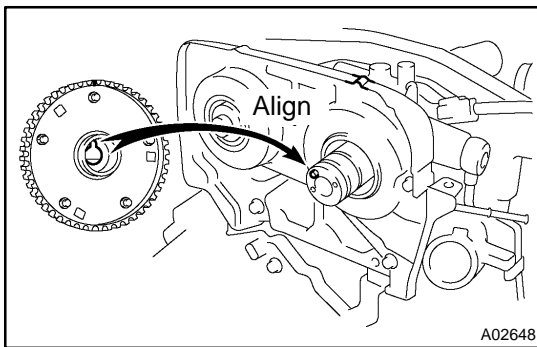
**6. INSTALL CRANKSHAFT PULLEY**

- (a) Align the pulley set key with the key groove of the pulley, and slide on the pulley.
- (b) Check that the sub timing mark (60° mark BTDC) of the crankshaft pulley is aligned with the timing mark "0" of the No.1 timing belt cover.

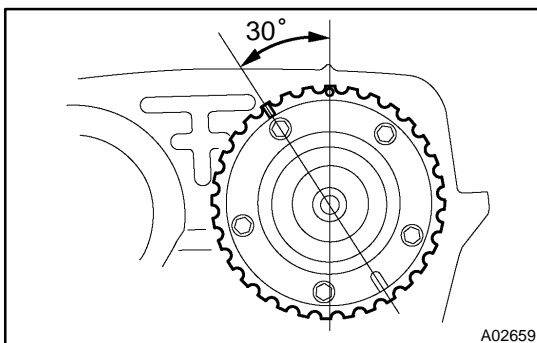
**HINT:**

At this time, the crankshaft pulley set key groove and the timing mark (TDC mark) of the crankshaft pulley are as shown the illustration.

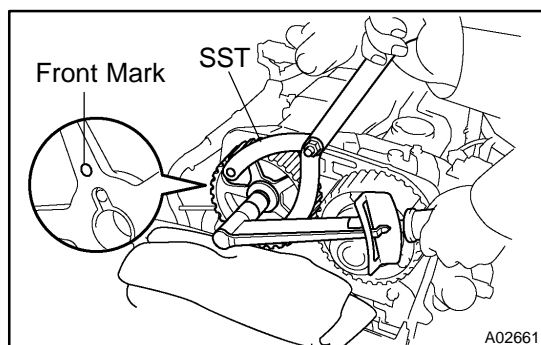
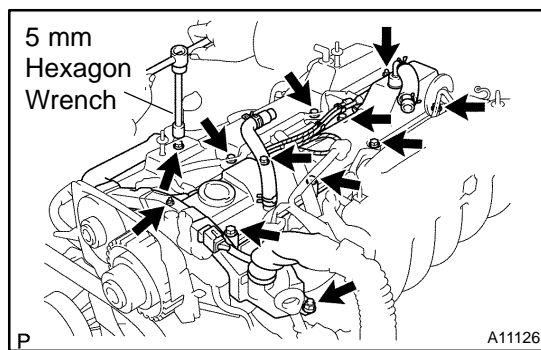
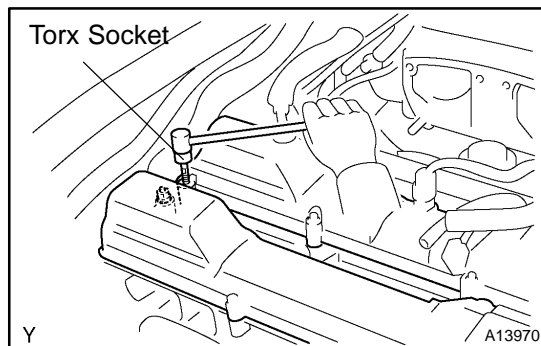
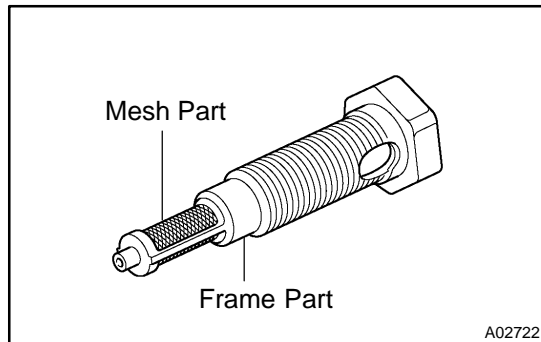
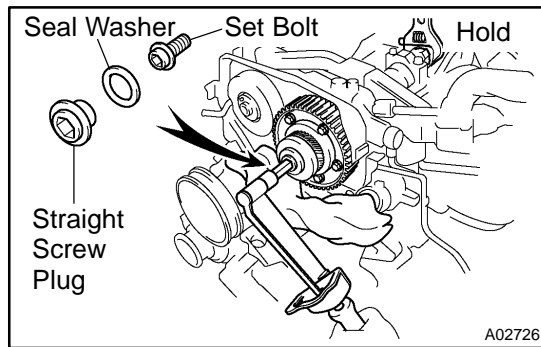
- (c) Temporarily install the pulley bolt.

**7. INSTALL VVT-i (INTAKE CAMSHAFT TIMING) PULLEY**

- (a) Align the camshaft knock pin with the VVT-i pulley, and push the VVT-i pulley by hand until you feel it touch the bottom.



- (b) Check that the outer circumference of the VVT-i pulley easily rotates through 30°.



- (c) Holding the hexagon portion of the camshaft with a wrench.
- (d) Using a 10 mm hexagon wrench, and the set bolt.  
**Torque: 81 N·m (810 kgf·cm, 60 ft·lbf)**
- (e) Using a 14 mm hexagon wrench, install the straight screw plug with the seal washer to the set bolt.  
**Torque: 15 N·m (150 kgf·cm, 11 ft·lbf)**
- (f) Align the dot mark on the camshaft timing pulley with the timing mark of the No. 4 timing belt cover.
- (g) Remove the wrench.

## 8. CONNECT NO. 1 OIL PIPE

- (a) Install the union bolt to the oil control valve filter.

### NOTICE:

**In case of touching the filter, avoid holding the mesh part and holding the frame part.**

- (b) Install the oil pipe with 2 new gasket and the union bolt to the No.3 camshaft bearing cap.

**Torque: 55 N·m (550 kgf·cm, 41 ft·lbf)**

## 9. INSTALL CAMSHAFT TIMING OIL CONTROL VALVE (See page SF-43 )

## 10. INSTALL NO. 1 CYLINDER HEAD COVER

- (a) Install the cylinder head and gasket with the 6 bolts.  
**Torque: 8.5 N·m (85 kgf·cm, 75 in·lbf)**
- (b) Using a torx socket (E5), install the 2 stud bolts.  
**Torque: 8.5 N·m (85 kgf·cm, 75 in·lbf)**
- (c) Install the 2 nuts to the 2 stud bolts.  
**Torque: 8.5 N·m (85 kgf·cm, 75 in·lbf)**
- (d) Install the high-tension cords and clamps with the 2 bolts.  
**Torque: 8.0 N·m (80 kgf·cm, 71 in·lbf)**

- (e) Using a 5 mm hexagon wrench, install the engine wire protector with the bolt and nut.

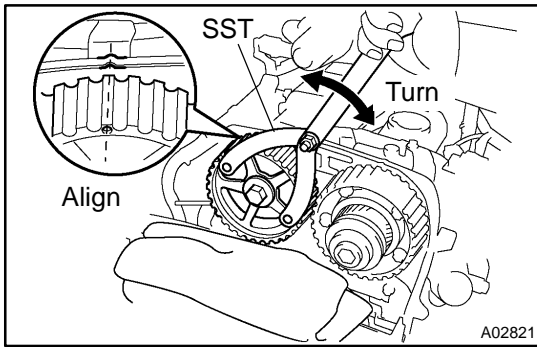
## 11. INSTALL THROTTLE BODY AND INTAKE AIR CONNECTOR ASSEMBLY (See page EM-5 )

## 12. INSTALL ENGINE COVER

Install the engine cover with the 4 nuts.

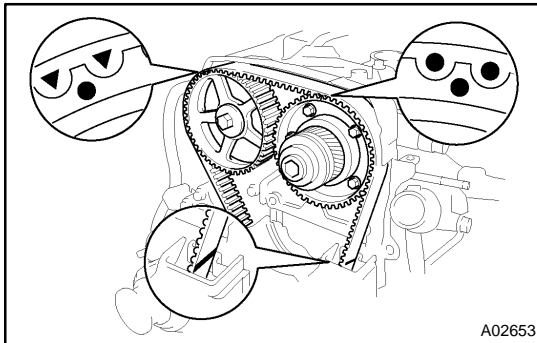
## 13. INSTALL EXHAUST CAMSHAFT TIMING PULLEY

- (a) Align the camshaft knock pin with the groove on the pulley, and slide on the timing pulley.
- (b) Slide the timing pulley on the camshaft, facing the front mark forward.
- (c) Using SST, install the pulley bolt.  
SST 09960-10010 (09962-01000, 09963-01000)  
**Torque: 81 N·m (810 kgf·cm, 60 ft·lbf)**



- (d) Using SST, align the dot mark on the camshaft timing timing pulley with the timing mark of the No. 4 timing belt cover.

SST 09960-10010 (09962-01000, 09963-01000)

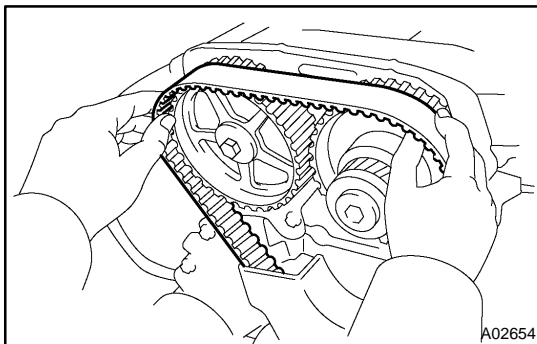


#### 14. CONNECT TIMING BELT TO CAMSHAFT TIMING PULLEYS

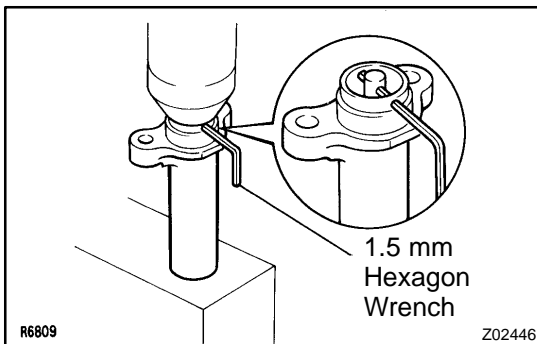
##### HINT:

When re-using timing belt:

- Check that the matchmark on the timing belt matches the end of the No. 1 timing belt cover. If the matchmark does not align, shift the meshing of the timing belt and crankshaft timing pulley until they align.
- Align the matchmarks of the timing belt and camshaft timing pulleys.

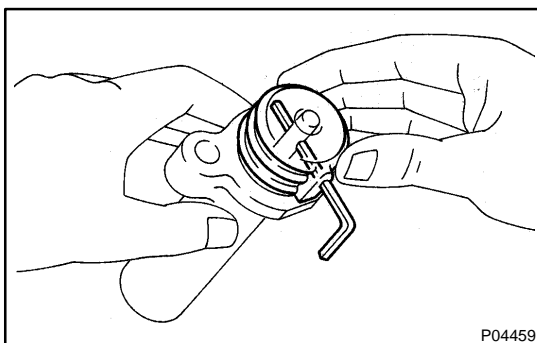


- (a) Remove any oil or water on the camshaft timing pulley, and keep it clean.
- (b) Install the timing belt, checking the tension between the crankshaft timing pulley and intake camshaft timing pulley.

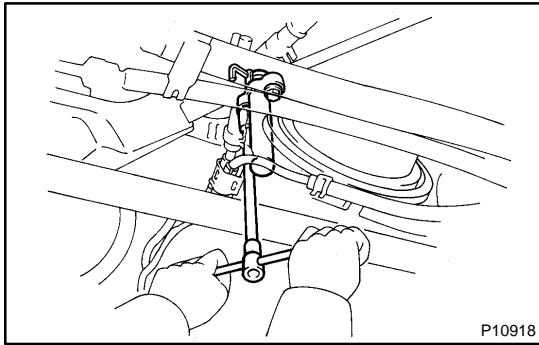


#### 15. SET TIMING BELT TENSIONER

- (a) Using a press, slowly press in the push rod using 981 - 9,807 N (100 - 1,000 kgf, 220 - 2,205 lbf) of force.
- (b) Align the holes of the push rod and housing, pass a 1.5 mm hexagon wrench through the holes to keep the push rod retracted.
- (c) Release the press.

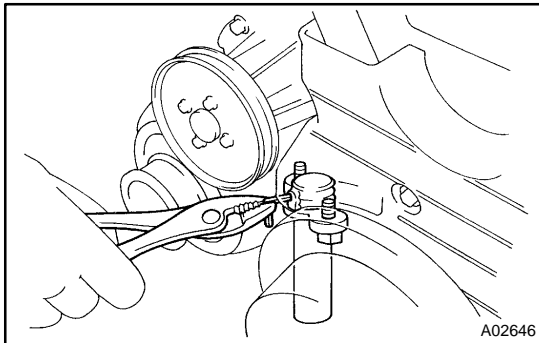


- (d) Install the dust boot onto the tensioner.

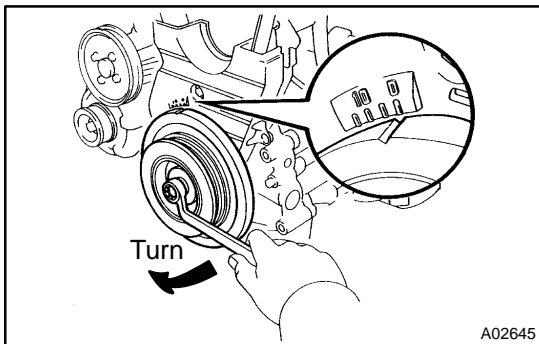
**16. INSTALL TIMING BELT TENSIONER**

- (a) Temporarily install the tensioner with the 2 bolts.
- (b) Alternately tighten the 2 bolts.

**Torque: 27 N·m (270 kgf-cm, 20 ft-lbf)**



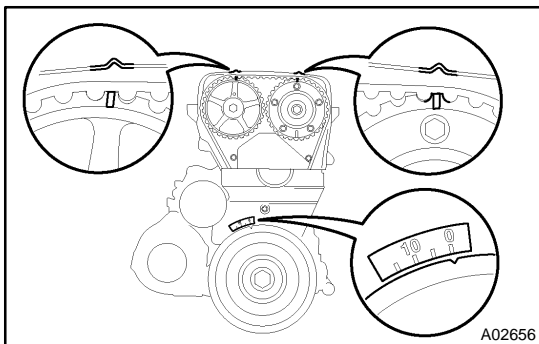
- (c) Remove the 1.5 mm hexagon wrench from the tensioner with pliers.

**17. CHECK VALVE TIMING**

- (a) Slowly turn the crankshaft pulley 2 revolutions from TDC to TDC.

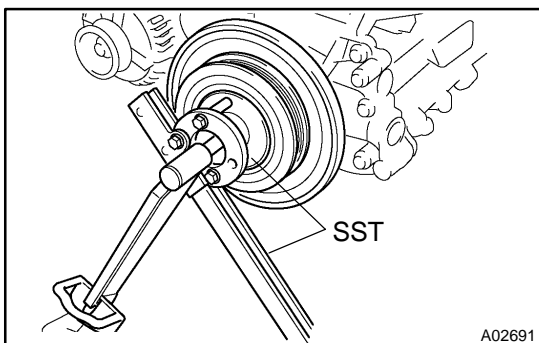
**NOTICE:**

**Always turn the crankshaft clockwise.**



- (b) Check that each pulley aligns with the timing marks as shown in the illustration.

If the marks do not align, remove the timing belt and reinstall it.

**18. TIGHTEN CRANKSHAFT PULLEY BOLT**

Using SST, install the pulley bolt.

SST 09213-7001 1, 09330-00021

**Torque: 330 N·m (3,300 kgf-cm, 243 ft-lbf)**

**19. INSTALL DRIVE BELT TENSIONER**

Install the tensioner with the 3 bolts.

**Torque: 21 N·m (210 kgf-cm, 15 ft-lbf)**

**NOTICE:**

**Be careful not to drop the bolts inside the timing belt cover.**

**20. INSTALL NO. 2 TIMING BELT COVER**

- (a) Install the gasket on the timing belt cover.
- (b) Using a 5 mm hexagon wrench, install the timing belt cover with the 3 bolts.

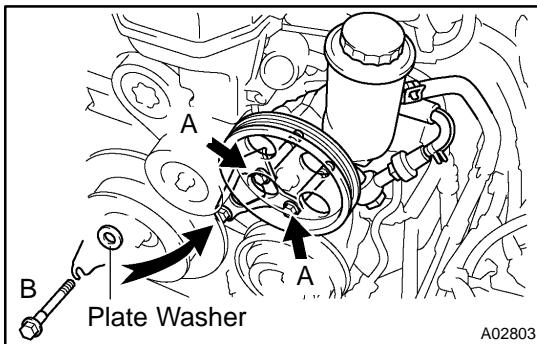
**Torque: 8.0 N·m (80 kgf·cm, 71 in.-lbf)**

**21. INSTALL NO. 3 TIMING BELT COVER**

- (a) Install the gasket on the timing belt cover.
- (b) Using a 5 mm hexagon wrench, install the timing belt cover with the 4 bolts.

**Torque: 8.0 N·m (80 kgf·cm, 71 in.-lbf)**

- (c) Install the oil filler cap.

**22. INSTALL PS PUMP AND FRONT BRACKET**

- (a) Temporarily install the vane pump to the bracket.
- (b) Install the plate washer and front bracket with the 3 bolts.

**Torque:**

**58 N·m (590 kgf·cm, 43 ft·lbf) for bolt A**

**52 N·m (530 kgf·cm, 38 ft·lbf) for bolt B**

**23. INSTALL DRIVE BELT (See page [CH-1](#))****24. M/T:****INSTALL DRIVE BELT TENSIONER ABSORBER**

Install the absorber with the 2 nuts.

**Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)**

**25. INSTALL RADIATOR ASSEMBLY (See page [CO-24](#))****26. FILL ENGINE WITH COOLANT****27. START ENGINE CHECK FOR LEAKS****28. INSTALL ENGINE UNDER COVER****29. ROAD TEST**

Check for abnormal noise, shock, slippage, correct shift points and smooth operation.

**30. RECHECK ENGINE COOLANT LEVEL**