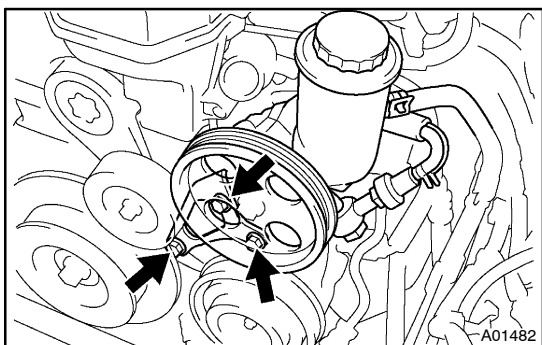


## REMOVAL

1. REMOVE ENGINE UNDER COVER
2. DRAIN ENGINE COOLANT
3. REMOVE RADIATOR ASSEMBLY (See page CO-15)
4. REMOVE DRIVE BELT (See page CH-1)

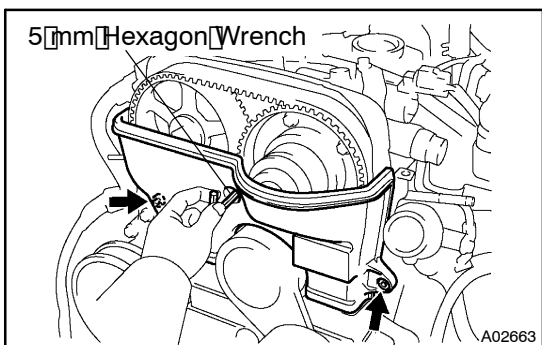


### 5. REMOVE PS PUMP AND FRONT BRACKET

- (a) Remove the 3 bolts, plate washer and pump front bracket.
- (b) Disconnect the yane pump from the bracket.

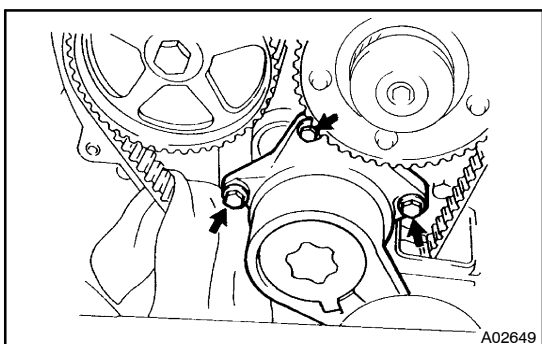
### 6. REMOVE NO. 3 TIMING BELT COVER

Using a 5 mm hexagon wrench, remove the 4 bolts, oil filler cap, timing belt cover and gasket.



### 7. REMOVE NO. 2 TIMING BELT COVER

Using a 5 mm hexagon wrench, remove the 3 bolts, timing belt cover and gasket.

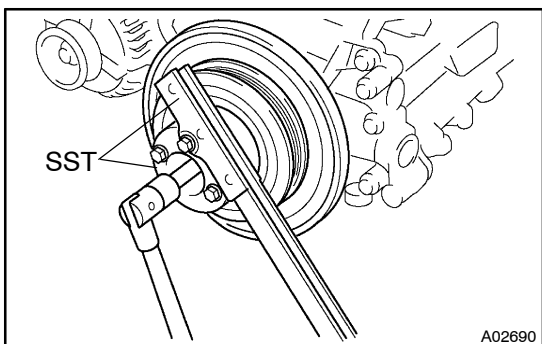


### 8. REMOVE DRIVE BELT TENSIONER

Remove the 3 bolts and tensioner.

#### NOTICE:

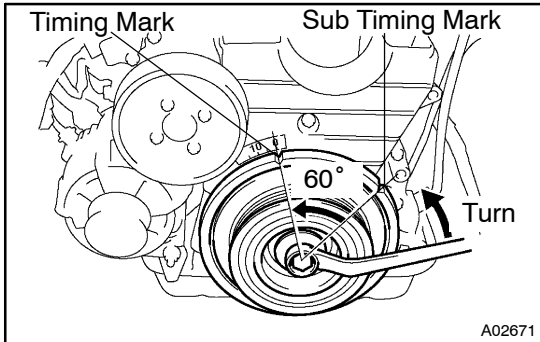
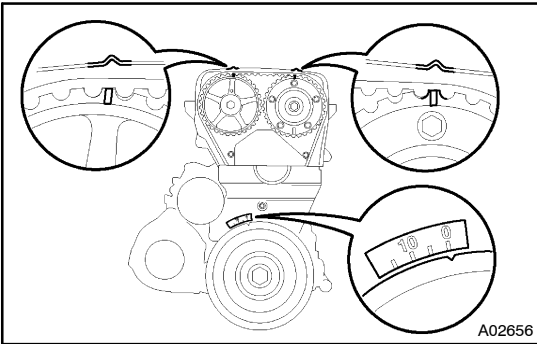
Be careful not to drop the bolts inside the timing belt cover.



### 9. LOOSEN CRANKSHAFT PULLEY BOLT

Using SST, loosen the pulley bolt.

SST 09213 - 70011, 09330 - 00021



## 10. SET NO. 1 CYLINDER TO APPROX. 60° / BTDC COMPRESSION

- (a) Turn the crankshaft pulley, and align its groove with timing mark "0" of the No. 1 timing belt cover.

### NOTICE:

**Always turn the crankshaft clockwise.**

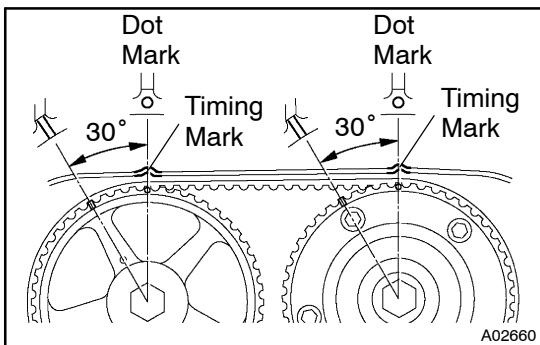
- (b) Check that the timing marks (TDC mark) of the camshaft timing pulleys are aligned with the timing marks of the No. 4 timing belt cover.

If not, turn the crankshaft 1 revolution (360°).

- (c) Turn the crankshaft pulley 60° counterclockwise to place the sub timing mark (60° mark BTDC) on the crankshaft pulley at the timing mark "0" position of the No. 1 timing belt cover.

### NOTICE:

**If the timing belt is disengaged, having the crankshaft pulley at the wrong angle can cause the piston head and valve head to come into contact with each other when you remove the camshaft timing pulleys (steps 11 to 17), thus resulting damage. So, always set the crankshaft pulley at the correct angle.**

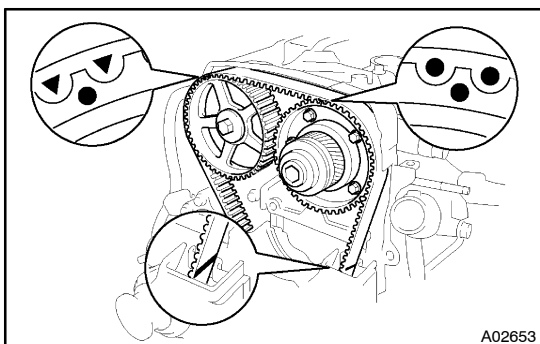


- (d) Check that the dot marks (60° mark BTDC) of the camshaft timing pulleys are aligned with the timing marks of the No. 4 timing belt cover.

- (e) Remove the crankshaft pulley bolt.

### NOTICE:

**Do not turn the crankshaft pulley.**

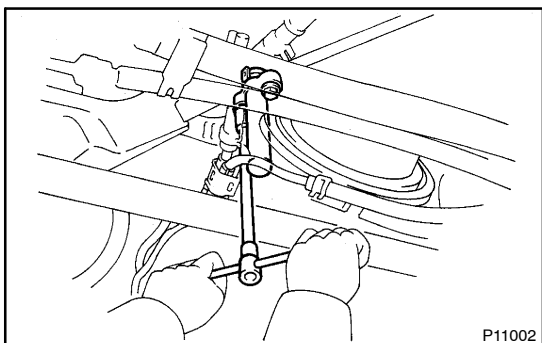


## 11. REMOVE TIMING BELT FROM CAMSHAFT TIMING PULLEYS

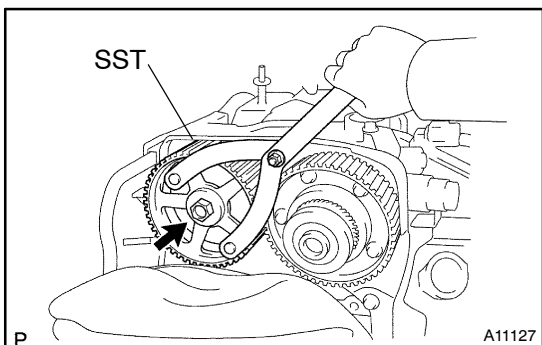
### HINT:

(Re-using timing belt):

Place matchmarks on the timing belt and camshaft timing pulleys as shown in the illustration.



- (a) Alternately loosen the 2 bolts, and remove them, the tensioner and dust boot.
- (b) Disconnect the timing belt from the camshaft timing pulleys.



## 12. REMOVE EXHAUST CAMSHAFT TIMING PULLEY

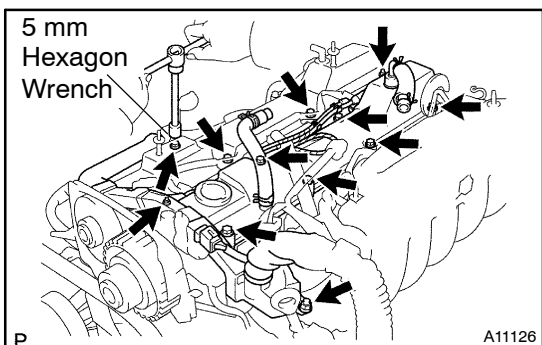
Using SST, remove the bolt and timing pulley.

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

## 13. REMOVE ENGINE COVER

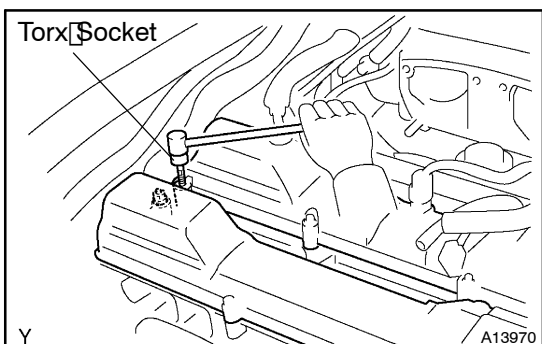
Remove the 4 nuts and engine cover.

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



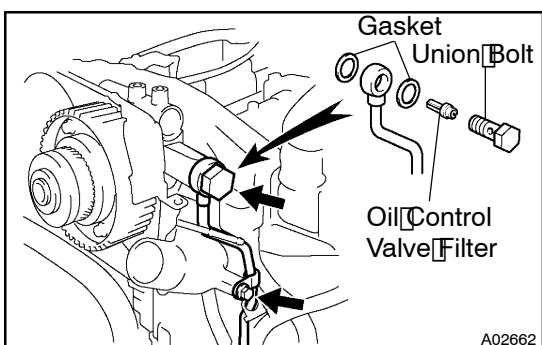
## 15. REMOVE NO. 1 CYLINDER HEAD COVER

- (a) Using a 5 mm hexagon wrench, remove the bolts, and disconnect the engine wire protector from the No. 2 cylinder head cover.
- (b) Remove the nut, and disconnect the engine wire protector from the intake manifold.
- (c) Remove the 2 bolts, and disconnect the high-tension cords with the clamp from the No. 2 cylinder head.



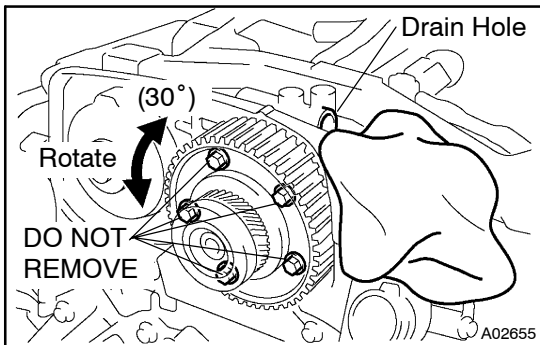
- (e) Remove the 2 nuts from the No. 1 cylinder head cover.
- (f) Using a Torx socket (E5), remove the 2 stud bolts.
- (g) Remove the 6 bolts, No. 1 cylinder head cover and gasket.

## 16. REMOVE CAMSHAFT TIMING OIL CONTROL VALVE (See page FI-43)



## 17. DISCONNECT NO. 1 OIL PIPE

Remove the bolt, union bolt, oil control valve filter and 2 gaskets, and disconnect the No. 1 oil pipe from the No. 3 camshaft bearing cap.



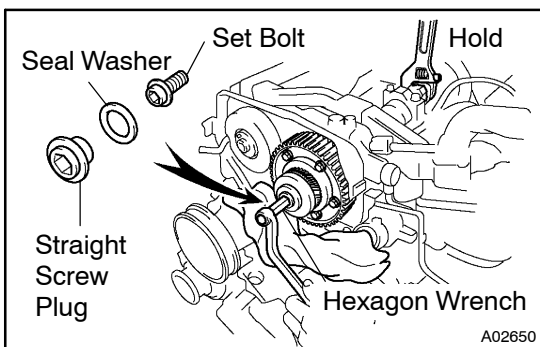
## 18. REMOVE VVT-i (INTAKE CAMSHAFT TIMING) PULLEY

### NOTICE:

- The 5 bolts shown in the illustration determine the backlash of the gear in the timing pulley, so do not remove them.
  - If any of the 5 bolts are removed, install a new camshaft timing pulley assembly.
  - When removing the straight screw plug, follow the prescribed procedure in order to avoid spilling oil on the timing system parts.
- (a) Rotate the VVT-i pulley from left to right 2 to 3 times within its range of movement (30°) and use a waste cloth to collect the oil from the camshaft timing oil control valve installation hole.

### NOTICE:

Approximately 20 cc (1.2 cu in.) of oil will be ejected, so take care not to spill it.

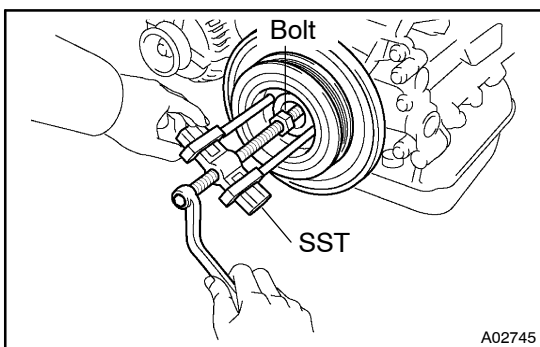


- (b) Holding the hexagon portion of camshaft with a wrench.
- (c) Using a 14 mm hexagon wrench, remove the straight screw plug and seal washer.

### NOTICE:

Some oil may spill, so put a waster cloth below the plug while doing the operation.

- (d) Using a 10 mm hexagon wrench, and remove the set bolt and VVT-i pulley.
- (e) Remove the wrench.



## 19. REMOVE CRANKSHAFT PULLEY

Using SST and bolt (diameter: 8 mm, pitch: 1.5 mm), remove the crankshaft pulley.

SST 09950-50013 (09951-05010, 09552-05010, 09553-05020, 09554-05031)

Bolt: Part No. 90119-18001

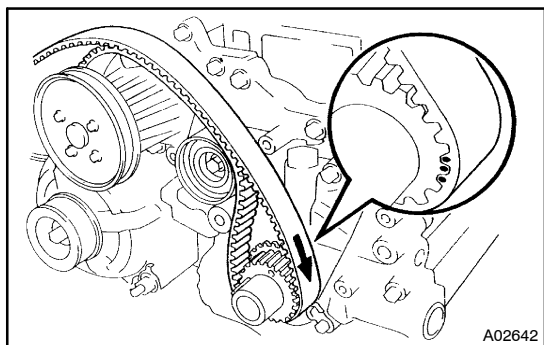
### NOTICE:

Do not turn the crankshaft pulley.

## 20. REMOVE NO. 1 TIMING BELT COVER

Remove the 5 bolts, timing belt cover and gasket.

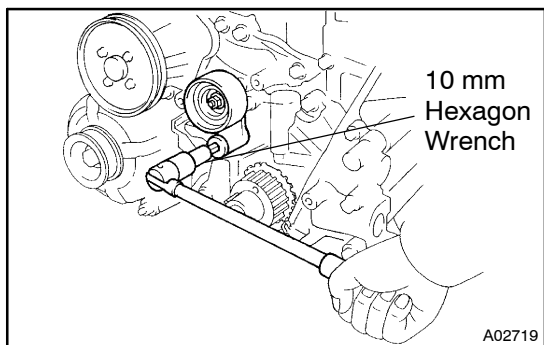
## 21. REMOVE TIMING BELT GUIDE

**22. REMOVE TIMING BELT**

HINT:

(When re-using timing belt):

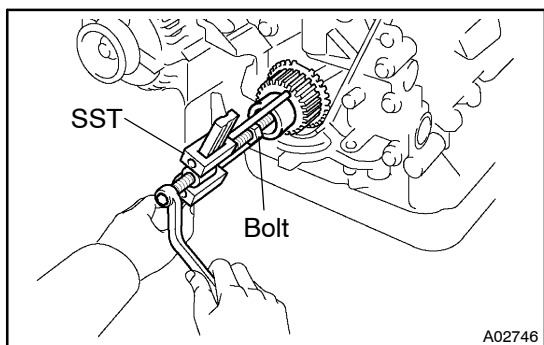
Draw an arrow on the timing belt in the direction of engine revolution, and place matchmarks on the timing belt and crankshaft timing pulley.

**23. REMOVE IDLER PULLEY**

Using a 10 mm hexagon wrench, remove the pivot bolt, plate washer and idler pulley.

**24. REMOVE CRANKSHAFT TIMING PULLEY**

(a) Remove the bolt and timing belt plate.



(b) Remove the crankshaft timing pulley.

If the pulley cannot be removed by hand, use SST and bolt (diameter: 8 mm, pitch: 1.5 mm) to remove the crankshaft timing pulley.

SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05011)

Bolt: Part No. 90119-18001

**NOTICE:**

- Do not scratch the sensor part the crankshaft timing pulley.
- Do not turn the timing pulley.