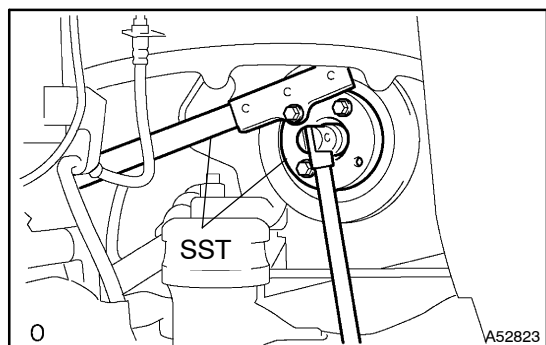


# TIMING BELT (3MZ-FE)

## REPLACEMENT

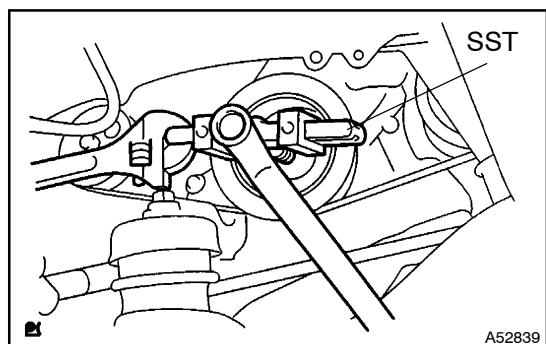
141RN-01

1. REMOVE FRONT WHEEL RH
2. REMOVE FR WIPER ARM LH (See page 66-7)
3. REMOVE FR WIPER ARM RH (See page 66-7)
4. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSY (See page 66-7)
5. REMOVE WINDSHIELD WIPER LINK ASSY (See page 66-7)
6. REMOVE COWL PANEL SUB-ASSY
7. REMOVE ENGINE UNDER COVER NO.1
8. REMOVE FRONT FENDER APRON SEAL RH
9. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 14-5)
10. REMOVE VANE PUMP V BELT (See page 14-5)
11. REMOVE ENGINE MOVING CONTROL ROD (See page 14-5)
12. REMOVE ENGINE MOUNTING STAY NO.2 RH (See page 14-5)
13. REMOVE GENERATOR BRACKET NO.2



### 14. REMOVE CRANKSHAFT PULLEY

- (a) Using SST, loosen the pulley bolt.  
SST 09213-54015 (91651-60855), 09330-00021

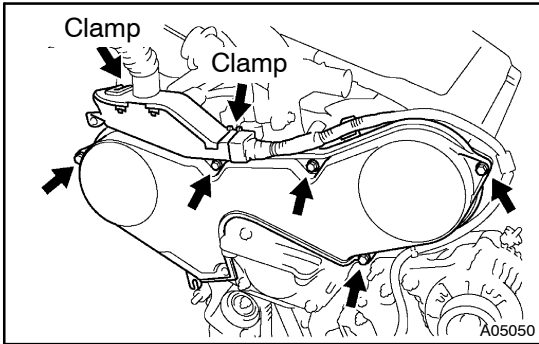


- (b) Using SST and the pulley bolt, remove the pulley.  
SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05031)

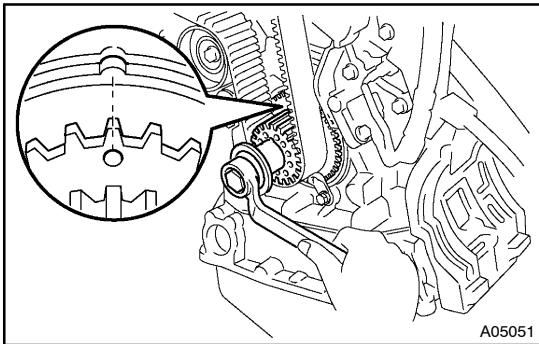
#### NOTICE:

Before using SST, apply lubricating oil to the threads and tip of the center bolt 100.

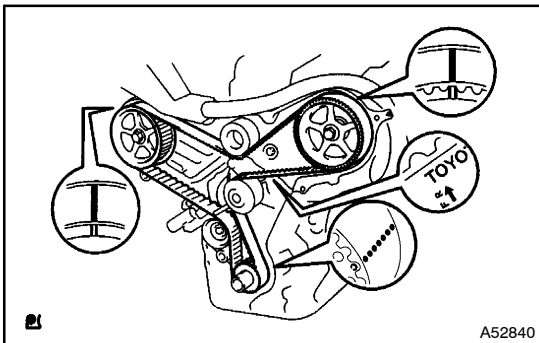
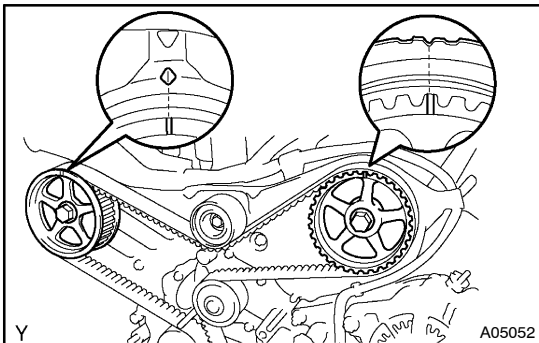
### 15. REMOVE TIMING BELT NO.1 COVER

**16. REMOVE TIMING BELT NO.2 COVER**

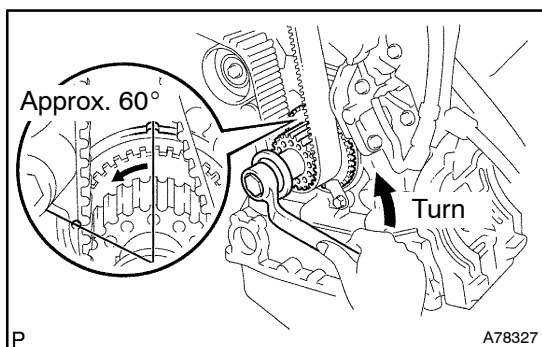
- (a) Disconnect the engine wire protector clamps from the timing belt No. 3 cover.
- (b) Remove the 5 bolts and timing belt cover.

**17. REMOVE ENGINE MOUNTING BRACKET RH****18. REMOVE TIMING BELT GUIDE NO.2****19. REMOVE TIMING BELT**

- (a) Set the No. 1 cylinder to TDC/compression.
  - (1) Temporarily install the crankshaft pulley bolt with the washer to the crankshaft.
  - (2) Turn the crankshaft clockwise, and align the timing marks of the crankshaft timing pulley and oil pump body.
  - (3) Check that the timing marks of the camshaft timing pulleys and No. 3 timing belt cover are aligned. If not, turn the crankshaft 1 revolution (360°).
  - (4) Remove the crankshaft pulley bolt.



- (b) If planning to reuse the timing belt, check that there are 4 installation marks on the timing belt as shown in the illustration.
  - (1) If the installation marks have disappeared, put new installation marks on the timing belt before removal.



(c) Set the No. 1 cylinder to approximately 60° BTDC/compression.

(1) Turn the crankshaft counterclockwise by approximately 60°.

**NOTICE:**

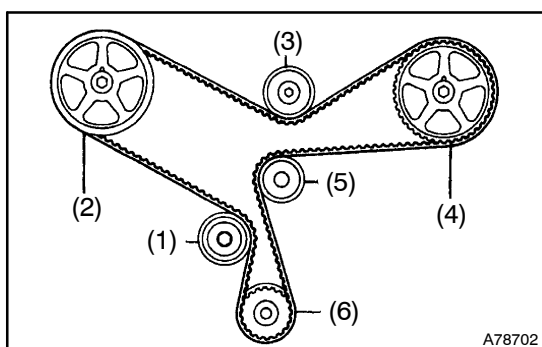
**With the timing belt removed:**

**The crankshaft pulley must be at the correct angle to avoid damage in later steps. If the crankshaft pulley is at the wrong angle and then the camshaft timing pulley and the camshaft are removed, the piston head and valve head may come in contact and be damaged.**

(d) Remove the timing belt tensioner.

**NOTICE:**

**Do not reinstall the tensioner with its plunger extended.**



(e) Remove the timing belt in this order.

1st	No. 1 idler pulley
2nd	RH camshaft timing pulley
3rd	No. 2 idler pulley
4th	LH camshaft timing pulley
5th	Water pump pulley
6th	Crankshaft timing pulley

## 20. INSPECT TIMING BELT

**NOTICE:**

- **Do not bend, twist or turn the timing belt inside out.**
- **Do not allow the timing belt to come in contact with oil, water or steam.**
- **Do not utilize timing belt tension when installing the mounting bolt of the camshaft timing pulley.**

**HINT:**

Check the belt for any defects shown in the installation. Also, check these points below.

- If there is premature parting:
  - Check for proper installation.
  - Check that the timing cover gasket has no damage and properly installed.
- If the belt teeth are cracked or damaged, check to see if either camshaft is locked.
- If there is noticeable wear or cracks on the belt face, check to see if there are nicks on the side of the idler pulley lock and water pump.
- If there is wear or damage on only one side of the belt, check the belt guide and the alignment of each pulley.

- (e) If there is noticeable wear on the belt teeth:
- Check the timing cover for damage.
  - Check that the gasket has been installed correctly.
  - Check for foreign objects on the pulley teeth.

If there is any doubt about the belt condition, replace the timing belt.

## 21. INSTALL TIMING BELT

- (a) Remove any oil or water on the pulleys, and keep them clean.

### NOTICE:

- **If there is a trace of water and/or oil on the timing belt, repair the leakage and install a new timing belt.**
- **Do not use cleaning agents on the pulleys when cleaning them.**

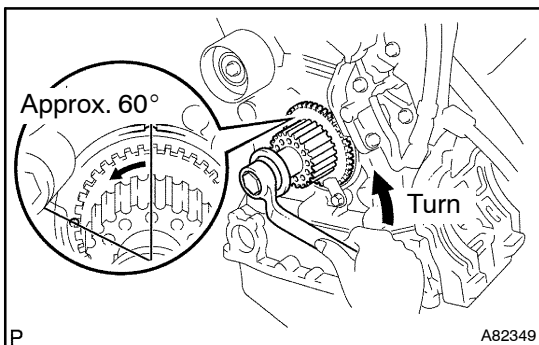
- (b) Inspect the idler pulleys.
- (1) Check that the idler pulleys turn smoothly.
  - (2) Visually check the sealed portion of the idler pulleys for oil leakage.

If there is any doubt about the idler pulleys condition, replace the idler pulleys.

- (c) Inspect the water pump.
- (1) Turn the pulley, and check that the water pump bearing moves smoothly without any noise.
  - (2) Visually check the drain hole for coolant leakage.

If there is any doubt about the water pump condition, replace the water pump.

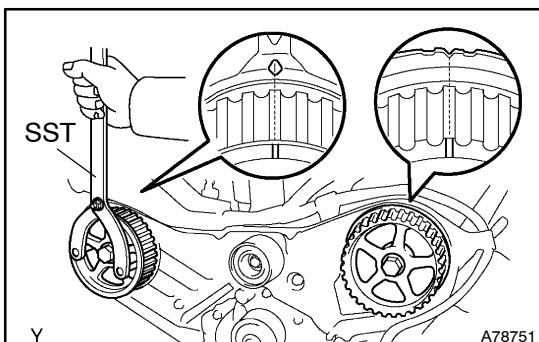
- (d) Temporarily install the crankshaft pulley bolt and washer to the crankshaft.



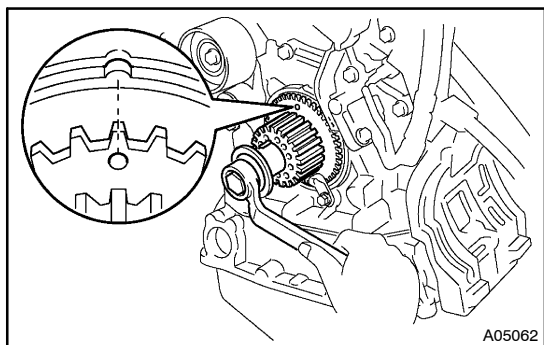
- (e) Turn the crankshaft counterclockwise by approximately 60°.

### NOTICE:

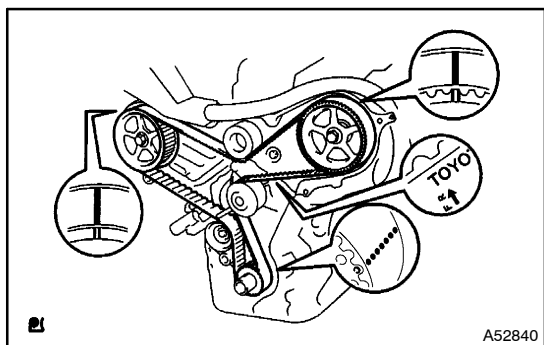
**To prevent the piston head and the valve head from colliding, set the crankshaft pulley at approximately 60° BTDC/compression position.**



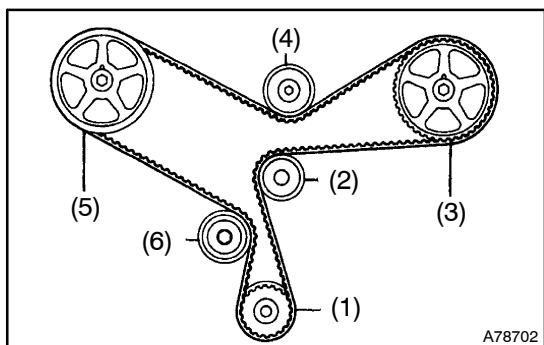
- (f) Using SST, turn the timing pulleys, and align the timing marks of the timing pulleys with the No. 3 timing belt cover.  
SST 09960-10010 (09962-01000, 09963-01000)



- (g) Turn the crankshaft, and align the timing mark of the crankshaft timing pulley with the oil pump body.



- (h) Face the front mark on the timing belt forward.  
 (i) Align the installation mark on the timing belt with the timing mark of the crankshaft timing pulley.  
 (j) Align the installation marks on the timing belt with the timing marks of the camshaft timing pulleys.



- (k) Install the timing belt in this order.

1st	Crankshaft timing pulley
2nd	Water pump pulley
3rd	LH camshaft timing pulley
4th	No. 2 idler pulley
5th	RH camshaft timing pulley
6th	No. 1 idler pulley

## 22. INSTALL TIMING BELT TENSIONER ASSY

- (a) Set the timing belt tensioner upright on the press.  
 (b) Slowly press in the push rod.

### NOTICE:

**Do not apply pressure of more than 9.8 kN (1,000 kgf, 2,205 lbf) to the rod.**

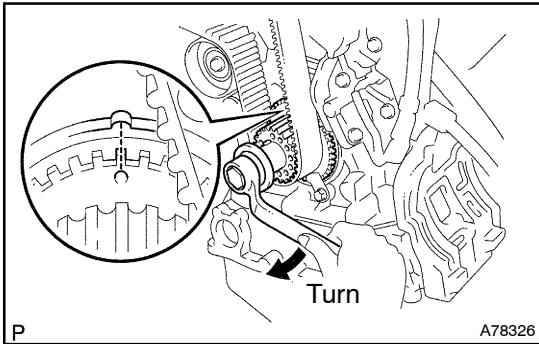
- (c) Align the holes of the push rod and housing, pass a 1.5 mm hexagon wrench through the holes to keep the setting position of the push rod.  
 (d) Release the push rod.  
 (e) Temporarily install the tensioner with the 2 bolts.

**Torque: 27 N·m (275 kgf·cm, 20 ft·lbf)**

### NOTICE:

**Install the tensioner's bolts uniformly and evenly. Installing the tensioner at an angle may cause it to malfunction.**

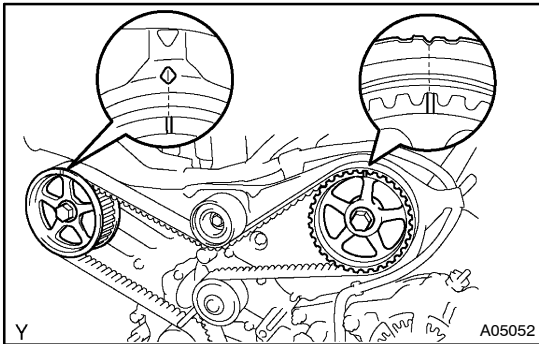
- (f) Remove the 1.5 mm hexagon wrench from the tensioner.



- (g) Turn the crankshaft 2 revolutions slowly and align the timing mark of the crankshaft timing pulley with the oil pump body.

**NOTICE:**

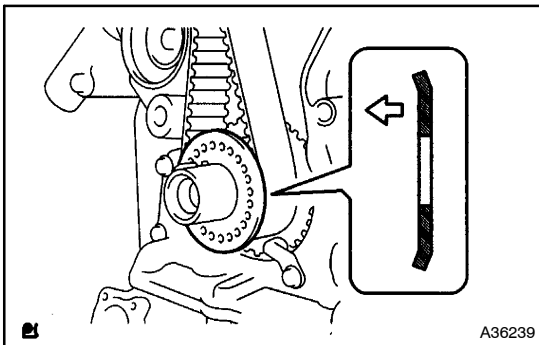
**Always turn the crankshaft clockwise.**



- (h) Check that the timing marks of the RH and LH timing pulleys are aligned with the timing marks of the No. 3 timing belt cover as shown in the illustration.

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

- (i) Remove the crankshaft pulley bolt.

**23. INSTALL TIMING BELT GUIDE NO.2**

- (a) Install the timing belt guide, facing the cup side toward the engine front.

**24. INSTALL ENGINE MOUNTING BRACKET RH**

**Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)**

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

- (a) Visually check for cracks and breaks on the gasket of the timing belt cover. If water has entered due to a damaged gasket, replace the timing belt cover.

- (b) Install the timing belt cover.

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

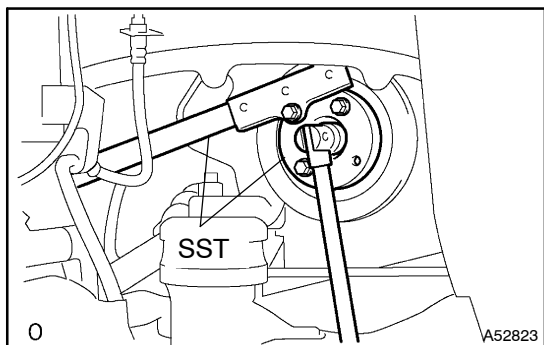
**26. INSTALL TIMING BELT NO.1 COVER**

- (a) Visually check for cracks and breaks on the gasket of the timing belt cover. If water has entered due to a damaged gasket, replace the timing belt cover.

- (b) Install the timing belt cover.

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

- (c) Install the engine wire protector cover to the timing belt No. 3 cover.

**27. INSTALL CRANKSHAFT PULLEY**

- (a) Align the pulley set key with the key groove of the pulley, and slide on the pulley.
- (b) Using SST, install the pulley bolt.

SST 09213-54015 (91651-60855), 09330-00021

**Torque: 220 N·m (2,243 kgf·cm, 162 ft·lbf)**

**28. INSTALL GENERATOR BRACKET NO.2**

**Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)**

**29. INSTALL ENGINE MOUNTING STAY NO.2 RH (See page 14-24)****30. INSTALL ENGINE MOVING CONTROL ROD (See page 14-24)****31. INSTALL VANE PUMP V-BELT (See page 14-5)****32. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 14-5)****33. INSPECT V-BELT (See page 14-1)****34. INSTALL FRONT FENDER APRON SEAL RH****35. INSTALL ENGINE UNDER COVER NO.1****36. INSTALL COWL PANEL SUB-ASSY****37. INSTALL WINDSHIELD WIPER LINK ASSY (See page 66-7)****38. INSTALL FR WIPER ARM LH (See page 66-7)****39. INSTALL FR WIPER ARM RH (See page 66-7)****40. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSY (See page 66-7)****41. INSTALL FRONT WHEEL RH**