OIL PUMP SEAL (1MZ–FE)

140I8–01

REPLACEMENT

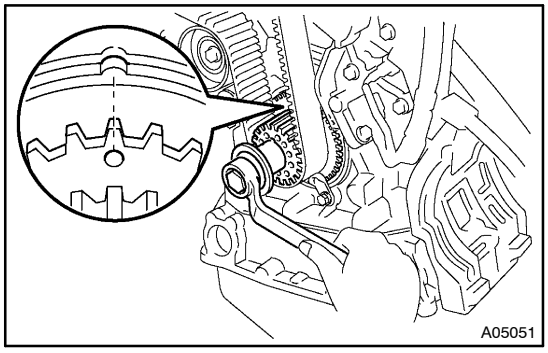
1. **REMOVE FRONT WHEEL RH**
2. **REMOVE FRONT FENDER APRON SEAL RH**

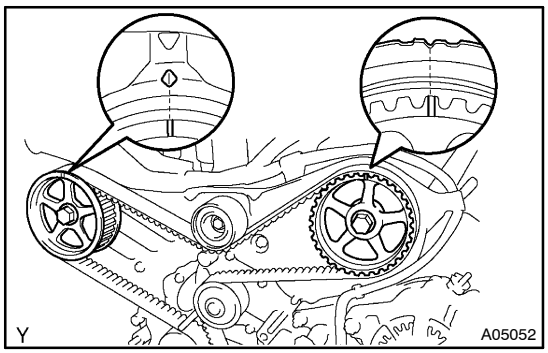
3. **REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**
   (See page 14–141)
4. **REMOVE VANE PUMP V BELT**
   (See page 14–141)
5. **REMOVE ENGINE MOVING CONTROL ROD**
   (See page 14–156)
6. **REMOVE ENGINE MOUNTING STAY NO.2 RH**
   (See page 14–156)
7. **REMOVE GENERATOR BRACKET NO.2**

8. **REMOVE CRANKSHAFT PULLEY**
   (See page 14–174)
   SST 09213–54015 (91651–60855), 09330–00021, 09950–50013 (09951–05010, 09952–05010, 09953–05010, 09954–05030)
9. **REMOVE TIMING BELT NO.1 COVER**

10. **REMOVE TIMING BELT NO.2 COVER**
    (See page 14–174)
11. **REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET**

12. **REMOVE TIMING BELT GUIDE NO.2**





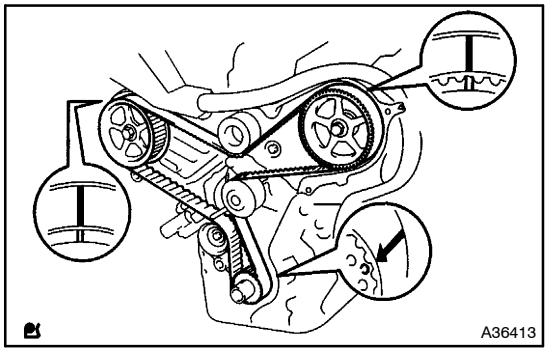
13. **REMOVE TIMING BELT**

(a) Set 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 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) Place 3 installation marks and front mark on the timing belt.

HINT:

It is not necessary if the marks are still existed.

(1) Place 3 new installation marks on the timing belt to match the timing marks of the timing pulleys.

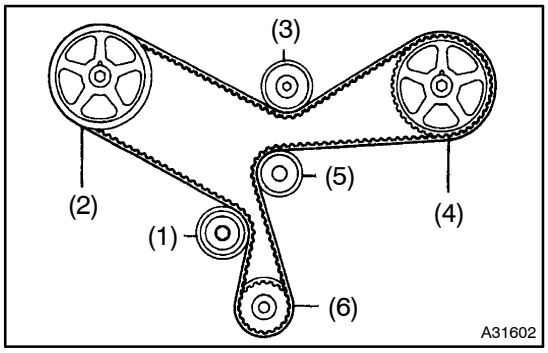
(2) Place a new front mark on the timing belt.

(c) Remove the timing belt tensioner.

NOTICE:

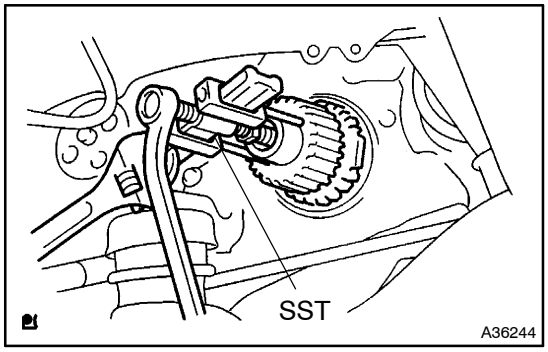
Do not install the tensioner as it removed.

(d) 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

14. REMOVE TIMING BELT PLATE



15. REMOVE CRANKSHAFT TIMING PULLEY

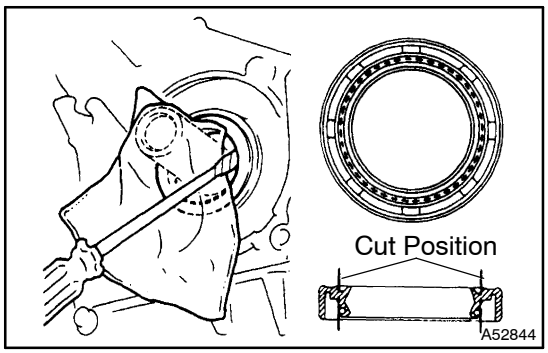
(a) Install the pulley bolt to the crankshaft.

(b) Using SST, remove the crankshaft timing pulley.

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

NOTICE:

- **Do not scratch the sensor part of the crankshaft timing pulley.**
- **Before using SST, apply lubricating oil on the threads and tip of the center bolt 150.**



16. REMOVE OIL PUMP SEAL

(a) Using a knife, cut off the oil seal lip.

(b) Using a screwdriver with taping its tip, pry out the oil seal.

NOTICE:

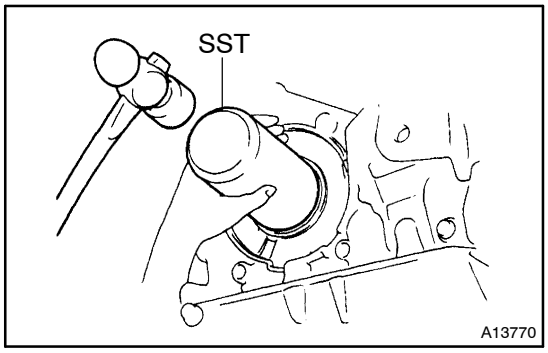
After the removal, check if the crankshaft is not damaged. If it is damaged, mend it with a sandpaper (#400).

17. INSTALL OIL PUMP SEAL

(a) Apply MP grease to a new oil seal lip.

NOTICE:

Keep the lip off foreign materials.

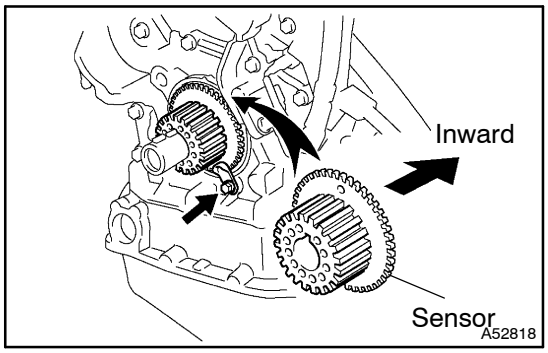


(b) Using SST and a hammer, tap in the oil seal until its surface is flush with the oil pump edge.

SST 09223–00010

NOTICE:

- **Be careful not to tap the oil seal slantingly.**
- **Wipe off extra grease on the crankshaft.**



18. INSTALL CRANKSHAFT TIMING PULLEY

(a) Align the pulley set key with the key groove of the timing pulley, and slide on the timing pulley.

NOTICE:

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

(b) Install the timing belt plate with the bolt.

Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

19. INSPECT TIMING BELT

(See page 14–174)

20. INSTALL TIMING BELT

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

NOTICE:

- **If adherence of water and/or oil to the timing belt is found, restore the leakage and install a new timing belt.**
- **Wipe only the pulleys; do not use any cleansing agent.**

(b) Inspect the idler pulleys.

(1) Check that the idler pulley turns smoothly.

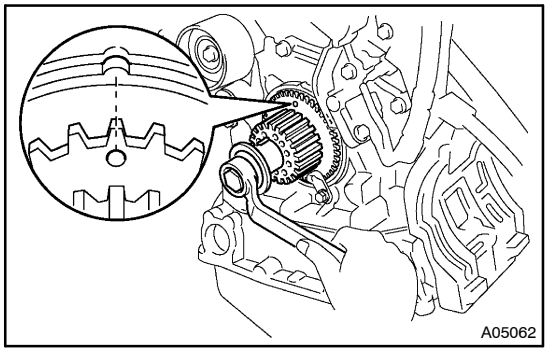
(2) Visually check the seal portion of the idler pulley for oil leakage.

(c) Inspect the water pump.

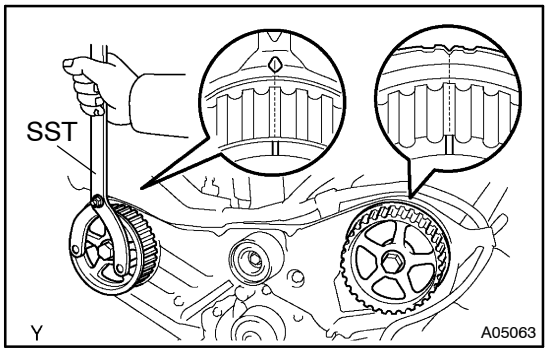
(1) Turn the pulley, and check that water pump bearing moves smoothly and quitely.

(2) Visually check the drain hole for coolant leakage.

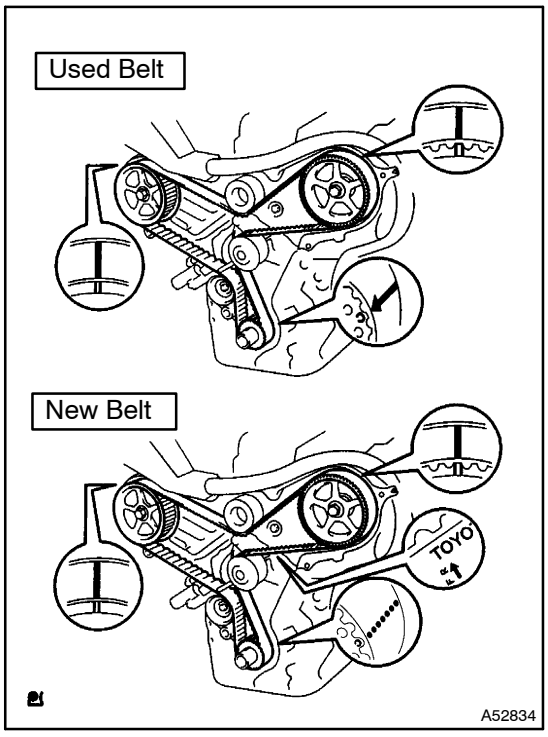
(d) Temporarily install the crankshaft pulley bolt and washer to the crankshaft.



(e) Turn the crankshaft, and align the timing marks of the crankshaft timing pulley and oil pump body.

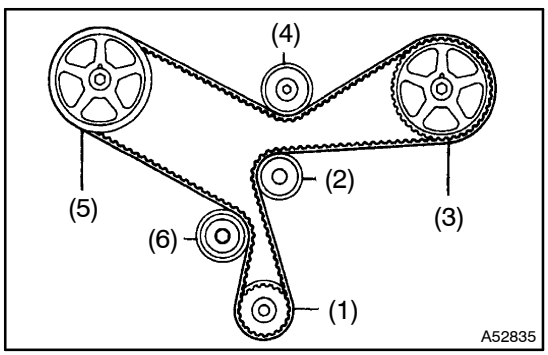


(f) Using SST, turn the camshaft pulley, align the timing marks of the timing pulley and No. 3 timing belt cover.
SST 09960–10010 (09962–01000, 09963–01000)



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

HINT:
The installation marks are placed when the timing belt is removed, or printed originally are used as match marks.



(j) 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

21. INSTALL CHAIN TENSIONER ASSY NO.1
(See page 14–174)
22. INSTALL TIMING BELT GUIDE NO.2
(See page 14–174)
23. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING BRACKET

Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)
24. INSTALL TIMING BELT NO.2 COVER
(See page 14–174)
25. INSTALL TIMING BELT NO.1 COVER
(See page 14–174)
26. INSTALL CRANKSHAFT PULLEY
(See page 14–174)
SST 09213–54015 (91651–60855), 09330–00021
27. INSTALL GENERATOR BRACKET NO.2

Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)
28. INSTALL ENGINE MOUNTING STAY NO.2 RH
(See page 14–156)
29. INSTALL ENGINE MOVING CONTROL ROD
(See page 14–156)
30. INSTALL VANE PUMP V BELT
(See page 14–141)
31. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1
(See page 14–141)
32. INSPECT DRIVE BELT DEFLECTION AND TENSION(REFERENCE) (See page 14–137)
33. INSTALL FRONT WHEEL RH
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
34. INSPECT OIL LEAK