1411N–01

REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB–ASSY NO.1

2. DRAIN ENGINE COOLANT (See page 16–50)

3. REMOVE RADIATOR SUPPORT SEAL UPPER

(a) Remove the 11 clips and radiator support seal upper.

4. REMOVE WIRE HARNESS (W/ COLD AREA)

(a) Remove the wire harness from fan shroud.

5. REMOVE RADIATOR RESERVE TANK ASSY

(a) Remove the radiator reserve tank hose first, and then remove the 3 bolts and radiator reserve tank.

6. REMOVE RADIATOR HOSE NO.1

7. REMOVE FAN AND GENERATOR V BELT (See page 14–189)

HINT:

Loosen the 4 nuts for the fan with fluid coupling assy in advance.

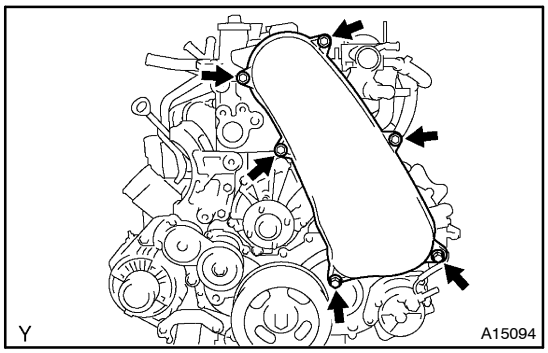
8. REMOVE FAN SHROUD

(a) Remove the oil cooler inlet hose and outlet hose from the hose clamp. (AT TRANSMISSION)

(b) Remove the 4 nuts for the fan with fluid coupling assy and 2 bolts for the fan shroud.

(c) Remove the fan with fluid coupling assy together with the fan shroud.

9. REMOVE FAN PULLEY

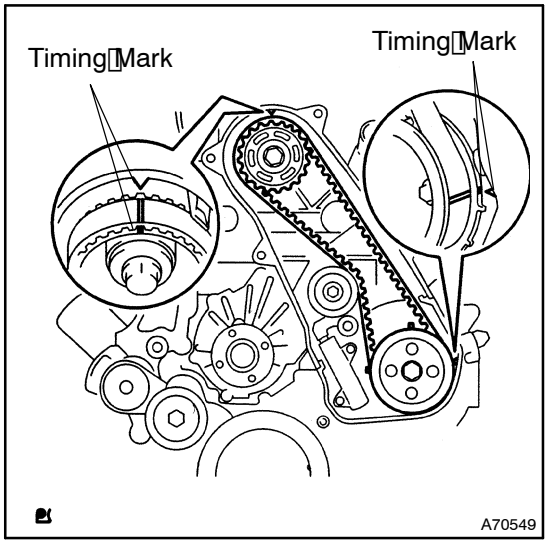


10. REMOVE TIMING BELT NO.1 COVER

(a) Remove the bolt and water hose clamp.

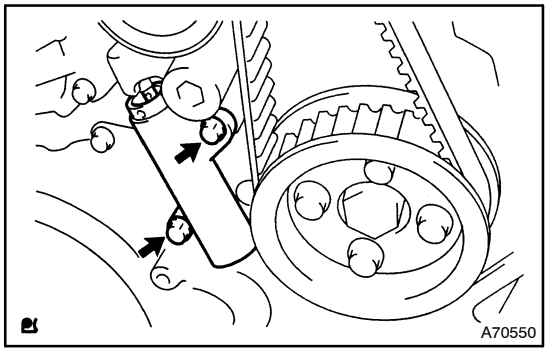
(b) Remove the wire harness clamp.

(c) Remove the 6 bolts and timing belt cover No. 1.



11. REMOVE TIMING BELT

(a) Turn the crankshaft in the clockwise direction and align the alignment as the illustration.

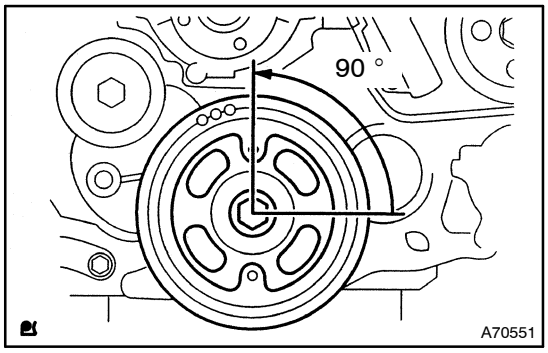


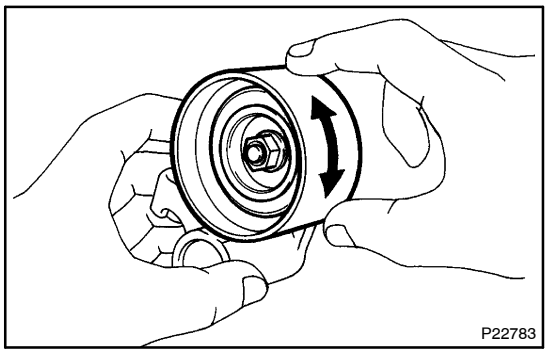
(b) Uniformly, loosen the 2 bolts, remove the timing belt tensioner.

(c) Remove the timing belt.

HINT:

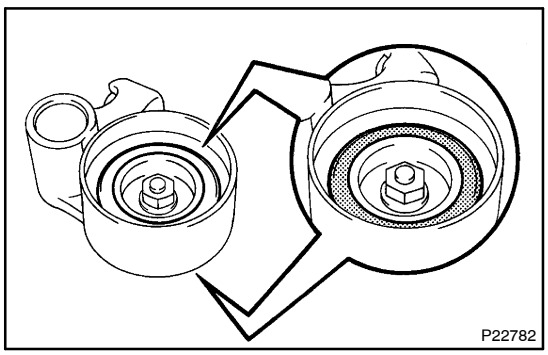
- When turning the camshaft while the timing belt is removed, turn the crankshaft 90° counterclock wise.
- When installing the timing belt, it is necessary to return the camshaft to the timing marks and then turn the crankshaft clockwise, it aligns with the timing marks as shown in the illustration.





12. INSPECT TIMING BELT IDLER SUB–ASSY NO.1

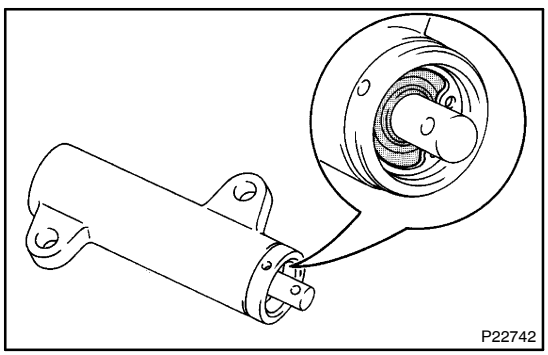
(a) Check that the idler pulley turns smoothly by hand.



(b) Visually check the seal portion of the idler pulley has not grease.

NOTICE:

- **Do not bend, twist or turn the timing belt inside out.**
- **Do not allow the timing belt and each pulley to come into contact with oil, water or steam.**
- **Before installing, be sure to clean up each pulley with a rag.**
- **Do not remove the timing belt idler No. 1, except for if it necessary.**



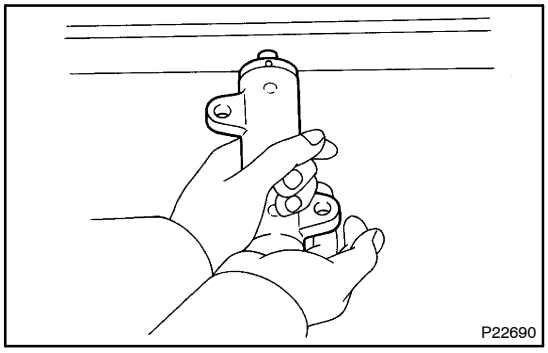
13. INSPECT CHAIN TENSIONER ASSY NO.1

(a) Visually check the seal portion of the tensioner for oil leakage.

HINT:

If there is only the faintest trace of oil on the seal on the push rod side, the tensioner is all right.

If leakage is found, replace the tensioner.

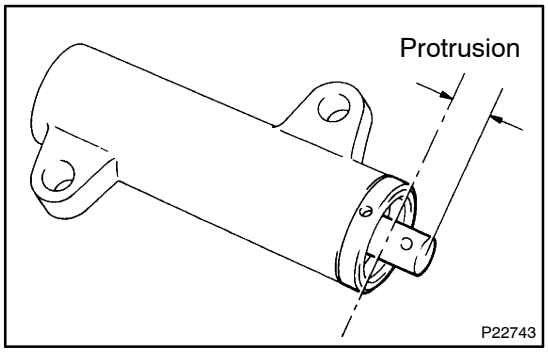


(b) Hold the tensioner with both hands and push the push rod strongly as shown to check that it doesn't move.

If the push rod moves, replace the tensioner.

NOTICE:

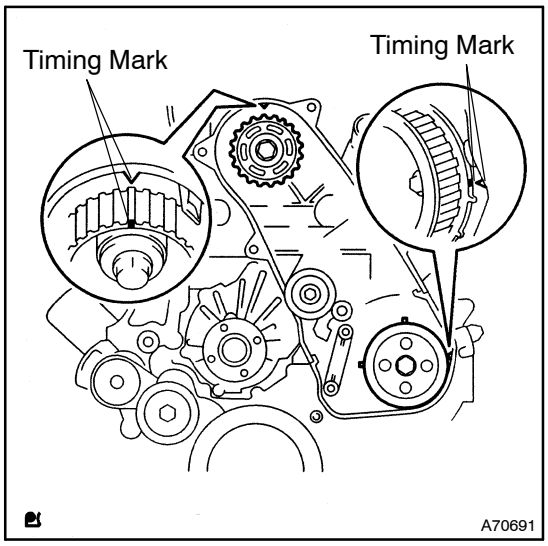
Never hold the tensioner push rod facing downward.



(c) Measure the protrusion of the push rod from the housing end.

Protrusion: 8.1 – 8.9 mm (0.319 – 0.350 in.)

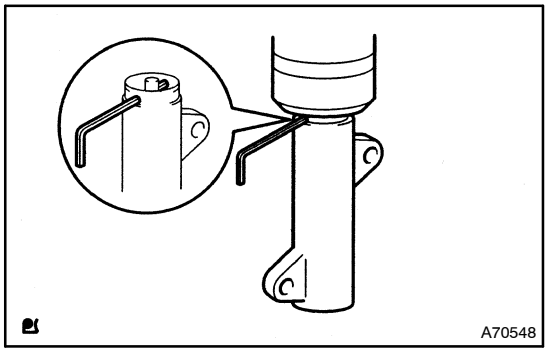
If the protrusion is not as specified, replace the tensioner.



14. INSTALL TIMING BELT

(a) Check that the timing marks are aligned as the illustration.

(b) Install the timing belt to pump drive shaft pulley, camshaft timing pulley and timing belt idler No. 1 in sequence.



(c) Set the tensioner to the press up–right.

NOTICE:

- **Do not allow the rod end to scratch and deform.**
- **Press the tensioner rod in up–ward.**
- **Protect a tip of the push rod with a waste in order to prevent damage.**

(d) Using a press, slowly push in the push rod using 981 – 9,807 N (100 – 1,000 kgf, 220 – 2,205 lbf) of force.

NOTICE:

Do not impose loads 9,807 N (100 – 1,000 kgf, 220 – 2,205 lbf) and more on the push rod.

(e) Align the holes of push rod and housing, pass a 1.27 mm hexagon wrench through the holes to keep the setting position of the push rod.

(f) Temporarily install the timing belt tensioner with the 2 bolts while pushing the idler pulley toward the timing belt.

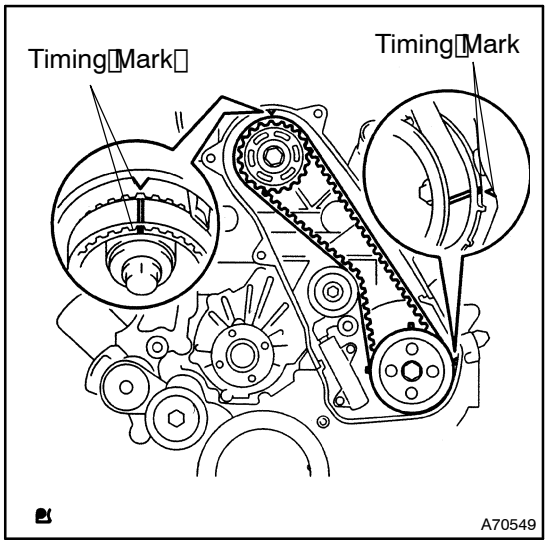
(g) Tighten the 2 bolts.

Torque: 13 N·m (133 kgf·cm, 10 ft·lbf)

NOTICE:

Uniformly tighten the 2 bolts and install the tensioner

(h) Remove the 1.5 mm hexagon wrench from the tensioner.



(i) Turn the crankshaft in the clockwise direction twice, check that the timing marks are aligned as the illustration.

15. INSTALL TIMING BELT NO.1 COVER

(a) Install the timing belt No. 1 cover with the 6 bolts.

Torque: 6 N·m (61 kgf·cm, 53 in.·lbf)

(b) Install the wire harness clamp.

(c) Install the water hose clamp with the bolt.

Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

16. INSTALL FAN PULLEY

17. INSTALL FAN SHROUD

(a) Temporarily place the fan shroud together with the fan with fluid coupling assy to the correct location inside the engine room first.

(b) Install the fan shroud to the radiator with the 2 bolts.

Torque: 5 N·m (51 kgf·cm, 44 in.·lbf)

(c) Install the fan / fluid coupling assy to the water pump with the 4 nuts.

Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

(d) Install the oil cooler inlet hose and outlet hose to the hose clamp. (AT TRANSMISSION)

18. INSTALL FAN AND GENERATOR V BELT (See page 14–189)

19. INSTALL RADIATOR HOSE NO.1

20. INSTALL RADIATOR RESERVE TANK ASSY

(a) Install the radiator reserve tank with the 3 bolts.

Torque: 5 N·m (51 kgf·cm, 44 in.·lbf)

(b) Install the radiator reserve tank hose.

21. INSTALL WIRE HARNESS (W/ COLD AREA)

(a) Install the wire harness to the fan shroud.

22. INSTALL RADIATOR SUPPORT SEAL UPPER

(a) Install the radiator support seal upper with 11 clips.

23. ADD ENGINE COOLANT (See page 16–50)

24. CHECK FOR ENGINE COOLANT LEAKS

25. INSTALL ENGINE UNDER COVER SUB–ASSY NO.1

(a) Install the engine under cover No. 1 with the 4 bolts.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)