1410R–01

REPLACEMENT

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

(a) Remove the 4 bolts and engine under cover.

2. DRAIN ENGINE COOLANT (See page 16–34)

3. REMOVE RADIATOR SUPPORT SEAL UPPER

4. REMOVE RADIATOR HOSE NO.1

5. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (W/ AIR CONDITIONING) (See page 14–128)

6. REMOVE FAN AND GENERATOR V BELT (See page 14–128)

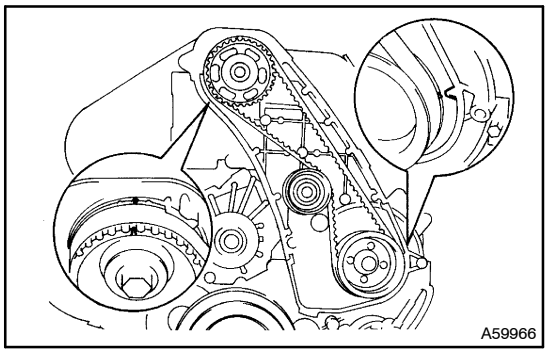
7. REMOVE FLUID COUPLING ASSY

(a) Remove the 4 pulley nuts, the fan, fluid coupling and fan pulley.

8. REMOVE FAN SHROUD

(a) Remove the 3 bolts and fan shroud.

9. REMOVE TIMING CHAIN OR BELT COVER SUB–ASSY

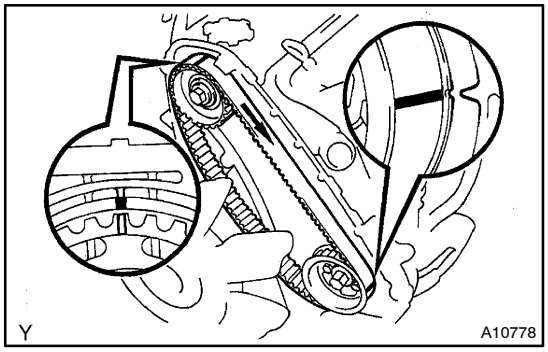


10. SET NO. 1 CYLINDER TO TDC/COMPRESSION

(a) Turn the crankshaft pulley clockwise, set both No.1 and No.2 camshaft pulley grooves at TDC marks.

HINT:

If reusing the timing belt, draw a direction arrow on the bolt (in the direction of engine revolution), and place matchmarks on the pulleys and belt as shown in the illustration.



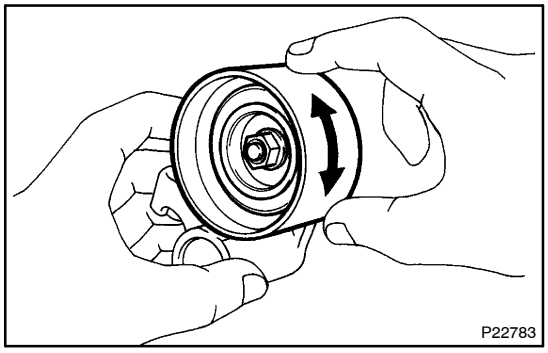
11. REMOVE CHAIN TENSIONER ASSY NO.1

(a) Alternately loosen the 2 bolts, remove them and timing belt tensioner.

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

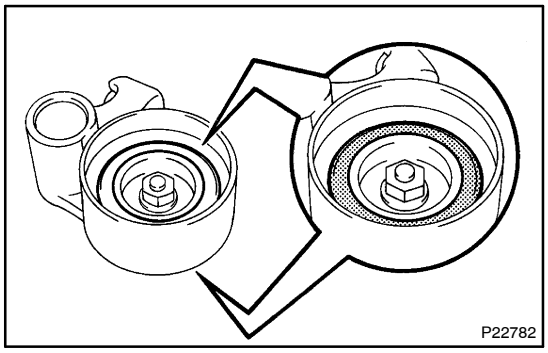
(a) Using a 10 mm hexagon wrench, remove the bolt, timing belt idler pulley and washer.

13. REMOVE TIMING BELT



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

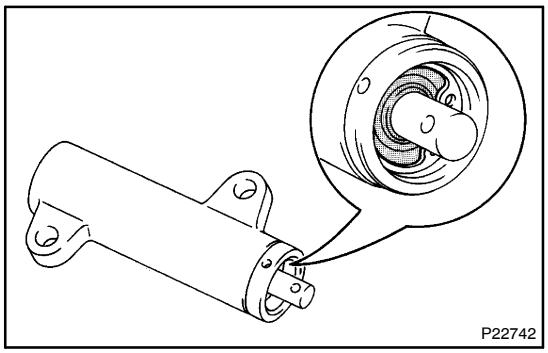
(a) Check that the idler pulley turns smoothly by hand.



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

NOTICE:

- **Do not 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.**



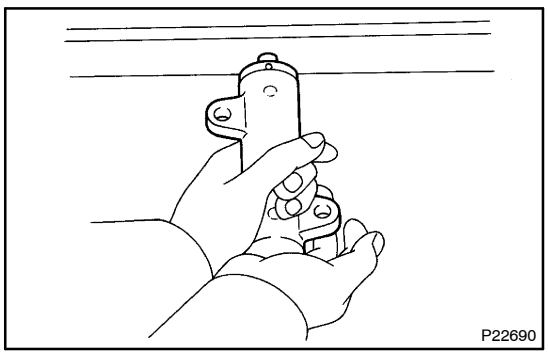
15. INSPECT CHAIN TENSIONER ASSY NO.1

(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.

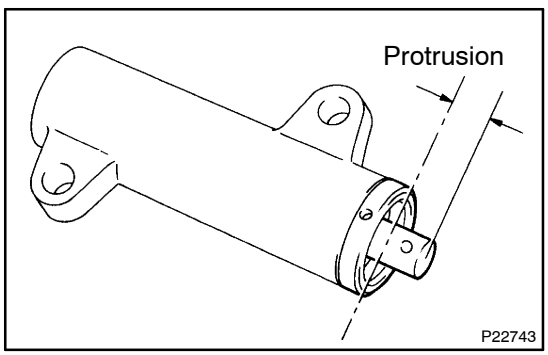


(b) Hold the tensioner with both hands and push the push rod strongly as shown to check that it doesn't move.

If the push rod moves, replace the tensioner.

NOTICE:

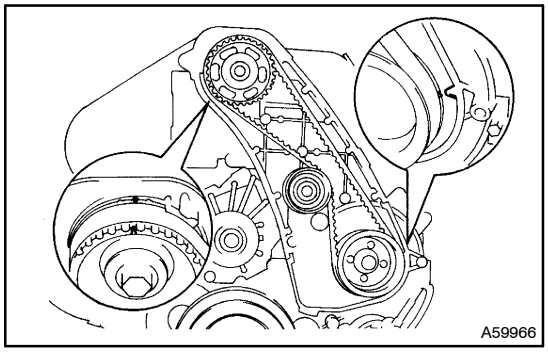
Never hold the tensioner push rod facing downward.



(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.

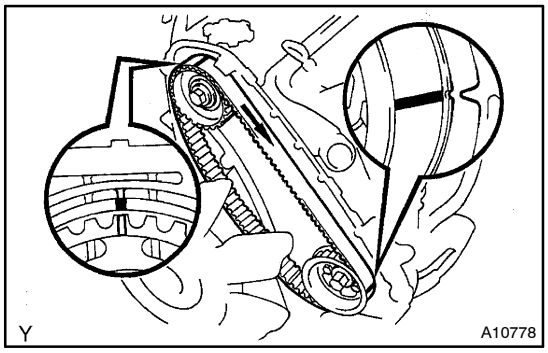


16. SET NO. 1 CYLINDER TO TDC/COMPRESSION

(a) Set the timing pulley at each position.

NOTICE:

When turning the crankshaft, the valve heads will hit against the position top. So do not turn it more than necessary.



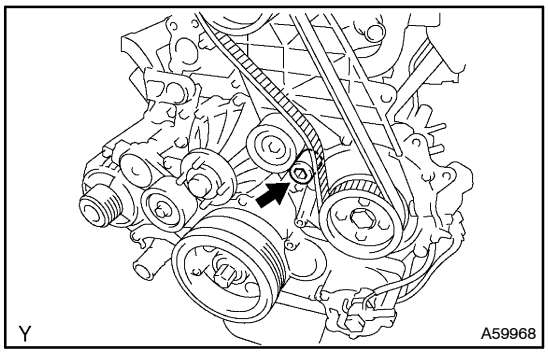
17. INSTALL TIMING BELT

NOTICE:

The engine should be cold.

HINT:

If re–using the timing belt, align the points marked during removal, and install the belt with the arrow pointing in the direction of engine revolution.



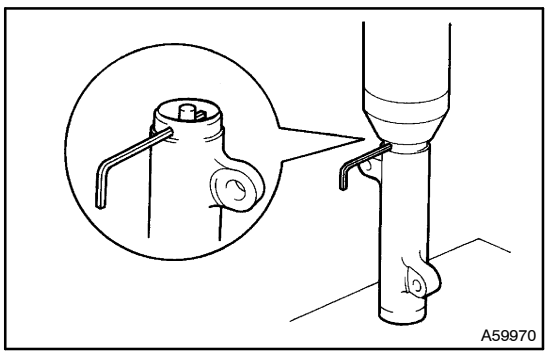
18. INSTALL TIMING BELT IDLER SUB–ASSY NO.1

(a) Using a 10 mm hexagon wrench, install the washer and timing belt idler pulley with the bolt.

35 N·m (350 kgf·cm, 25 ft·lbf)

(b) Check that the idler pulley moves smoothly.

If it doesn't move smoothly, check the idler pulley and washer.



19. SET CHAIN TENSIONER ASSY NO.1

(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 setting position of the push rod.

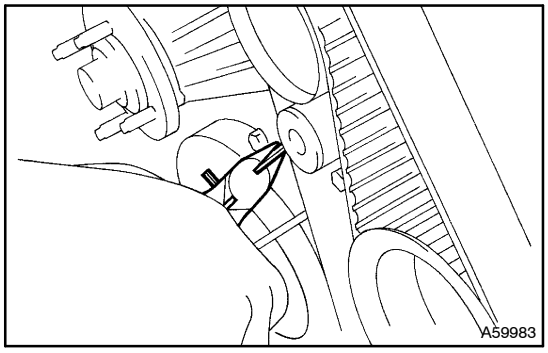
(c) Release the press.

20. INSTALL CHAIN TENSIONER ASSY NO.1

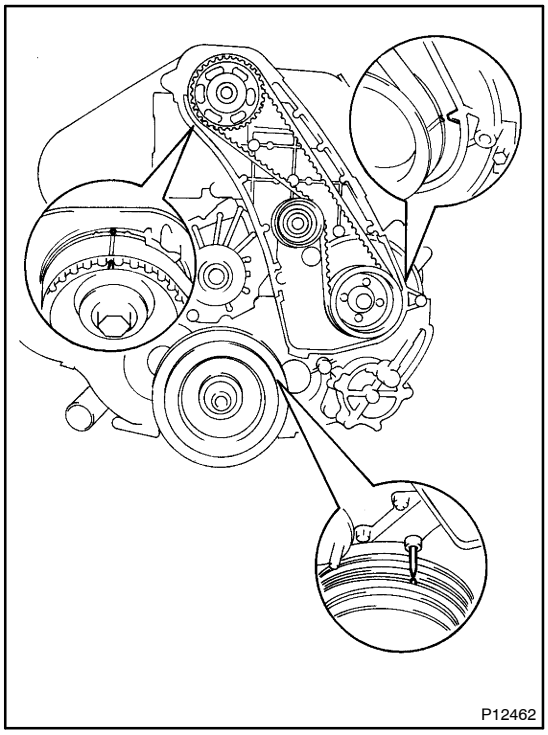
(a) Temporarily install the timing belt tensioner with the 2 bolts while pushing the idler pulley toward the timing belt.

(b) Tighten the 2 bolts.

Torque: 13 N·m (133 kgf·cm, 9 ft·lbf)



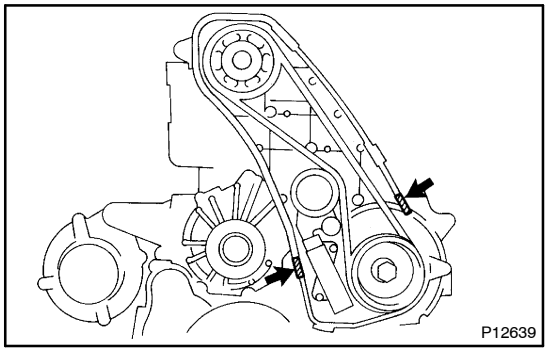
(c) Remove the 7.5 mm hexagon wrench from the tensioner.



21. CHECK VALVE TIMING

(a) Turn the crankshaft pulley clockwise and check that each pulley aligns with the timing marks (TDC mark) as shown in the illustration.

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



22. INSTALL TIMING CHAIN OR BELT COVER SUB–ASSY

(a) Remove any old packing (FIPG) material.

(b) Apply seal packing to the camshaft oil seal retainer and timing gear cover as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent

(c) Install the gasket to the timing belt cover.

(d) Install the timing belt cover with the 4 seal washers, 4 bolts and 2 clips.

Torque: 6.0 N·m (61 kgf·cm, 53 in.·lbf)

23. INSTALL FAN SHROUD

(a) Install the fan shroud with 3 bolts.

Torque: 5 N·m (51 kgf·cm, 44 in.·lbf)

24. INSTALL FLUID COUPLING ASSY

(a) Install the fan pulley and fluid coupling with 4 nuts.

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

25. INSTALL FAN AND GENERATOR V BELT (See page 14–128)

26. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (W/ AIR CONDITIONING) (See page 14–128)

27. INSTALL RADIATOR HOSE NO.1

28. INSTALL RADIATOR SUPPORT SEAL UPPER

29. ADD ENGINE COOLANT (See page 16–34)

30. CHECK FOR ENGINE COOLANT LEAKS (See page 16–34)

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

(a) Install the engine under cover with 4 bolts.
Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)