

# Cylinder Head

## Timing Belt and Balancer Belt Installation

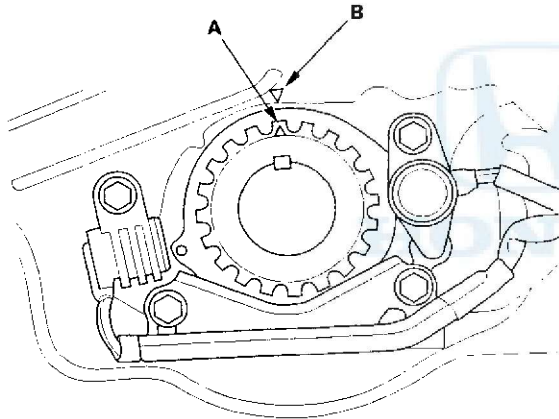
### Special Tools Required

- Holder Handle 07JAB-001020A
- Holder Attachment, 50 mm, Offset 07MAB-PY3010A
- Socket, 19 mm 07JAA-001020A  
or a commercially available 19 mm socket

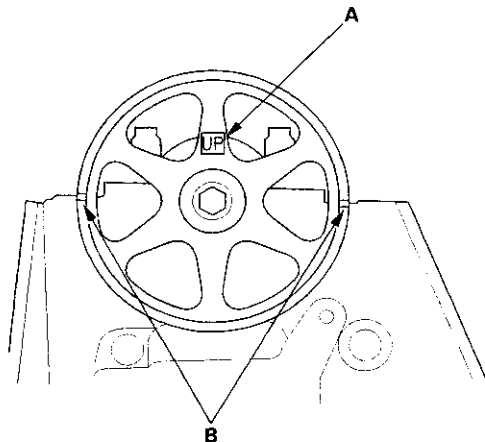
### NOTE:

- If you are installing the timing belt and the balancer belt, go to step 1.
- If you are installing only the balancer belt, go to step 7.

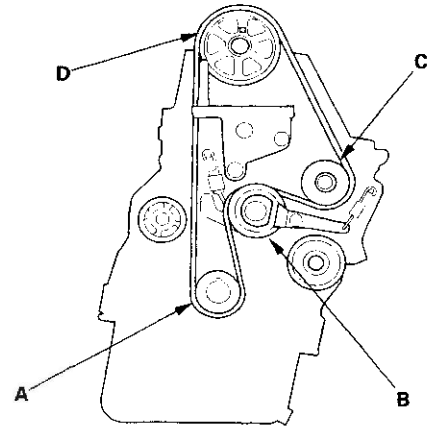
1. Remove and clean the balancer belt drive pulley.
2. Clean the timing belt pulleys, and the upper and lower timing cover.
3. Set the crankshaft to TDC. Align the dimple (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.



4. Clean the camshaft pulley and set it to TDC.
  - 1 The "UP" mark (A) on the camshaft pulley should be at the top.
  - 2 Align the TDC grooves (B) on the pulley with the top edge of the head.



5. Install the timing belt in a counterclockwise sequence, starting with the drive pulley.
  - 1 Drive pulley (A).
  - 2 Tensioner pulley (B).
  - 3 Water pump pulley (C).
  - 4 Camshaft pulley (D).



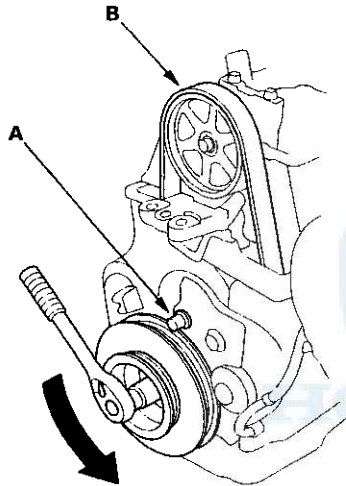
6. Loosen and retighten the adjusting nut to tension the timing belt.
7. Clean any oil off both faces of the balancer belt drive pulley.
8. Check the lower cover rubber seal for cracks and other damage.

### NOTE:

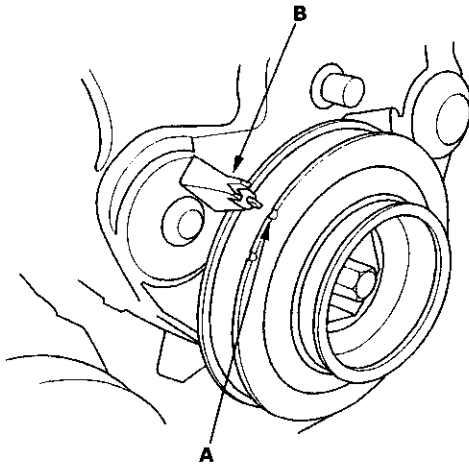
- If the rubber seal is coming off, apply liquid gasket to the lower cover and reinstall the rubber seal. Wipe off any liquid gasket that is pressed out.
  - When replacing the rubber seal, clean the lower cover groove, cut the repair rubber seal to length, and put the rubber seal into the groove evenly.
9. Install the balancer belt drive pulley and the lower cover.



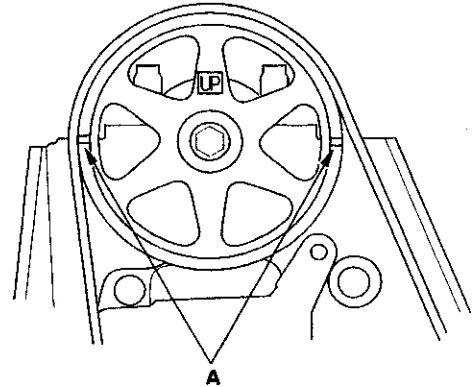
10. Temporarily install the crankshaft pulley and bolt.
11. Rotate the crankshaft pulley five or six turns counterclockwise to seat the timing belt on the pulleys.
12. Adjust the belt tension.
  - 1 Loosen the adjusting nut (A) 2/3–1 turn.
  - 2 Rotate the crankshaft counterclockwise three teeth on the camshaft pulley (B).
  - 3 Tighten the adjusting nut to 44 N·m (4.5 kgf·m, 33 lbf·ft).



13. Turn the crankshaft pulley so its TDC mark (A) lines up with the pointer (B).



14. Check the camshaft pulley marks.
  - If the camshaft pulley marks are also at TDC, go to step 15.
  - If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 3, 4 and 5.



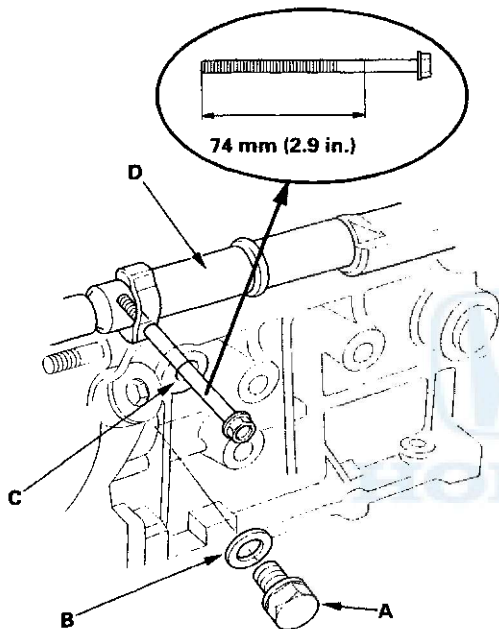
15. Remove the crankshaft pulley and the lower cover.
16. Turn the crankshaft to TDC again.
17. Lock the timing belt adjuster arm in place with one of the 6 mm timing cover bolts.
18. Loosen the adjusting nut 2/3–1 turn, and make sure the balancer belt tensioner moves freely. Then push the tensioner up and retighten the adjusting nut.

(cont'd)

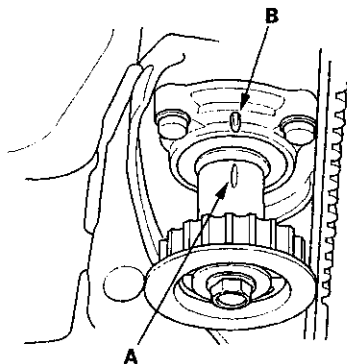
# Cylinder Head

## Timing Belt and Balancer Belt Installation (cont'd)

19. Align the rear balancer shaft pulley with a 6 x 100 mm bolt (or equivalent).
- 1 Remove the bolt (A) and washer (B) from the maintenance hole (C).
  - 2 Scribe a line on a 6 x 100 mm bolt, 74 mm (2.9 in) from the end.
  - 3 Insert the bolt in the maintenance hole and into the hole in the balancer shaft (D) up to the line you scribed.



20. Align the groove (A) on the front balancer shaft with the pointer (B) on the oil pump housing as shown.

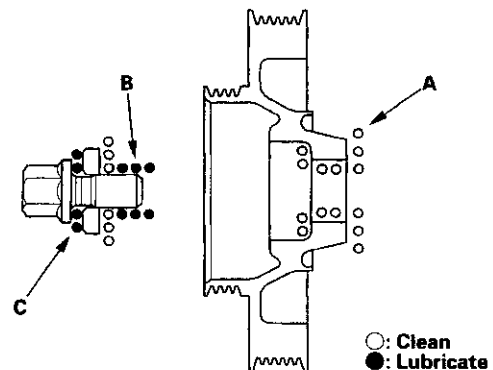


21. Install the balancer belt. Loosen the adjusting nut 2/3 - 1 turn to tension the balancer belt. Retighten the bolt.
22. Remove the 6 x 100 mm bolt from the maintenance hole and reinstall the sealing bolt. Tighten the bolt to 29 N·m (3.0 kgf·m, 22 lb·ft).
23. Adjust the balancer belt.
- 1 Temporarily reinstall the crankshaft pulley.
  - 2 Loosen the adjusting nut 2/3 - 1 turn.
  - 3 Turn the crankshaft pulley 1 turn counterclockwise, then tighten the adjusting nut.
24. Remove the 6 mm bolt from the timing belt adjuster arm.
25. Check the lower cover rubber seal for cracks and other damage.

### NOTE:

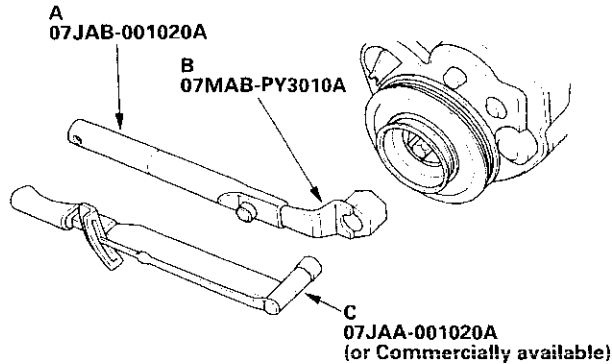
- If the seal is coming off, reattach it with liquid gasket. Wipe off any excess liquid gasket.
- When replacing the seal, clean out the groove in the cover, cut the repair strip to length, and press the new piece into the groove.

26. Remove the crankshaft pulley and reinstall the lower cover.
27. Install the rubber seal around the adjusting nut.
28. Clean the crankshaft pulley bolt and washer.
29. Clean all oil off the inside face (A) of the crankshaft pulley, and apply lubricant to the pulley bolt (B) and washer (C).



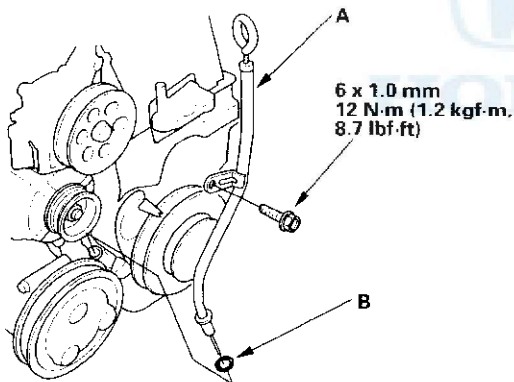


30. Install the crankshaft pulley, and hold with holder handle (A) and holder attachment (B).

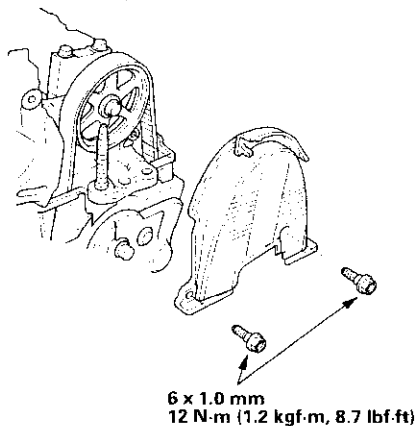


31. Tighten the bolt to 245 N-m (250 kgf-m, 181 lbf-ft) with a torque wrench and 19 mm socket (C). Do not use an impact wrench.

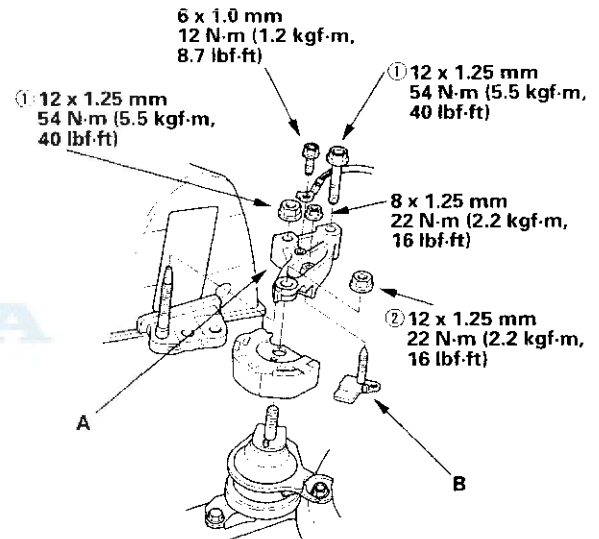
32. Install the dipstick and tube (A) with a new O-ring (B).



33. Install the upper cover.



34. Install the cylinder head cover (see page 6-54).
35. Install the alternator bracket (see page 5-10).
36. Install the alternator (see page 4-32).
37. Connect the alternator harness.
38. Install and adjust the power steering pump belt (see page 17-12).
39. Install and adjust the alternator belt (see page 4-40).
40. Install the upper bracket (A), then tighten the bolt and nuts in the numbered sequence shown.



41. Install the stop (B).
42. Install the battery. Clean the battery posts and cable terminals with sandpaper, then assemble them and apply grease to prevent corrosion.
43. Enter the anti-theft code for the radio, then enter the customer's radio station presets.