

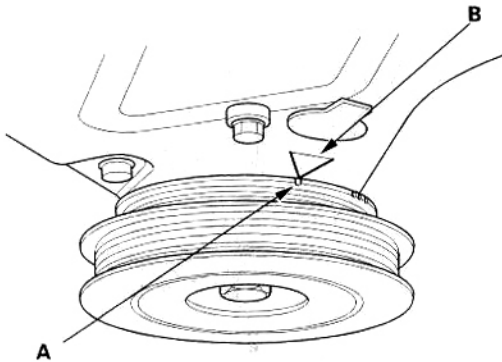
# Cylinder Head

## Timing Belt Removal

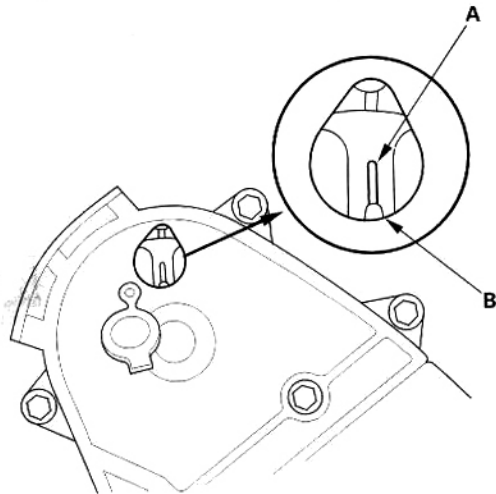
### Special Tools Required

- Holder Handle 07JAB-001020A
- Holder Attachment, 50 mm, Offset 07MAB-PY3010A
- Socket, 19 mm 07JAA-001020A or a commercially available 19 mm socket
- Belt Tension Release Arm, YA9317, commercially available

1. Turn the crankshaft so its white mark (A) lines up with the pointer (B).

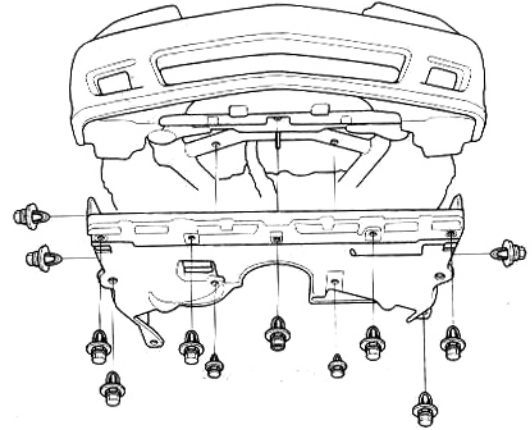


2. Check that the rear camshaft pulley mark (A) and rear upper cover mark (B) are aligned.

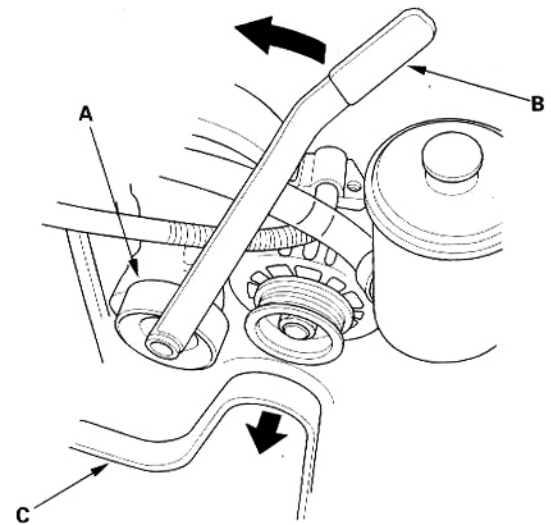


3. Remove the front tires/wheels.

4. Remove the splash shield.



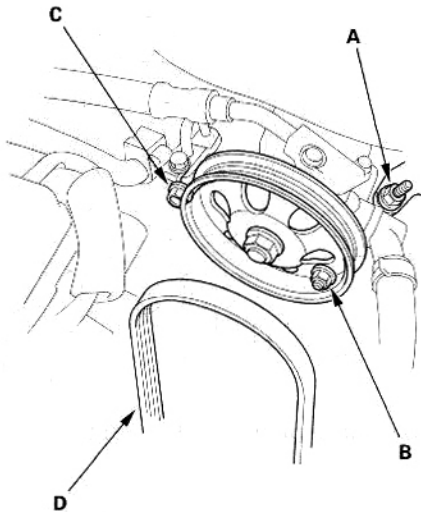
5. Move the auto-tensioner (A) with the belt tension release arm (B) to remove tension from the alternator belt (C), then remove the alternator belt.



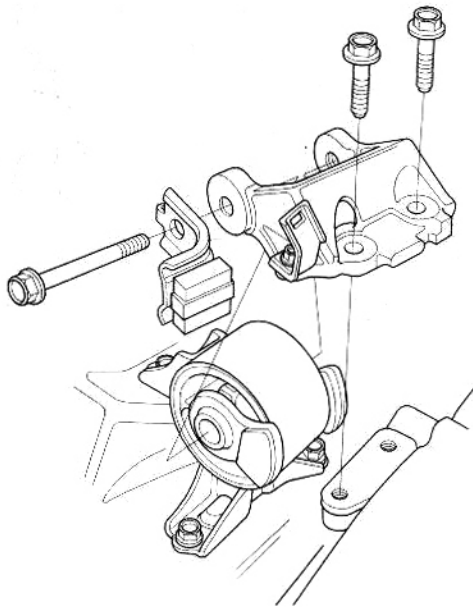
6. Remove the belt tension release arm.



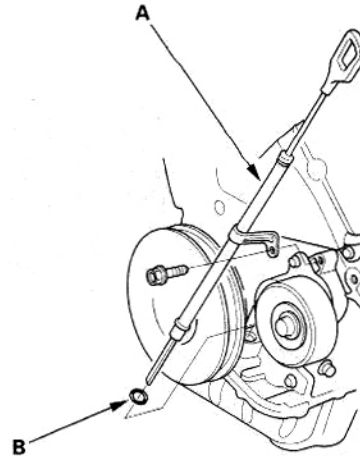
7. Loosen the adjusting nut (A), locknut (B) and mounting bolt (C), then remove the power steering (P/S) pump belt (D).



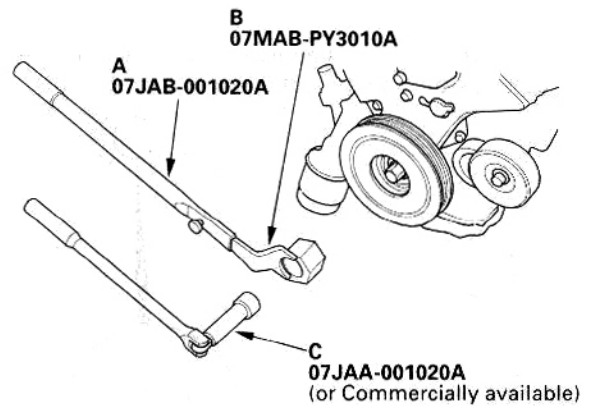
8. Support the engine with a jack and wood block under the oil pan.  
9. Remove the side engine mount bracket.



10. Remove the dipstick and tube (A); discard the O-ring (B).



11. Hold the pulley with the holder handle (A) and holder attachment (B).



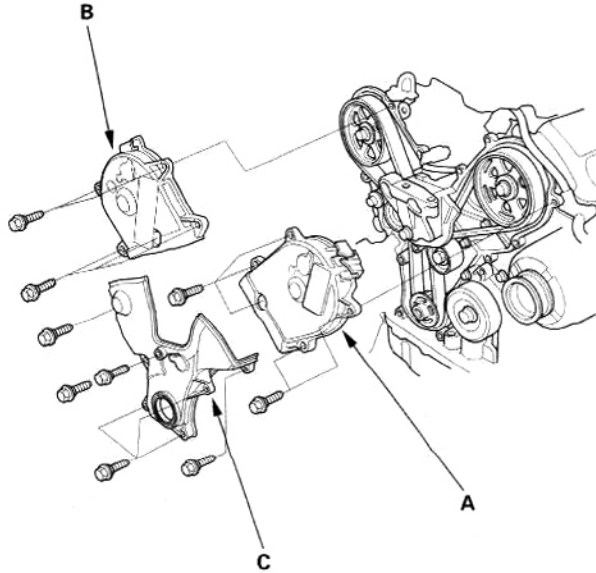
12. Remove the bolt with a heavy duty 19 mm socket (C) and breaker bar.

(cont'd)

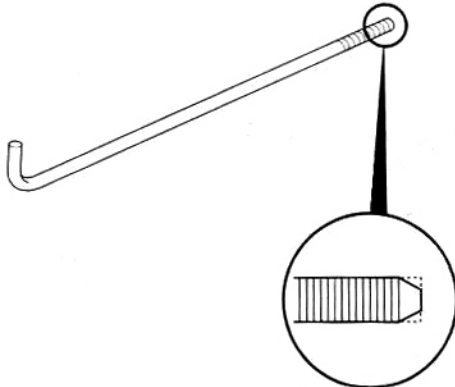
# Cylinder Head

## Timing Belt Removal (cont'd)

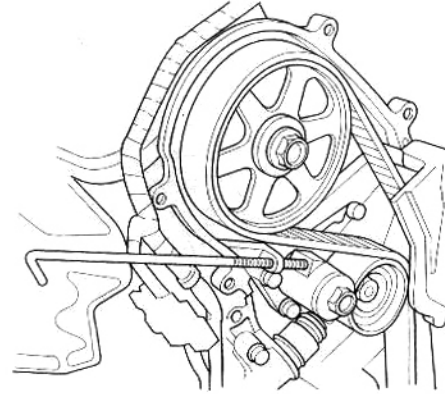
13. Remove the front upper cover (A), rear upper cover (B) and lower cover (C).



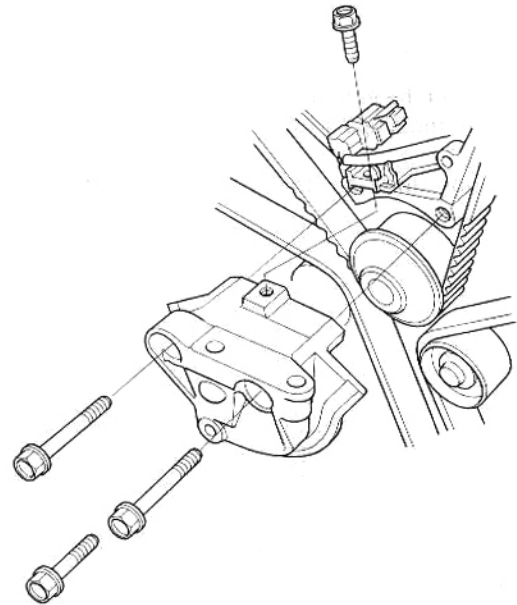
14. Remove one of the battery clamp bolts from the battery tray, and grind the end of it as shown.



15. Screw in the battery clamp bolt as shown, to hold the timing belt adjuster in its current position. Tighten it by hand, do not use a wrench.



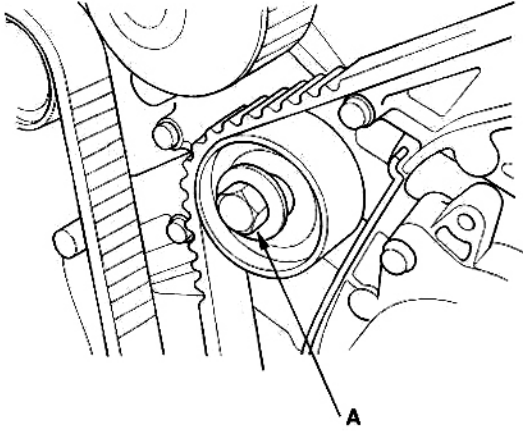
16. Remove the engine mount bracket.





## Timing Belt Installation

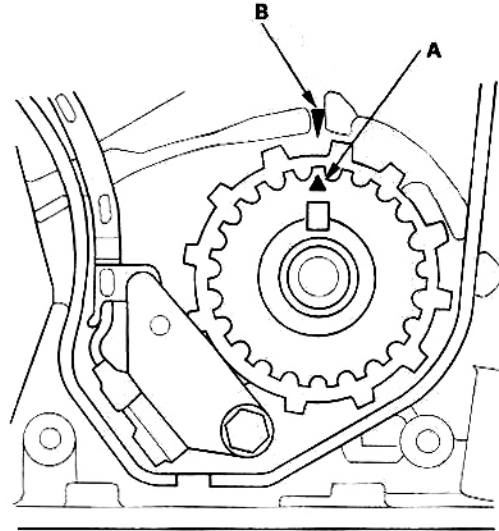
17. Loosen the idler pulley bolt (A) about 5 or 6 turns, then remove the timing belt.



NOTE: The following procedure is for installing a new timing belt. If you are installing a used timing belt, refer to the next procedure.

### New Belt

1. Clean the timing belt pulleys, and upper and lower covers.
2. Set the timing belt drive pulley to TDC by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.



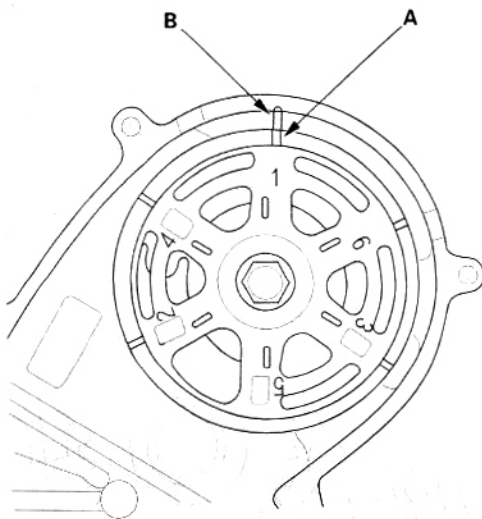
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# Cylinder Head

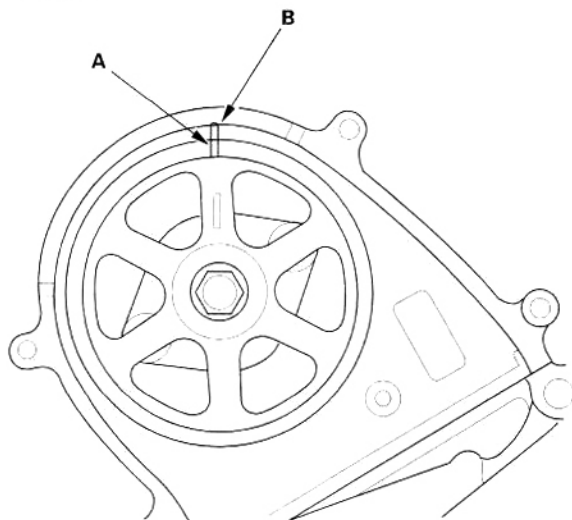
## Timing Belt Installation (cont'd)

3. Clean the camshaft pulleys. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

FRONT:



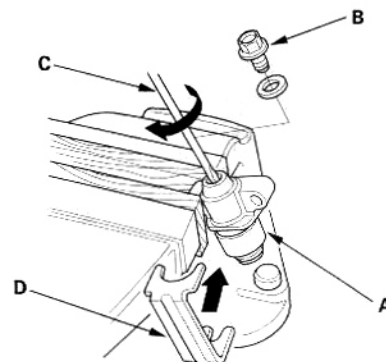
REAR:



4. Remove the battery clamp bolt from the back cover.
5. Remove the auto-tensioner.

6. Hold the auto-tensioner (A) with the maintenance bolt pointing up. Loosen and remove the maintenance bolt (B) ('99 model).

NOTE: Handle the auto-tensioner carefully so the oil inside does not spill or leak. If any of the oil has spilled or leaked out of the auto-tensioner, refill it with 5W-30 motor oil. The total capacity is 6.5 ml (0.22 fl oz).

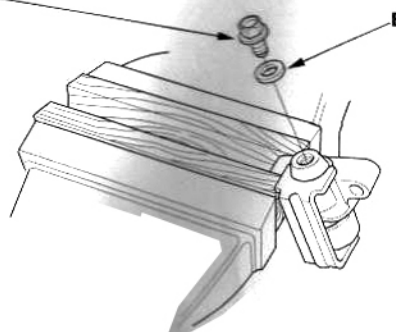


7. Clamp the boss of the auto-tensioner in a soft-jawed vise. Do not grip the housing of the auto-tensioner ('99 model).
8. Insert a flat blade screwdriver (C) into the maintenance hole. Place the holder (D) (P/N 14540-P8A-A01) on the auto-tensioner while turning the screwdriver clockwise to compress the bottom ('99 model).

NOTE: Take care not to damage the threads or the gasket contact surface with the screwdriver.

9. Reinstall the maintenance bolt (A). Always use a new gasket (B) ('99 model).

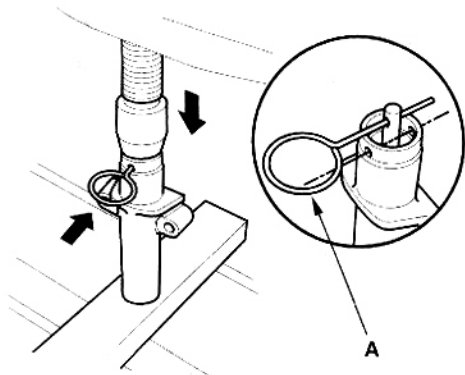
A  
8 N·m (0.8 kgf·m, 6 lbf·ft)



10. Make sure no oil is leaking around the maintenance bolt.



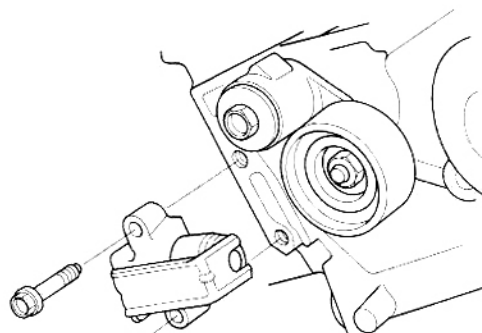
- Align the holes on the rod and housing of the auto-tensioner with a pin of 1.5 mm (0.06 in.) diameter (A) ('00-01 models).



- Set the auto-tensioner on the hydraulic press, then slowly compress the auto-tensioner to insert the pin through the housing and the rod ('00-01 models).  
NOTE: The compression pressure should not exceed 9,800 N (1,000 kgf, 2,200 lb).

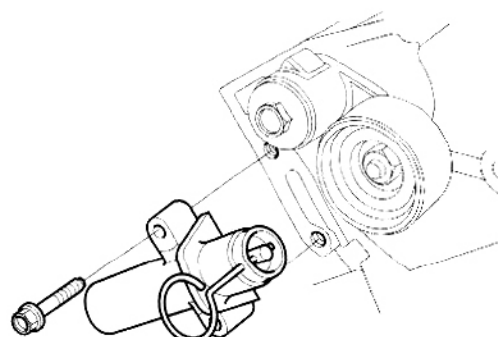
- 13. Install the auto-tensioner.  
NOTE: Make sure the holder (pin for '00-01 models) stays in place.

'99 model:



6 x 1.0 mm  
12 N·m (1.2 kgf·m,  
8.7 lbf·ft)

'00-01 models:



6 x 1.0 mm  
12 N·m (1.2 kgf·m, 8.7 lbf·ft)

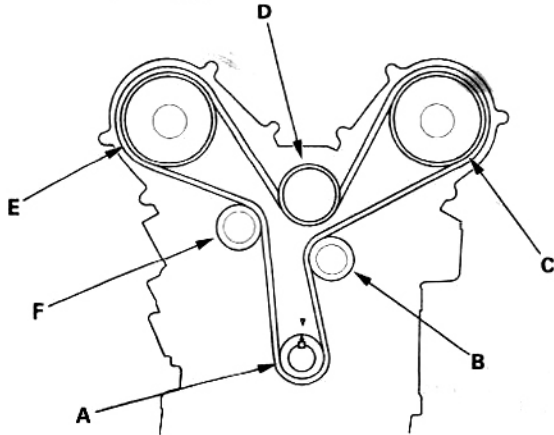
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# Cylinder Head

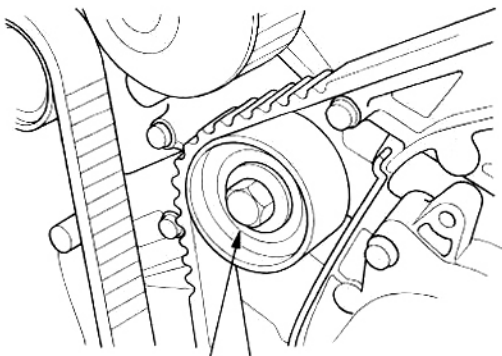
## Timing Belt Installation (cont'd)

14. Install the timing belt in a counter clockwise sequence starting with the drive pulley.

- 1 Drive pulley (A).
- 2 Idler pulley (B).
- 3 Front camshaft pulley (C).
- 4 Water pump pulley (D).
- 5 Rear camshaft pulley (E).
- 6 Adjusting pulley (F).



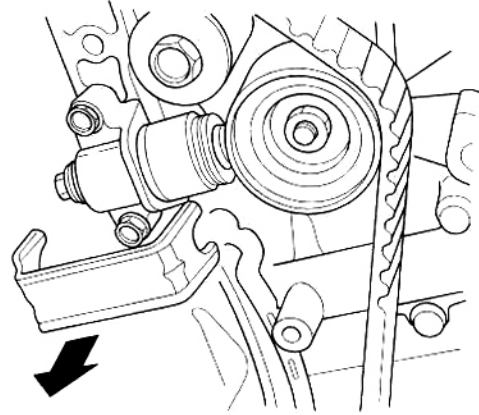
15. Tighten the idler pulley bolt.



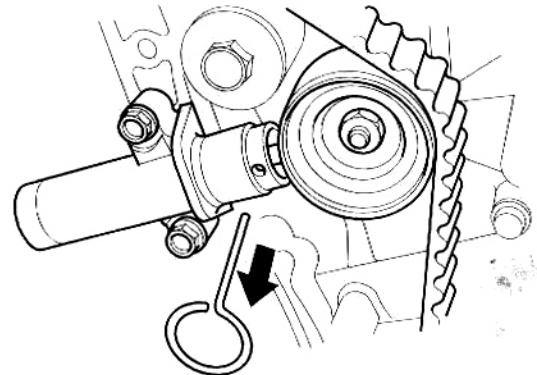
10 x 1.25 mm  
44 N·m (4.5 kgf·m, 33 lbf·ft)

16. Remove the holder (pin for '00-01 models) from the auto-tensioner.

'99 model:

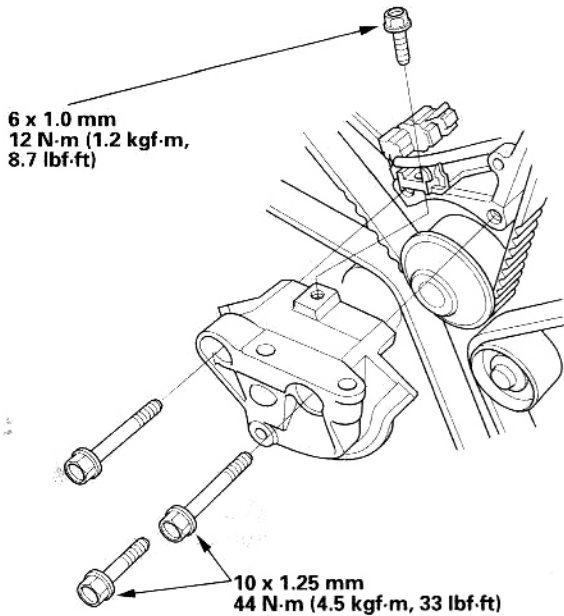


'00-01 models:

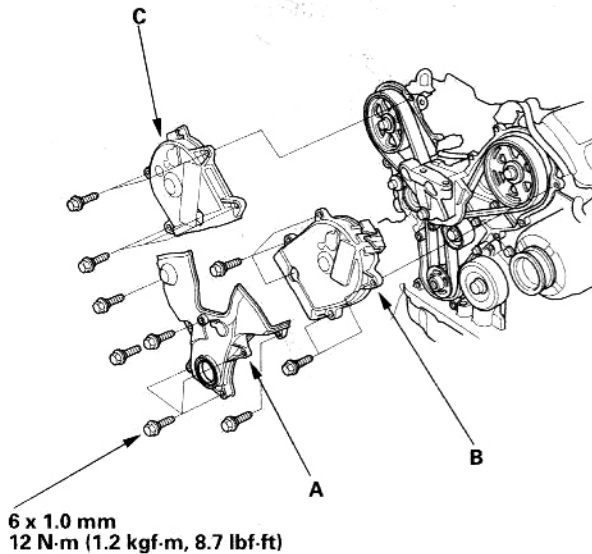




17. Install the engine mount bracket.

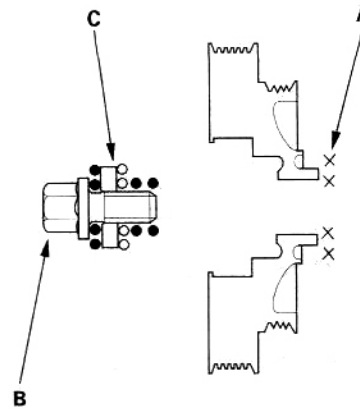


18. Install the lower cover (A), front upper cover (B) and rear upper cover (C).



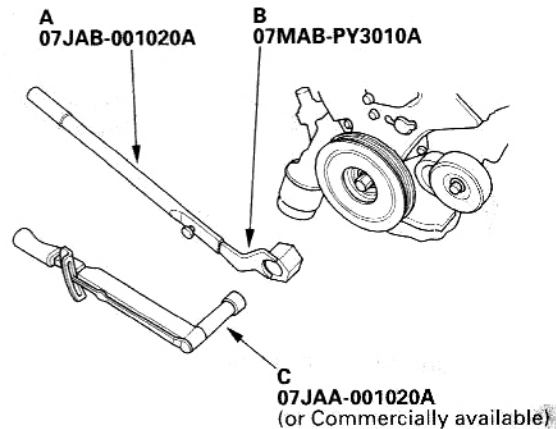
19. Clean the crankshaft pulley bolt and washer.

20. Clean all oil off the inside face (A) of the crankshaft pulley, and apply lubricant to the pulley bolt (B) and washer (C).



21. Install the crankshaft pulley, and tighten the bolt to 245 N·m (25.0 kgf·m, 181 lbf·ft). Do not use an impact wrench.

- 1 Hold the pulley with holder handle (A) and holder attachment (B).
- 2 Tighten the bolt with a torque wrench and 19 mm socket (C).



22. Rotate the crankshaft pulley about 5 or 6 turns clockwise so the timing belt positions on the pulleys.

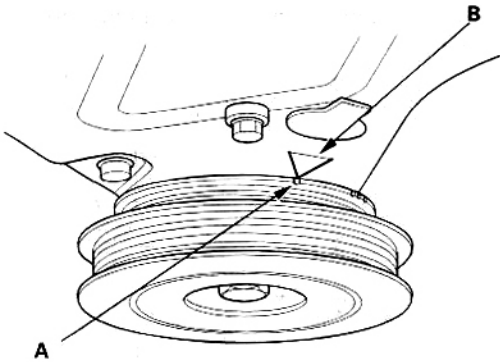
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# Cylinder Head

## Timing Belt Installation (cont'd)

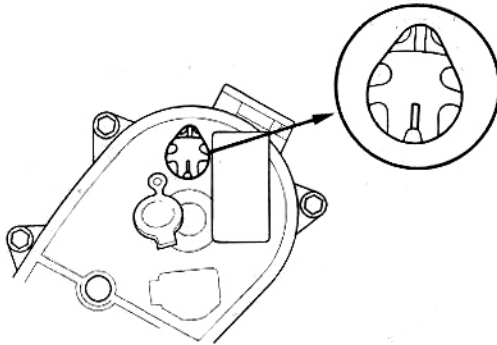
23. Turn the crankshaft pulley so its white mark (A) lines up with the pointer (B).



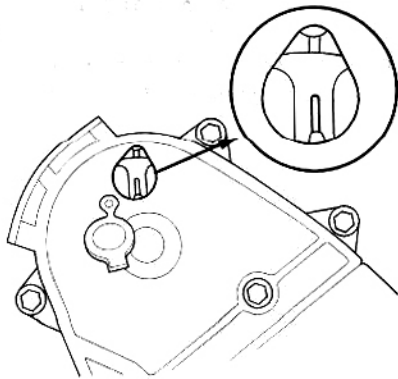
24. Check the camshaft pulley marks.

- If the camshaft pulley marks are at TDC, go to **step 25**.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 2 through 21.

### FRONT CAMSHAFT PULLEY:

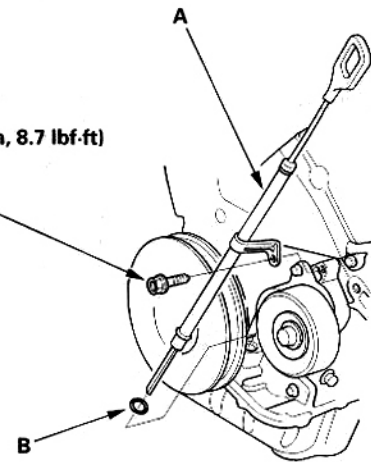


### REAR CAMSHAFT PULLEY:



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

6 x 1.0 mm  
12 N·m (1.2 kgf·m, 8.7 lbf·ft)



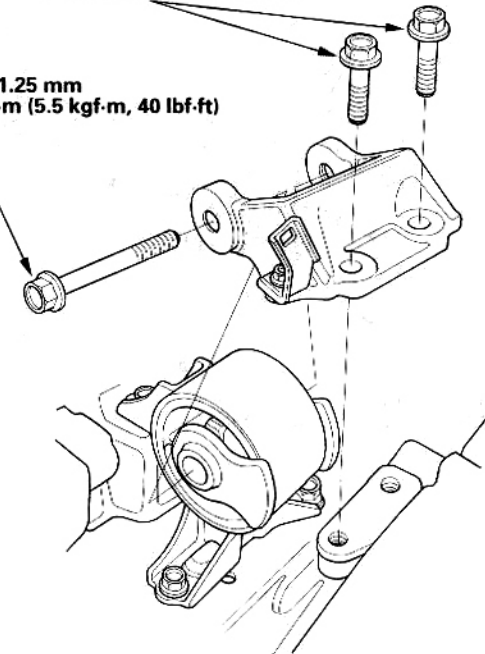
26. Install and adjust the P/S pump belt (see page 17-12).

27. Install the alternator belt.

28. Install the side engine mount bracket, then tighten the mounting bolts in the numbered sequence shown.

① 10 x 1.25 mm  
44 N·m (4.5 kgf·m, 33 lbf·ft)

② 12 x 1.25 mm  
54 N·m (5.5 kgf·m, 40 lbf·ft)

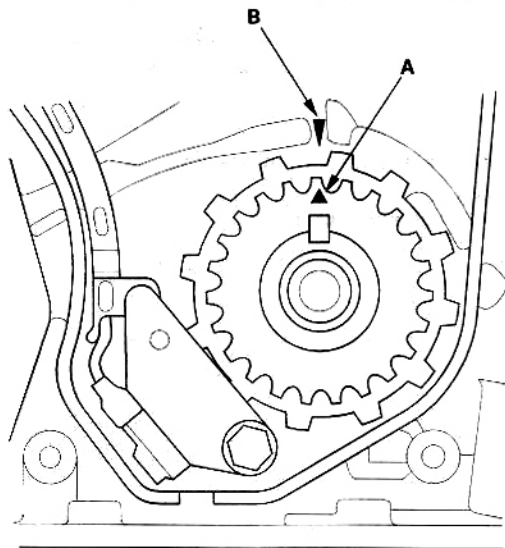




## Used Belt

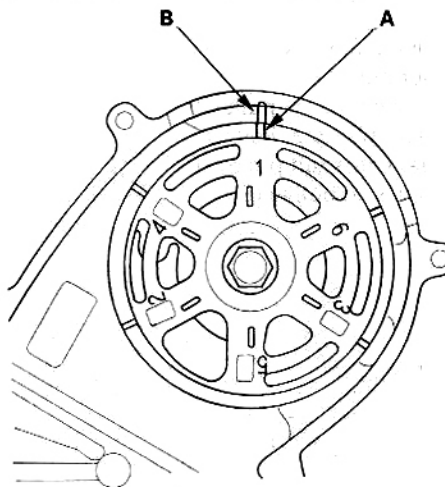
Follow this procedure when installing a used timing belt.

1. Clean the timing belt pulleys, and upper and lower covers.
2. Set the timing belt drive pulley to TDC by aligning the TDC mark (A) on the tooth of the timing belt drive pulley with the pointer (B) on the oil pump.

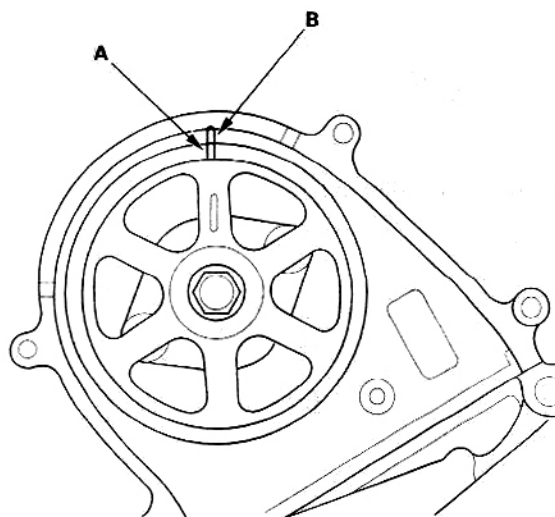


3. Clean the camshaft pulleys. Set the camshaft pulleys to TDC by aligning the TDC marks (A) on the camshaft pulleys with the pointers (B) on the back covers.

**FRONT:**



**REAR:**



(cont'd)

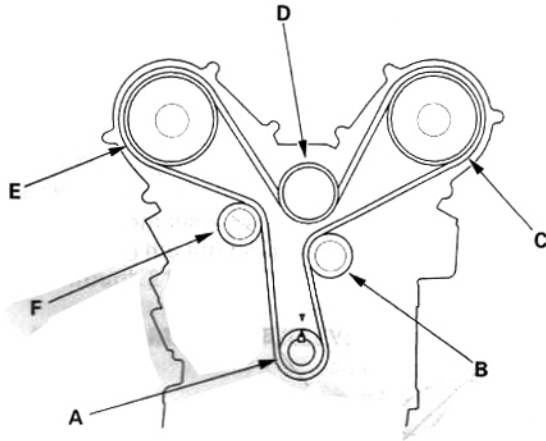
# Cylinder Head

## Timing Belt Installation (cont'd)

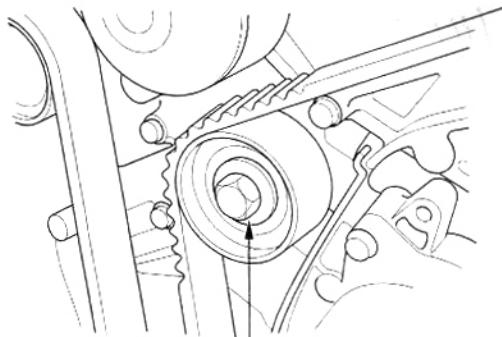
4. If the auto-tensioner has extended and the timing belt cannot be installed, remove and compress the auto-tensioner.

5. Install the timing belt in a counterclockwise sequence starting with the drive pulley. Take care not to damage the timing belt when installing it.

- 1 Drive pulley (A).
- 2 Idler pulley (B).
- 3 Front camshaft pulley (C).
- 4 Water pump pulley (D).
- 5 Rear camshaft pulley (E).
- 6 Adjusting pulley (F).

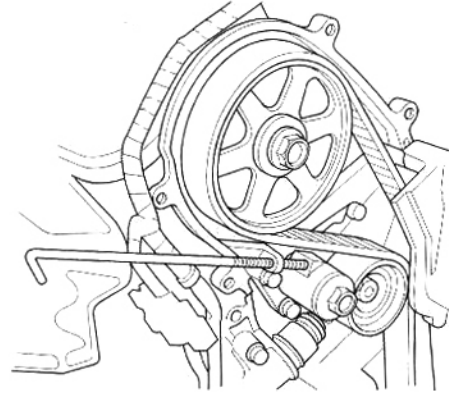


6. Tighten the idler pulley bolt.



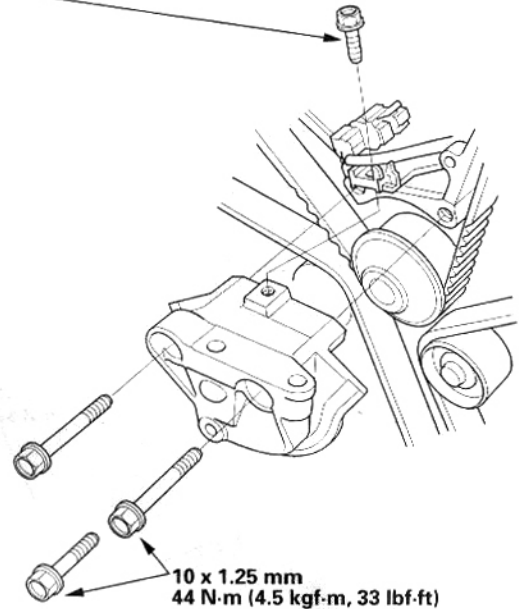
10 x 1.25 mm  
44 N·m (4.5 kgf·m, 33 lbf·ft)

7. Remove the battery clamp bolt from the back cover.



8. Install the engine mount bracket.

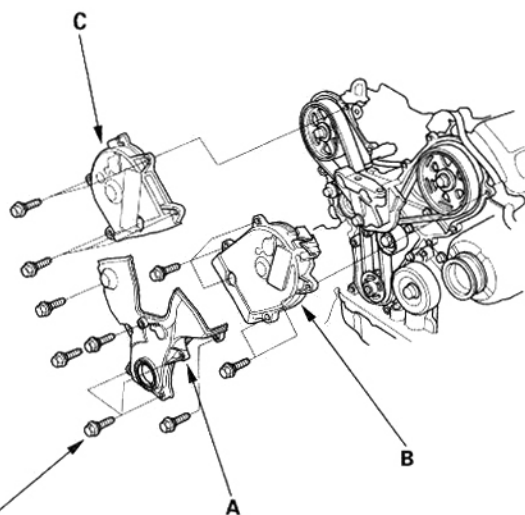
6 x 1.0 mm  
12 N·m (1.2 kgf·m, 8.7 lbf·ft)



10 x 1.25 mm  
44 N·m (4.5 kgf·m, 33 lbf·ft)

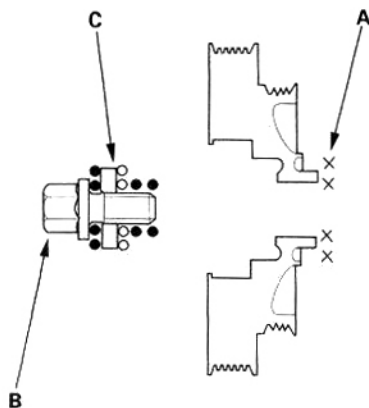


9. Install the lower cover (A), front upper cover (B) and rear upper cover (C).



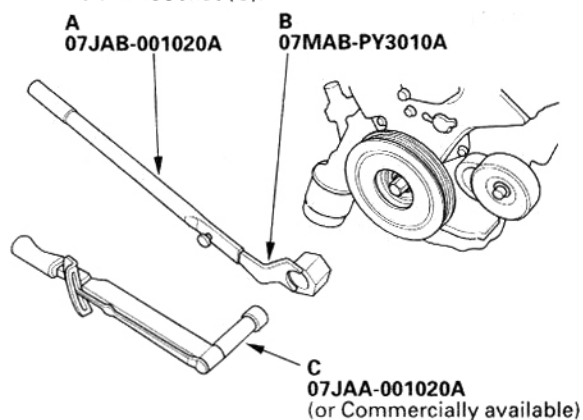
6 x 1.0 mm  
12 N·m (1.2 kgf·m, 8.7 lbf·ft)

10. Clean the crankshaft pulley bolt and washer.
11. Clean any oil off the inside face (A) of the crankshaft pulley, and apply lubricant to the pulley bolt (B) and washer (C).

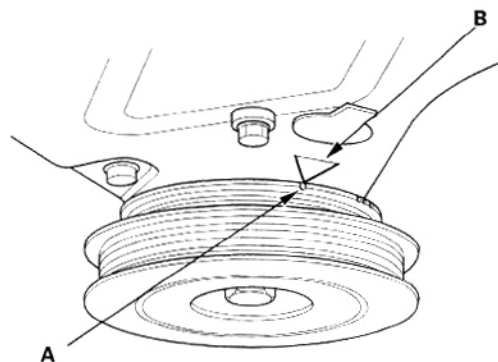


12. Install the crankshaft pulley, and tighten the bolt to 245 N·m (25.0 kgf·m, 181 lbf·ft). Do not use an impact wrench.

- 1 Hold the pulley with holder handle (A) and holder attachment (B).
- 2 Tighten the bolt with a torque wrench and 19 mm socket (C).



13. Rotate the crankshaft pulley about 5 or 6 turns clockwise so the timing belt positions on the pulleys.
14. Turn the crankshaft pulley so its white mark (A) lines up with the pointer (B).



(cont'd)

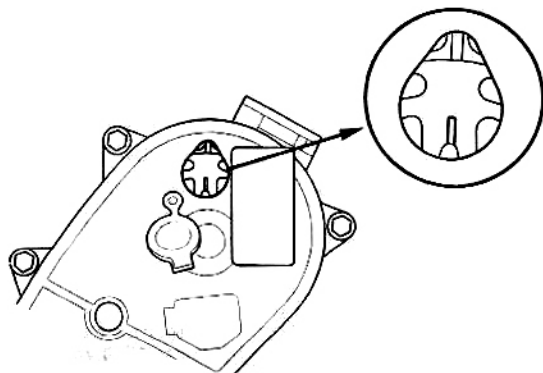
# Cylinder Head

## Timing Belt Installation (cont'd)

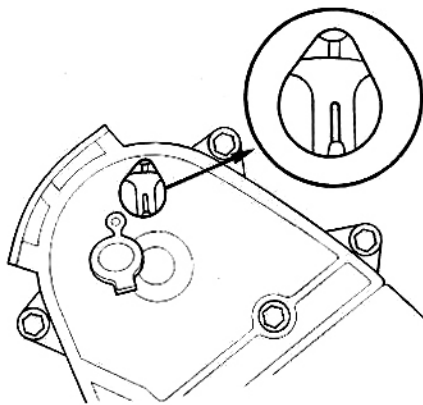
15. Check the camshaft pulley marks.

- If the camshaft pulley marks are at TDC, go to step 16.
- If the camshaft pulley marks are not at TDC, remove the timing belt and repeat steps 2 through 11.

### FRONT CAMSHAFT PULLEY:

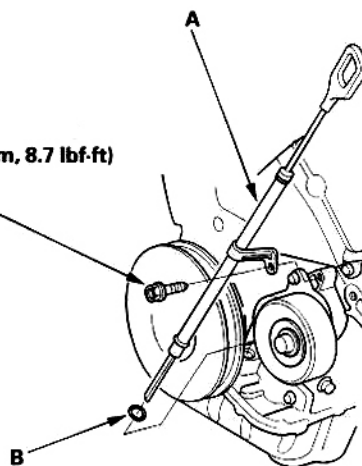


### REAR CAMSHAFT PULLEY:



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

6 x 1.0 mm  
12 N·m (1.2 kgf·m, 8.7 lbf·ft)



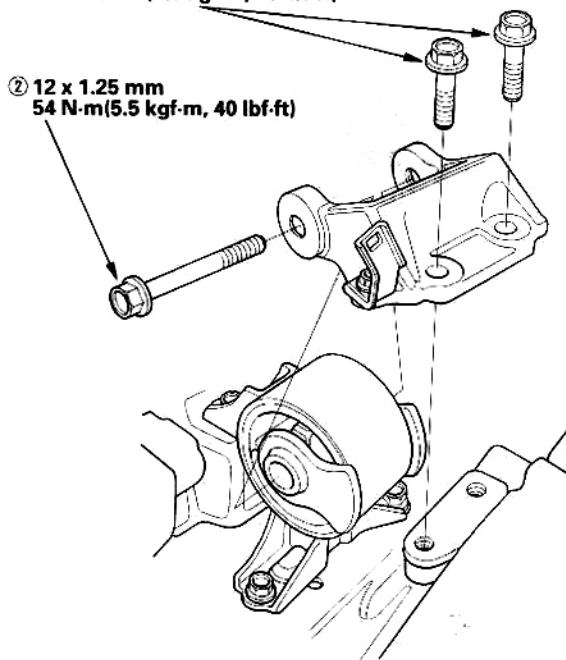
17. Install and adjust the P/S pump belt (see page 17-12).

18. Install the alternator belt.

19. Install the side engine mount bracket, then tighten the mounting bolts in the numbered sequence shown.

① 10 x 1.25 mm  
44 N·m (4.5 kgf·m, 33 lbf·ft)

② 12 x 1.25 mm  
54 N·m (5.5 kgf·m, 40 lbf·ft)



## Water Pump

### REMOVAL & INSTALLATION

1. Note the radio security code and station presets.
2. Disconnect the negative battery cable.
3. Drain the coolant from the radiator, into a suitable container.
4. Remove the timing belt. Refer to the Timing Belt replacement in this section for specific details.
5. On Odyssey models with the V6 engine, remove the timing belt tensioner. Refer to the Timing Belt replacement in this section for specific details.
6. Remove the bolts that attach the pump to the cylinder block.
7. If available, locate the two 6.0 mm x 1.0 mm threaded holes opposite from one another on the outer perimeter of the water pump.
  - A. Install by hand, two 6.0mm x 1.0mm bolts at least 1 in. (25mm) long, until resistance is felt.
  - B. Simultaneously turn each bolt one turn at a time until the water pump can be released from the engine block.
8. Remove the water pump.

Fig. 1: Exploded view of the water pump mounting — be sure to replace the O-ring during assembly

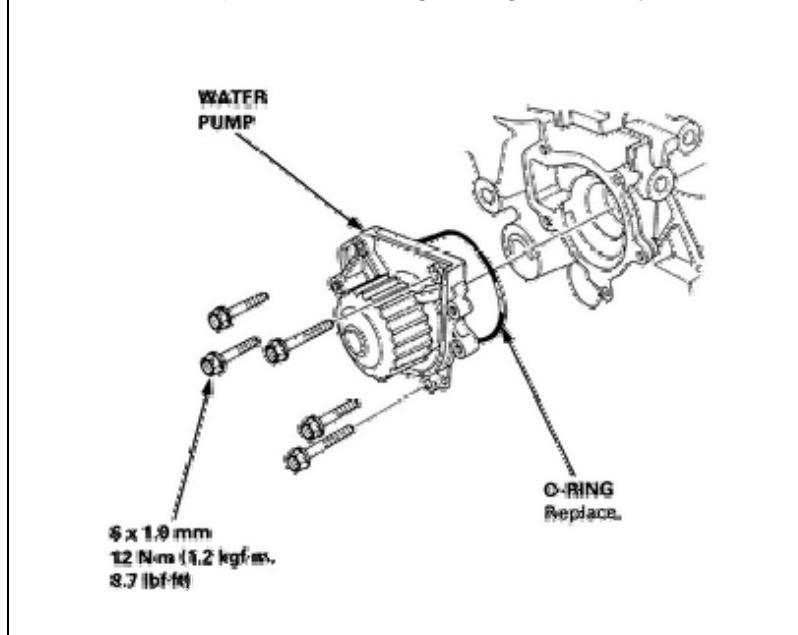
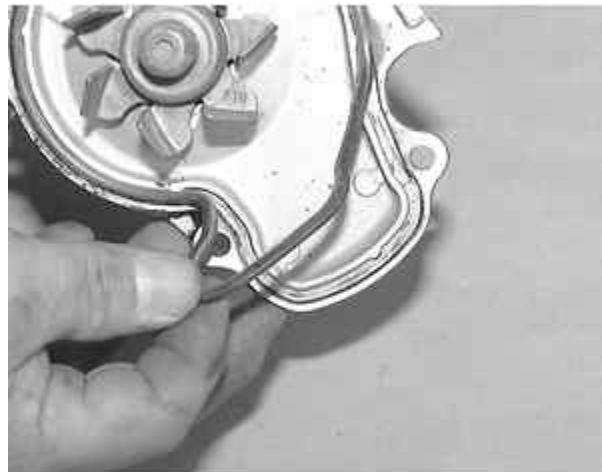


Fig. 2: If available, use the two 6.0 mm x 1.0 mm threaded holes on the water pump to release the pump from the engine block



Fig. 3: Make sure the water pump O-ring is fully seated in the water pump. Using a non hardening gasket sealant will help to hold the seal in place during assembly



**11. To install:**

12. Inspect and clean the O-ring mating surface on cylinder block.
13. Install a new O-ring on the water pump. Apply a non-hardening gasket sealant between the water pump O-ring and the pump to hold the O-ring in place during assembly.
14. Install the water pump onto the cylinder block and tighten the bolts to 106 inch lbs. (12 Nm).

15. On Odyssey models with the V6 engine, install the automatic timing belt tensioner, with the tensioner fully retracted using the special tool 14540-P8A-A01 or equivalent. Refer to the Timing Belt replacement in this section for specific details.
16. Install the timing belt.
17. On 4-cylinder Odyssey models, open the cooling system bleed bolt located on the thermostat housing.
18. Set the heater to the full hot position.
19. Refill the radiator with a coolant mixture containing 50% antifreeze. Use only antifreeze formulated to prevent the corrosion of aluminum parts. Fill the radiator with the coolant solution.
20. On 4-cylinder Odyssey models, fill with coolant until the bleed bolt is free of air bubbles. Then, tighten the bleed bolt to 88 inch lbs. (10 Nm).
21. Install the radiator cap loosely.
22. Reconnect the negative battery cable.
23. Run the engine until the cooling fans cycle two times.
24. Turn the engine OFF and top off the cooling system as necessary.
25. Install the radiator cap and check for coolant leaks. Be sure the cooling fan turns on.
26. Recheck the coolant level and add more if necessary.
27. Enter the radio security code.