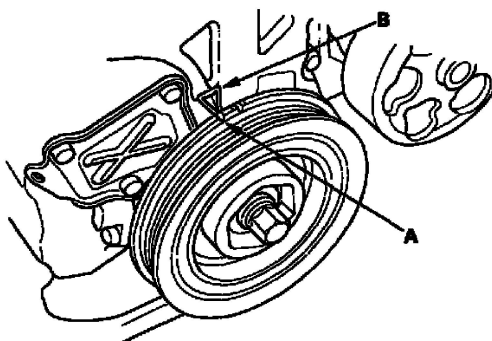


## Timing Chain: Service and Repair

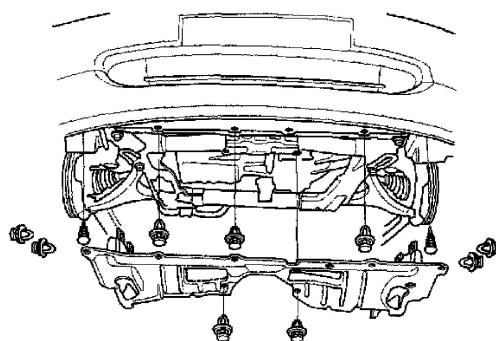
### Cam Chain Removal

#### Removal

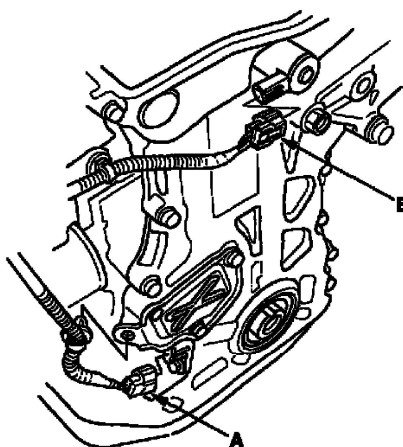
**NOTE:** Keep the cam chain away from magnetic fields.



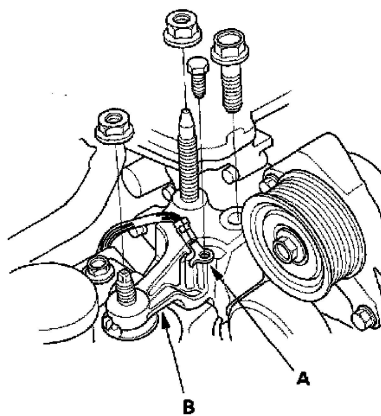
1. Turn the crankshaft pulley so its top dead center (TDC) mark (A) lines up with the pointer (B).
2. Remove the front tires/wheels.



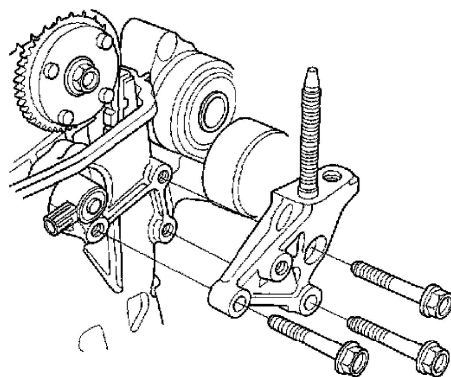
3. Remove the splash shield.
4. Remove the drive belt.
5. Remove the cylinder head cover.
6. Remove the crankshaft pulley.



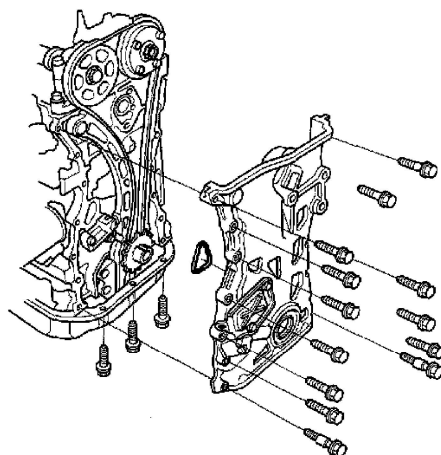
7. Disconnect the crankshaft position (CKP) sensor connector (A) and variable valve timing control (VTC) oil control solenoid valve connector (B).
8. Remove the VTC oil control solenoid valve.
9. Support the engine with a jack and wood block under the oil pan.



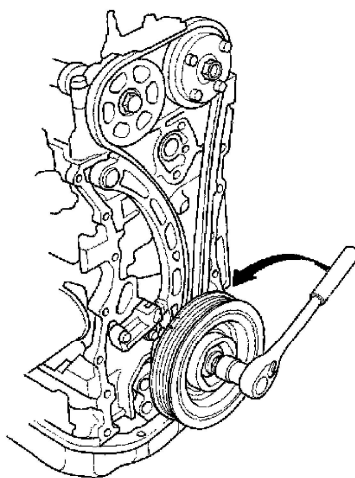
10. Remove the ground cable (A), and remove the upper bracket (B).



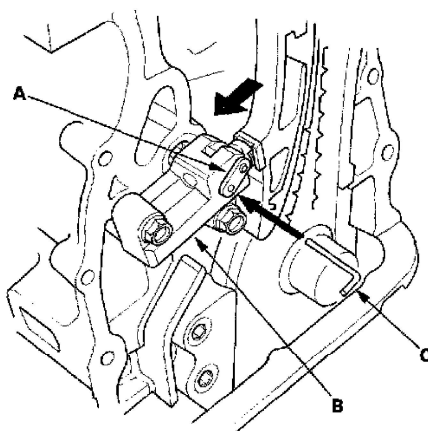
11. Remove the side engine mount bracket.



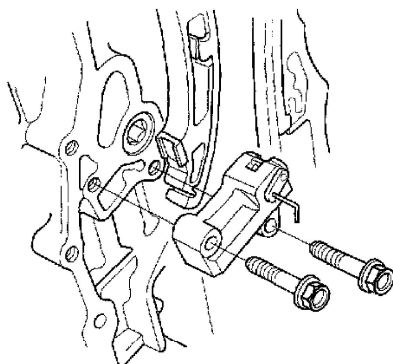
12. Remove the chain case.  
13. Loosely install the crankshaft pulley.



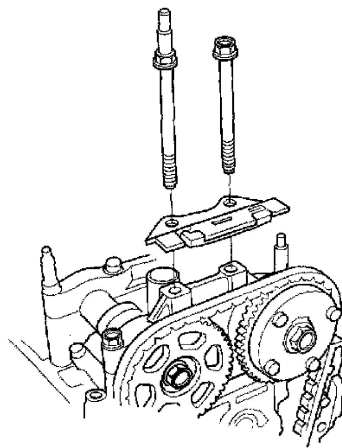
14. Turn the crankshaft counterclockwise to compress the auto-tensioner.



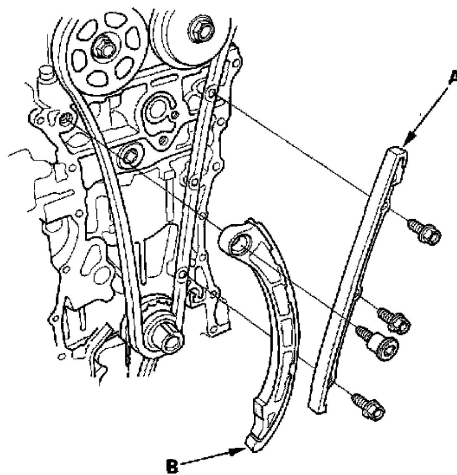
15. Align the holes on the lock (A) and the auto tensioner (B), then insert a **1.5 mm (0.06 inch)** diameter pin (C) into the holes. Turn the crankshaft clockwise to secure the pin.



16. Remove the auto-tensioner.



17. Remove the cam chain guide B.



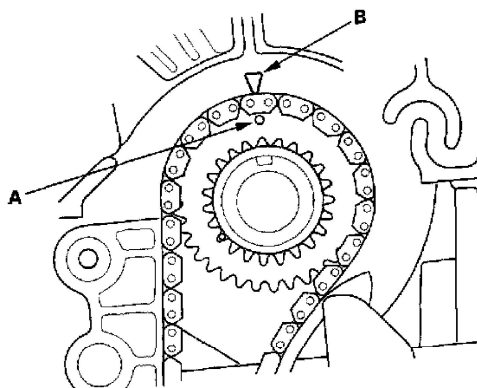
18. Remove the cam chain guide A (A) and tensioner arm (B).  
19. Remove the cam chain.

# Timing Chain: Service and Repair

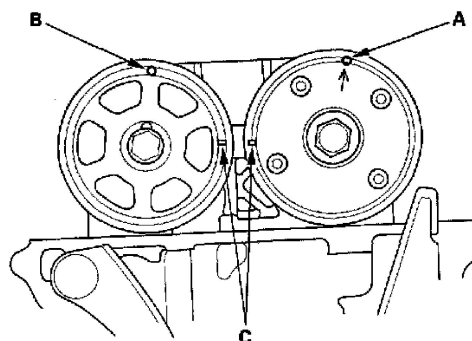
## Cam Chain Installation

### Installation

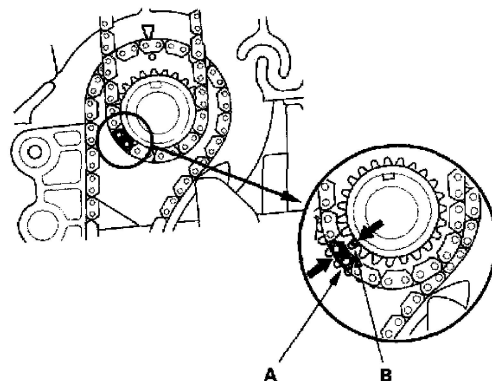
**NOTE:** Keep the cam chain away from magnetic fields.



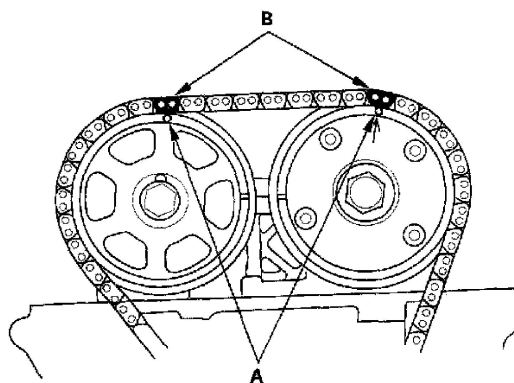
1. Set the crankshaft to top dead center (**TDC**). Align the TDC mark (A) on the crankshaft sprocket with the pointer (B) on the cylinder block.



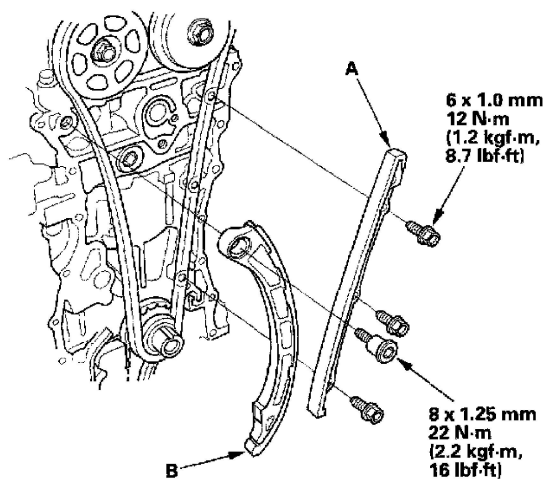
2. Set the camshafts to TDC. The punch mark (A) on the variable valve timing control (**VTC**) actuator and the punch mark (B) on the exhaust camshaft sprocket should be at the top. Align the TDC marks (C) on the VTC actuator and exhaust camshaft sprocket.



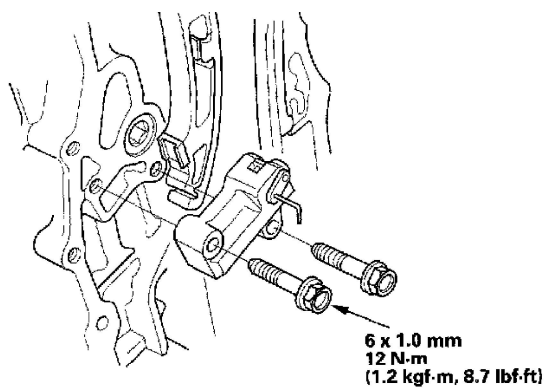
3. Install the cam chain on the crankshaft sprocket with the colored piece (A) aligned with the punch mark (B) on the crankshaft sprocket.



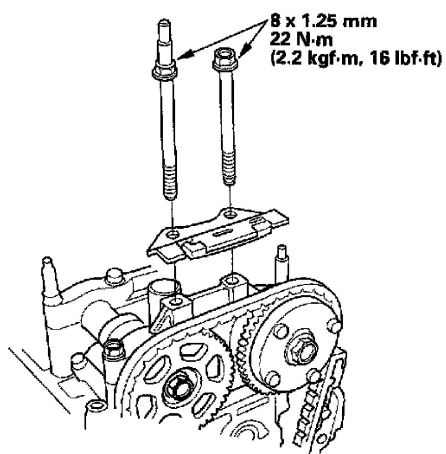
4. Install the cam chain on the VTC actuator and exhaust camshaft sprocket with the punch marks (A) aligned with the two colored pieces (B).



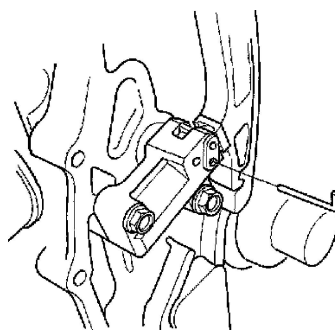
5. Install the cam chain guide A (A) and tensioner arm (B).



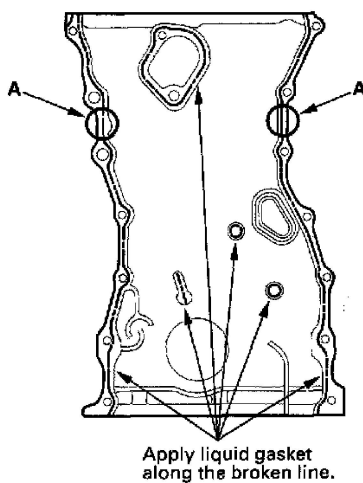
6. Install the auto-tensioner.



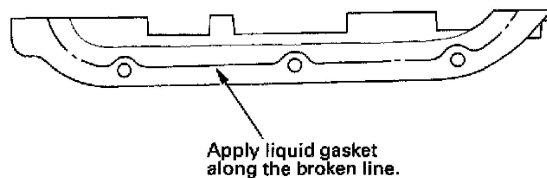
7. Install the cam chain guide B.



8. Remove the pin from the auto-tensioner.  
9. Check the chain case oil seal for damage. If the oil seal is damaged, replace the chain case oil seal.  
10. Remove old liquid gasket from the chain case mating surfaces, bolts, and bolt holes.  
11. Clean and dry the chain case mating surfaces.

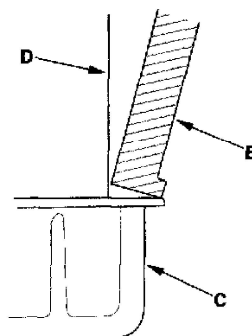
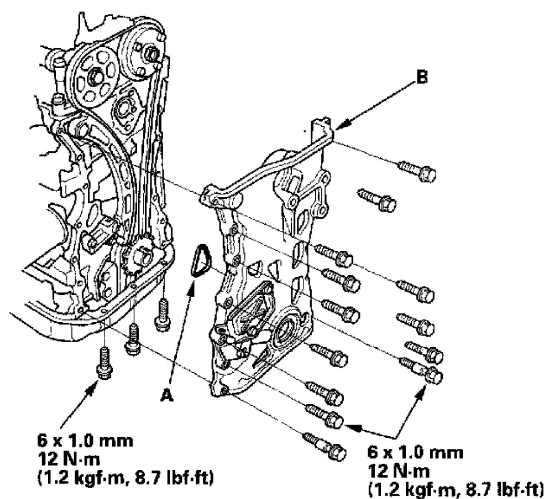


12. Apply liquid gasket, P/N 08718-0009, evenly to the cylinder block mating surface of the chain case and to the inner threads of the holes.  
13. Apply liquid gasket to the cylinder block upper surface contact areas (A) on the chain case.



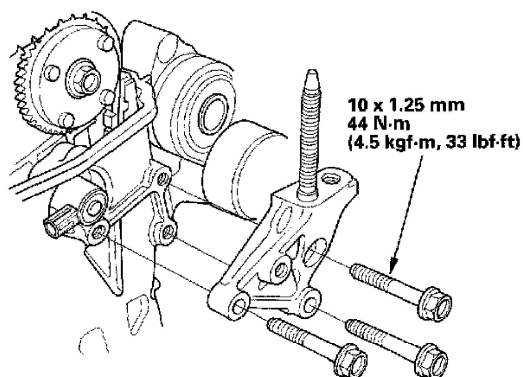
14. Apply liquid gasket, P/N 08718-0009, evenly to the oil pan mating surface of the chain case and to the inner threads of the holes.

**NOTE:** Do not install the parts if **5 minutes or more** have elapsed since applying liquid gasket. Instead, reapply liquid gasket after removing old residue.

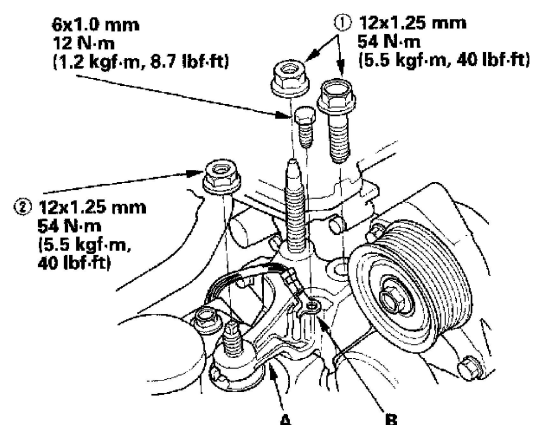


15. Install the new O-ring (A) on the chain case. Set the edge of the chain case (B) to the edge of the oil pan (C), then install the chain case on the cylinder block (D).

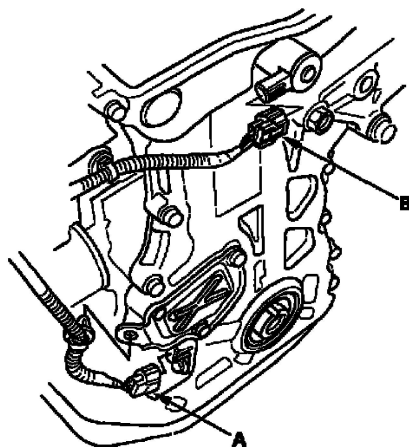
**NOTE:** When installing the chain case, do not slide the bottom surface on the oil pan mounting surface.



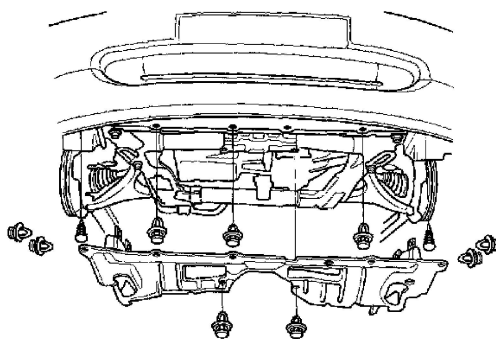
16. Install the side engine mount bracket.



17. Install the upper bracket (A), then tighten the bolt/ nuts in the numbered sequence shown.
18. Install the ground cable (B).
19. Install the variable valve timing control (VTC) oil control solenoid valve.



20. Connect the crankshaft position (CKP) sensor connector (A) and VTC oil control solenoid valve connector (B).
21. Install the crankshaft pulley.
22. Install the cylinder head cover.
23. Install the drive belt.



24. Install the splash shield.