



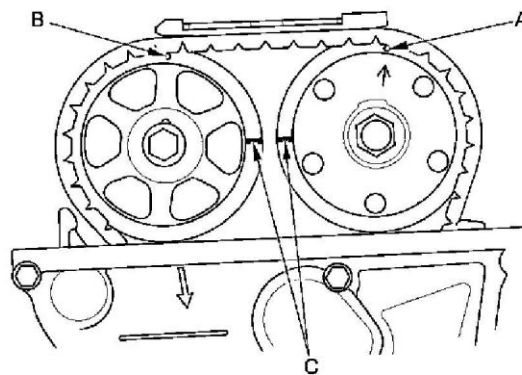
Acura TSX Sport Wagon L4-2.4L 2011 Timing Chain: Service and Repair

Cam Chain Removal

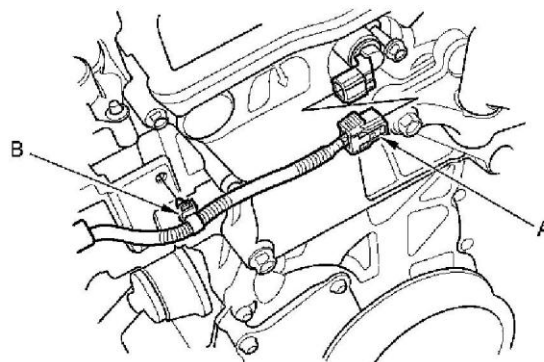
Cam Chain Removal

NOTE: Keep the cam chain away from magnetic fields.

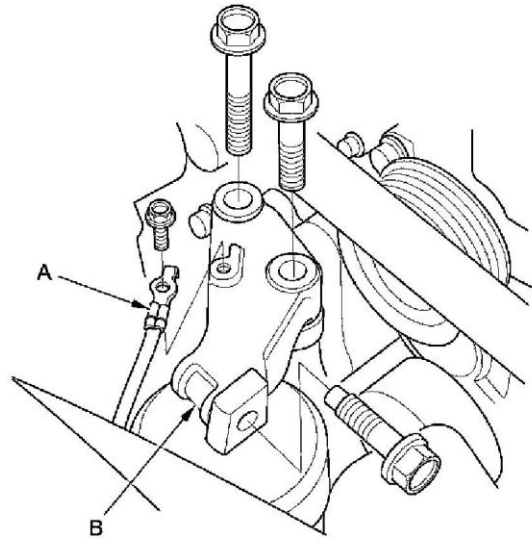
1. Remove the right front wheel.
2. Remove the front splash shield.
3. Remove the drive belt See: Drive Belts, Mounts, Brackets and Accessories/Drive Belt/Service and Repair.
4. Remove the cylinder head cover See: Cylinder Head Assembly/Valve Cover/Service and Repair/Cylinder Head Cover Removal.
5. Set the No. 1 piston at top dead center (TDC). The punch mark (A) on the 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 the exhaust camshaft sprocket.



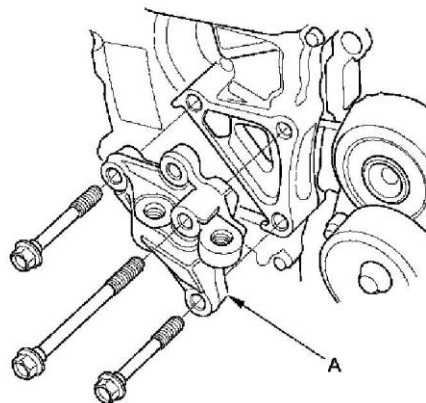
6. Disconnect the VTC oil control solenoid valve connector (A) and remove the harness clamp (B).



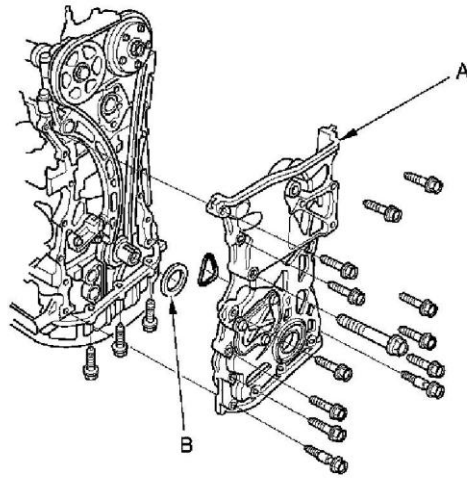
7. Remove the VTC oil control solenoid valve See: Variable Valve Timing/Variable Valve Timing Solenoid/Service and Repair/VTC Oil Control Solenoid Valve Removal/Test/Installation.
8. Remove the crankshaft pulley.
9. Lift and support the engine with a jack and a wood block under the oil pan.
10. Remove the ground cable (A), then remove the side engine mount bracket (B).



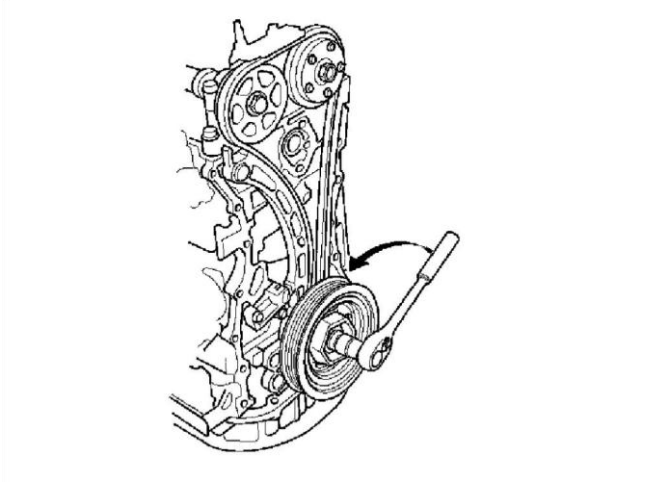
11. Remove the side engine mount bracket (A).



12. Remove the cam chain case (A) and the spacer (B).

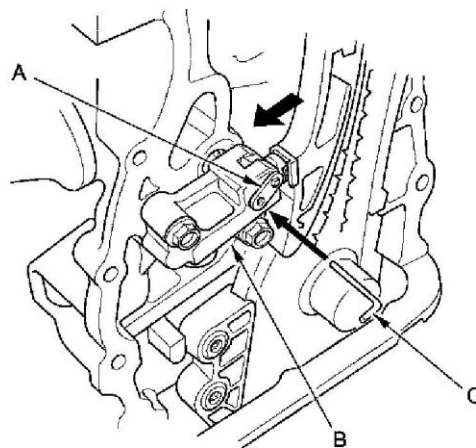


13. Loosely install the crankshaft pulley.
14. Turn the crankshaft counterclockwise to compress the auto-tensioner.

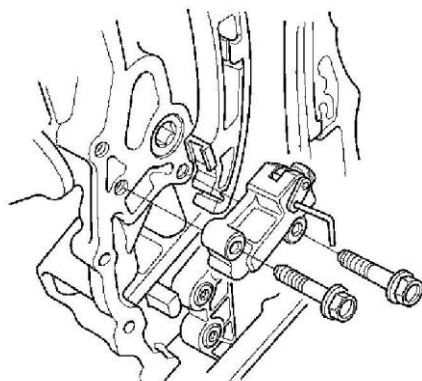


15. Rotate the crankshaft counterclockwise to align the holes on the lock (A) and the auto-tensioner (B), then insert a 1.2 mm (3/64 in) diameter pin (C) into the holes. Turn the crankshaft clockwise to secure the pin.

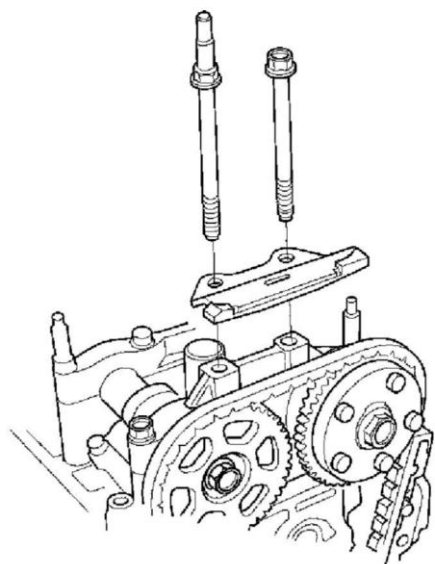
NOTE: If the holes in the lock and the auto-tensioner do not align, continue to rotating the crankshaft counterclockwise until the holes align, then install the pin.



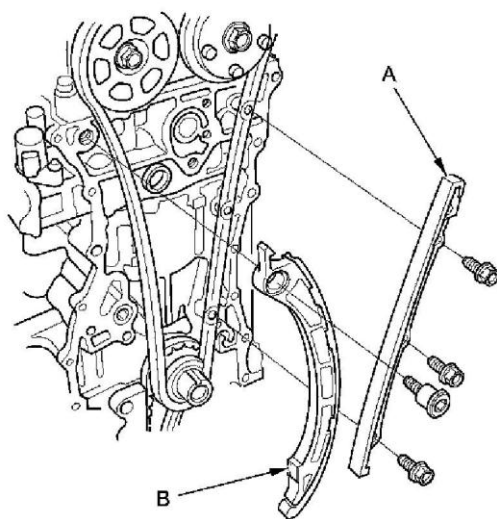
16. Remove the auto-tensioner.



17. Remove cam chain guide B.



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



19. Remove the cam chain.

Timing Chain: Service and Repair

Cam Chain Installation

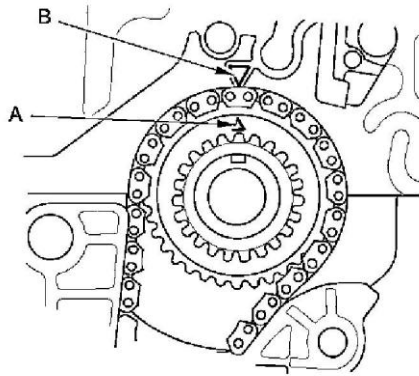
Cam Chain Installation

Special Tools Required

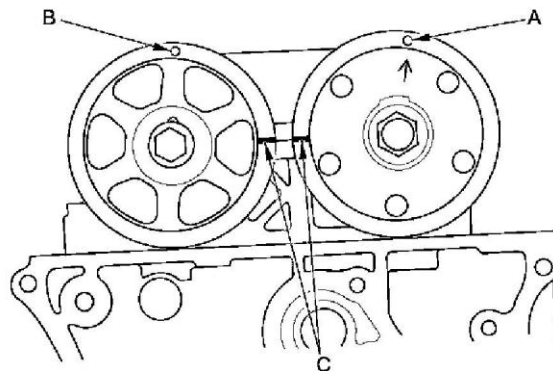
- Camshaft Lock Pin Set 07AAB-RWCA120

NOTE:

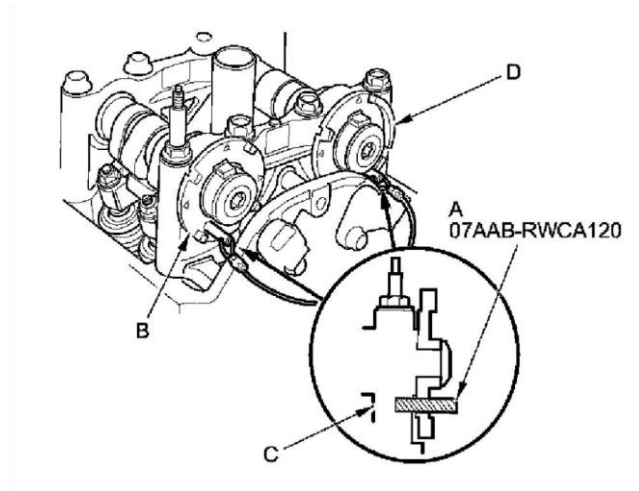
- Keep the cam chain away from magnetic fields.
 - Before doing this procedure, check that the VTC actuator is locked by turning the VTC actuator counterclockwise. If not locked, turn the VTC actuator clockwise until it stops, then recheck it. If it is still not locked, replace the VTC actuator.
1. Set the crankshaft to top dead center (TDC). Align the TDC mark (A) on the crankshaft sprocket with the pointer (B) on the engine block.



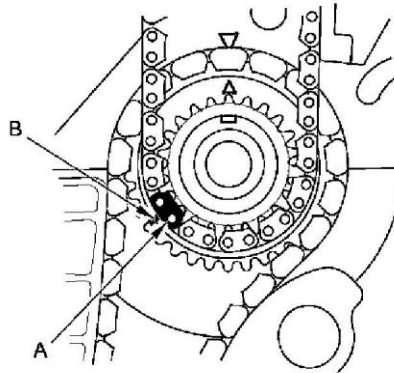
2. Set the camshafts to TDC. The punch mark (A) on the VTC actuator and the punch mark (B) on the exhaust camshaft sprocket should be at the top. Align the TDC marks (C) on the VTC actuator and the exhaust camshaft sprocket.



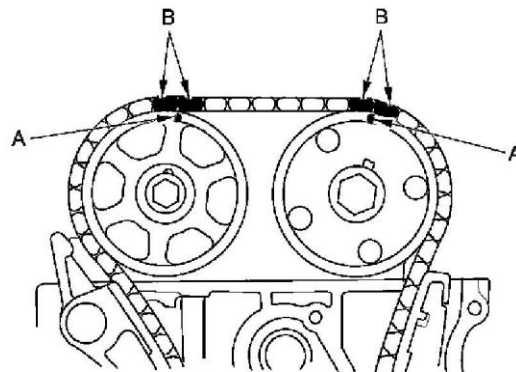
3. To hold the intake camshaft, insert a camshaft lock pin set (A) into the maintenance hole in CMP pulse plate A (B) and through the No. 5 rocker shaft holder (C).



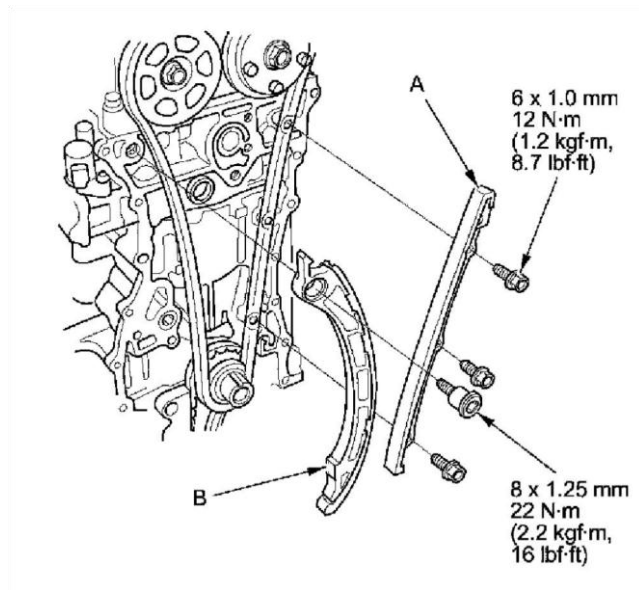
4. To hold the exhaust camshaft, insert a camshaft lock pin set (A) into the maintenance hole in CMP pulse plate B (D) and through the No. 5 rocker shaft holder (C).
5. Install the cam chain on the crankshaft sprocket with the colored link plate (A) aligned with the mark (B) on the crankshaft sprocket.



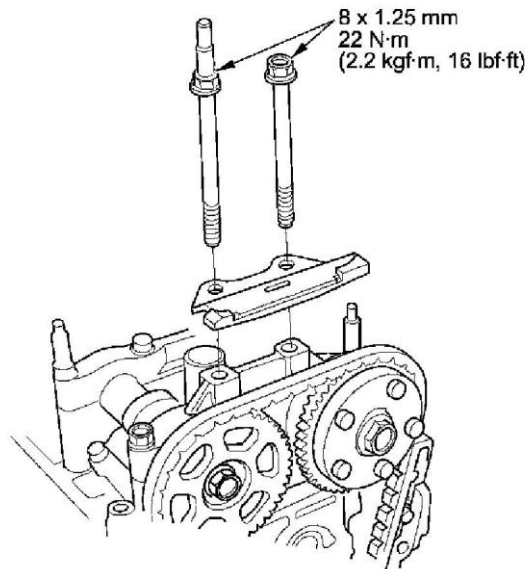
6. Install the cam chain on the VTC actuator and the exhaust camshaft sprocket with the punch marks (A) aligned with the center of the two colored link plates (B).



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

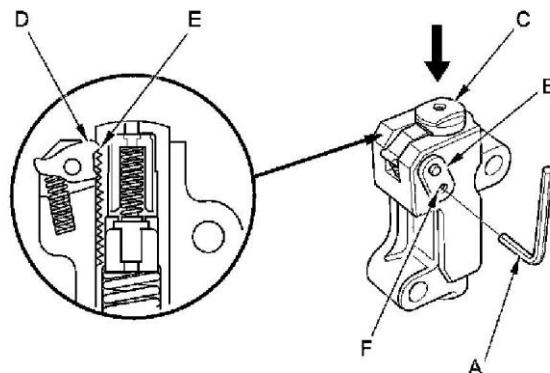


8. Install cam chain guide B.

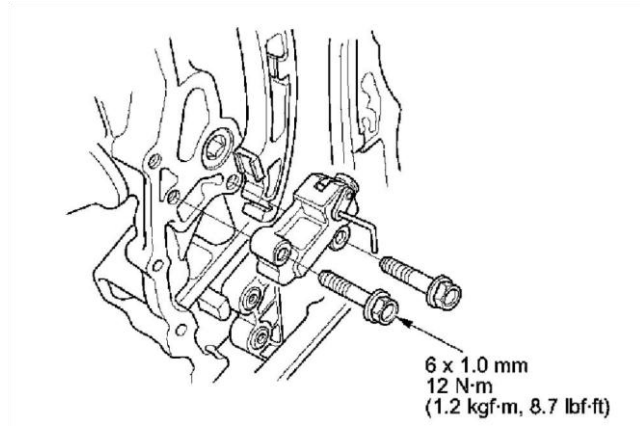


9. Compress the auto-tensioner when replacing the cam chain. Remove the diameter pin (A) from the auto-tensioner that was installed during removal. Turn the plate (B) counterclockwise, to release the lock, then press the rod (C), and set the first cam (D) to the first edge of the rack (E). Insert the 1.2 mm (3/64 in) diameter pin into the holes (F).

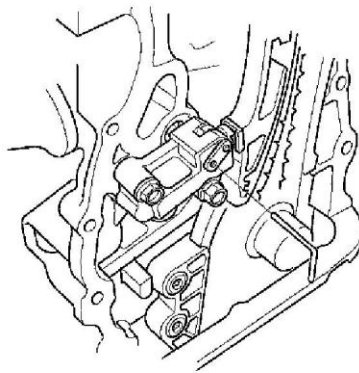
NOTE: If the chain tensioner is not set up as described, the tensioner will become damaged.



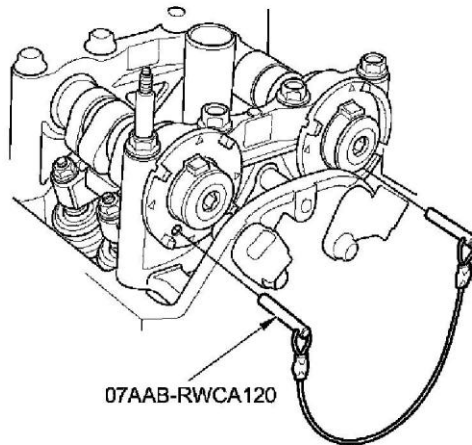
10. Install the auto-tensioner.



11. Remove the diameter pin from the auto-tensioner.



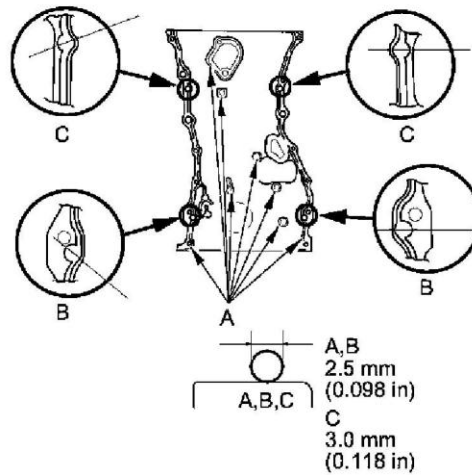
12. Remove the camshaft lock pin set.



13. Check the chain case oil seal for damage. If the oil seal is damaged, replace the chain case oil seal See: Seals and Gaskets/Front Crankshaft Seal/Service and Repair.
14. Remove the old liquid gasket from the chain case mating surfaces, the bolts, and the bolt holes.
15. Clean and dry the chain case mating surfaces.
16. Apply liquid gasket (P/N 08717-0004, 08718-0003, or 08718-0009) to the engine block mating surface of the chain case and to the inside edge of the threaded bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

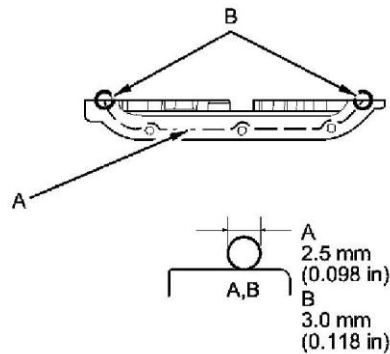
- Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A) and (B).
- Apply a 3.0 mm (0.118 in) diameter bead of liquid gasket along the broken line (C).
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



17. Apply liquid gasket (P/N 08717-0004, 08718-0003, or 08718-0009) to the oil pan mating surface of the chain case, and to the inside edge of the threaded bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

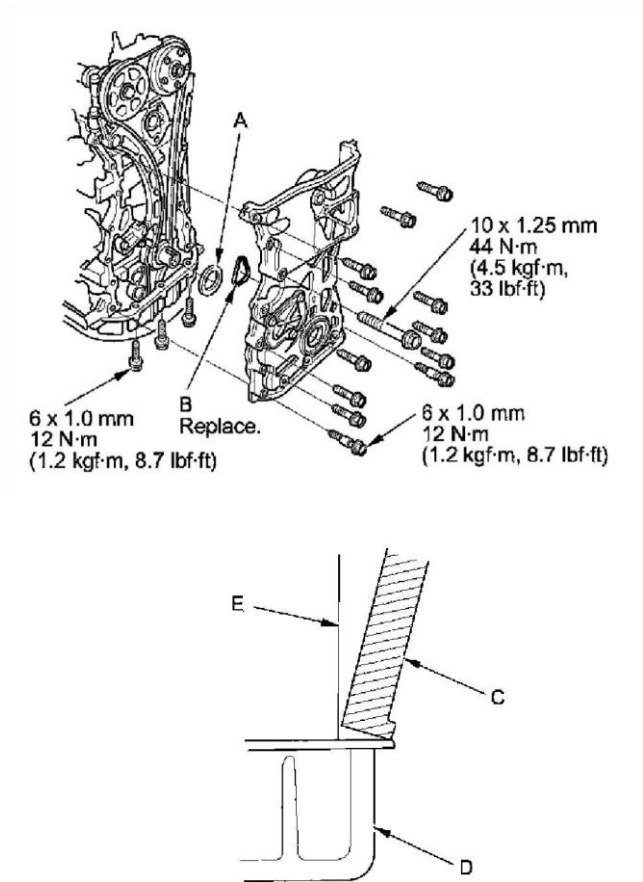
- Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
- Apply a 3.0 mm (0.118 in) diameter bead of liquid gasket along the broken line (B).
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



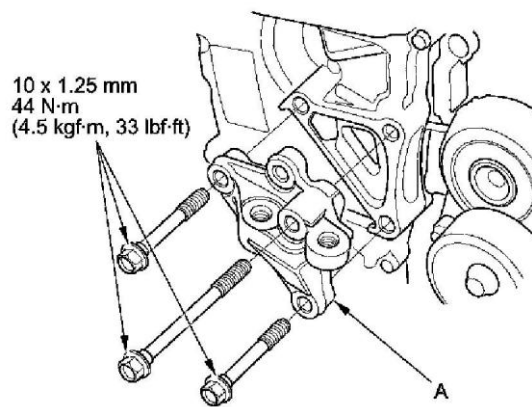
18. Install the spacer (A), then install a new O-ring (B) on the chain case. Set the edge of the chain case (C) to the edge of the oil pan (D), then install the chain case on the engine block (E). Wipe off the excess liquid gasket on the oil pan and the chain case mating area.

NOTE:

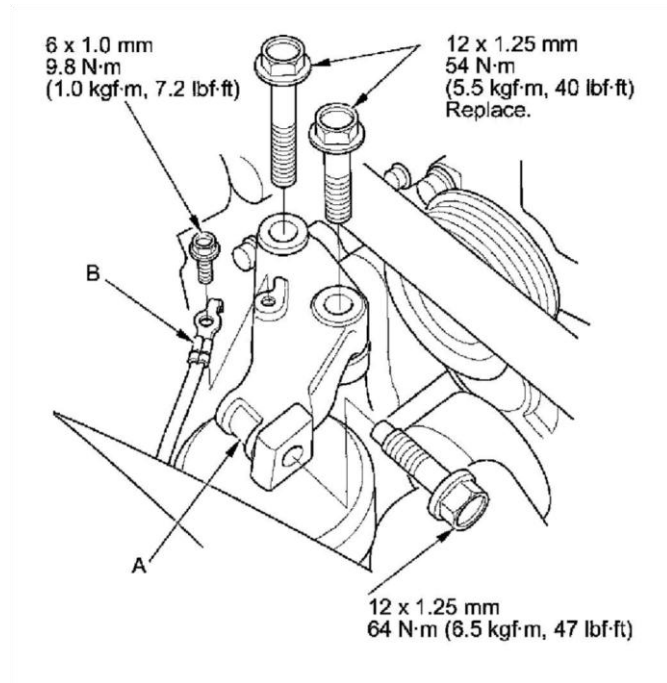
- When installing the chain case, do not slide the bottom surface onto the oil pan mounting surface.
- Wait at least 30 minutes before filling the engine with oil.
- Do not run the engine for at least 3 hours after installing the chain case.



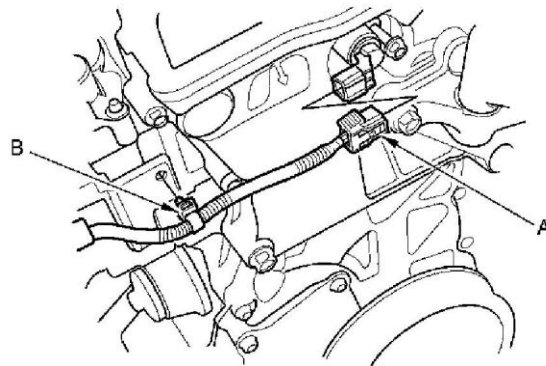
19. Install the side engine mount bracket (A), then tighten the side engine mount bracket mounting bolts.



20. Install the side engine mount bracket (A), then loosely install the new side engine mount bracket mounting bolts.



21. Install the ground cable (B).
22. Remove the jack and the wood block.
23. Tighten the new side engine mount bracket mounting bolts in the numbered sequence shown.
24. Install the crankshaft pulley.
25. Install the VTC oil control solenoid valve See: Variable Valve Timing/Variable Valve Timing Solenoid/Service and Repair/VTC Oil Control Solenoid Valve Removal/Test/Installation.
26. Connect the VTC oil control solenoid valve connector (A) and install the harness clamp (B).



27. Install the cylinder head cover See: Cylinder Head Assembly/Valve Cover/Service and Repair/Cylinder Head Cover Installation.
28. Install the drive belt See: Drive Belts, Mounts, Brackets and Accessories/Drive Belt/Service and Repair.
29. Install the front splash shield.
30. Install the right front wheel.
31. Do the CKP pattern clear/CKP pattern learn procedure.