



Applies To: 2011–12 TSX L4 with M/T – ALL
2013 TSX L4 with M/T – From JH4CU2E..DC000001 thru JH4CU2E..DC001633

May 10, 2017

2011–13 TSX: Excessive Engine Oil Consumption

(Supersedes 13-075, dated February 22, 2013, to revise the information marked by the black bars)

REVISION SUMMARY

Under REQUIRED MATERIALS the oil was changed to Full Synthetic Engine Oil, P/N 08798-9073.

SYMPTOM

The oil consumption is more than the client expects; the engine oil level is low on the dipstick sooner than expected based on overall vehicle usage, condition, and maintenance history. In some cases, the oil warning light may come on.

POSSIBLE CAUSE

There are multiple possible contributors that may cause the client to perceive a higher than expected oil consumption. Talk to the customer about the many factors that can influence oil consumption (see the “Service Consultant” section of this service bulletin). If you do not see any other factors contributing to the oil consumption, consider engine-braking as the possible cause.

Engine-braking creates a high vacuum condition in the engine that may cause more oil to pass by the piston rings than expected. This condition may occur on vehicles with manual transmissions as drivers can downshift and decelerate with minimal or no throttle input. If a driver regularly downshifts to decelerate, especially at higher RPMs with no throttle input, such as driving down a long grade, or when coming to a stop, the client may notice that oil is being consumed at a higher than expected rate.

CORRECTIVE ACTION

If you determine that engine braking is the possible cause, replace all the engine pistons and the piston rings.

Service Consultant:

Talk to the client about the many factors that contribute to oil consumption, such as maintenance history, using the incorrect oil, driving under extreme conditions, or other factors that can contribute to oil consumption.

Remind the client that it's not uncommon that oil may need to be added between services. Modern engines and oils can go much longer between scheduled oil changes, which makes it necessary to periodically check the engine oil level.

Recommend to your client that it's a good idea to check the engine oil regularly (as recommended in the Owner's Manual) and add oil as needed.

PARTS INFORMATION

Bolt-Washer (ten required): P/N 90005-RNA-A01

Connecting Rod Bolt (eight required):
P/N 13204-RBB-004

Cylinder Head Gasket Kit: P/N 06110-R44-A00

Chain Case Gasket Kit: P/N 06114-R40-J01

Flange Bolt (12x45): P/N 90165-SDA-A00

Flange Bolt (12x65): P/N 90168-TA0-A00

Flange Bolt (12x30) (two required):
P/N 90176-SKN-000

Flexible Exhaust Gasket: P/N18229-SEA-013

Intake Manifold Gasket (four required):
P/N 17115-R40-A01

Primary Converter Gasket: P/N 18115-R40-A01

Piston Ring Set (four required): P/N 13011-RL5-A01

Piston Set A: P/N 13010-RL5-A00

(Go to ORDERING PISTONS on page 16 for more information about which piston set you need.)

Piston Set B: P/N 13020-RL5-A00

(Go to ORDERING PISTONS on page 16 for more information about which piston set you need.)

NOTE: You need a total of four piston sets, but you will probably need a mix of both A and B piston sets.

TOOL INFORMATION

- Camshaft Lock Pin Set: T/N 07AAB-RWCA120
- Gasket Remover/Pan Separator: T/N LIL50190
- Piston Ring Expander (Snap-On T/N PRS8 or equivalent)
- Piston Ring Compressor (SCP1287 or equivalent)
- 1/2 in. Drive Torque Angle Gauge (commercially-available)
- Engine Hanger: P/N AAR-T1256

REQUIRED MATERIALS

- Hondabond HT Silicone Liquid Gasket
- Full Synthetic Engine Oil 5W-20: P/N 08798-9073
- Acura Long-Life Antifreeze/Coolant Type 2:
P/N OL999-9011A
- Acura Genuine Power Steering Fluid:
P/N 08206-9002A

WARRANTY CLAIM INFORMATION

Operation Number: 111167
Flat Rate Time: 11.2 hours
Failed Part: P/N 13011-R40-A12
Defect Code: 03217
Symptom Code: 09401
Skill Level: Repair Technician

REPAIR PROCEDURE

The following service manual procedures have been used in full or in part within this service bulletin. For more detail on these procedures, and torque specifications for some components, refer to the appropriate service manual, or view them online.

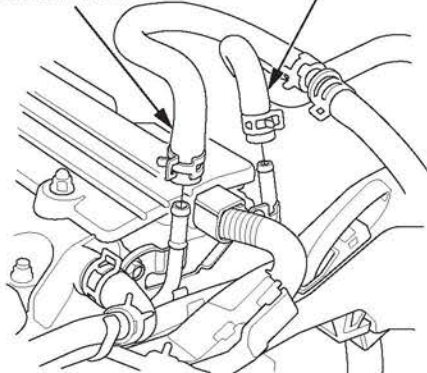
- Engine Oil Replacement
- Battery Terminal Disconnection and Reconnection
- Fuel Pressure Relieving
- Coolant Replacement
- Drive Belt Removal/Installation
- Intake Manifold Removal and Installation
- Warm Up TWC Removal/Installation
- Fuel Line/Quick-Connect Fitting Removal
- Cylinder Head Removal
- Cam Chain Removal
- Rocker Arm Assembly Removal
- Valve Adjustment
- Oil Pan Installation
- Idle Learn Procedure

NOTE:

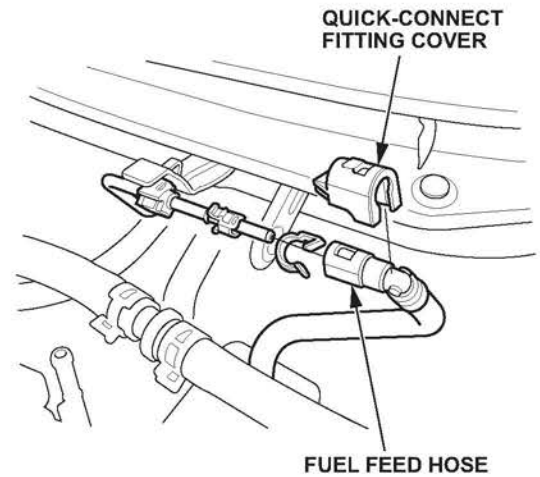
- **Before starting work**, make sure to order the correct number of "A" and "B" pistons. Refer to **ORDERING PISTONS** on page 16 of this bulletin.
- Use fender covers to avoid damaging painted surfaces.
- To avoid damaging the wires and terminals, unplug the wiring connectors carefully while holding the connector portion.
- To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 100°F (38°C) before loosening the cylinder head bolts. If needed, connect the HDS to the DLC, and monitor ECT SENSOR 1.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact any other wiring or hoses, or interfere with any other parts.

1. Make sure that Service Bulletin 11-049, *Product Update: Software Update to Improve Fuel Injector and VTC Timing*, is complete by checking the iVIN status.
2. Put the vehicle on a lift.
3. Relieve the fuel pressure.
4. Do the battery terminal disconnection procedure.
5. Drain the engine oil.
6. Remove the strut brace (if equipped).
7. Drain the engine coolant.
8. Remove the drive belt.
9. Remove the intake manifold.
10. Remove the warm up three way catalytic converter (TWC).
11. Disconnect the brake booster vacuum and EVAP canister hoses.

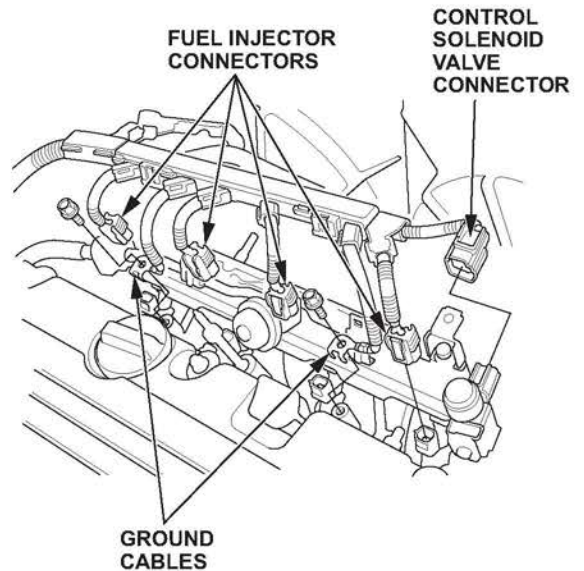
BRAKE BOOSTER VACUUM HOSE **EVAP CANISTER HOSE**



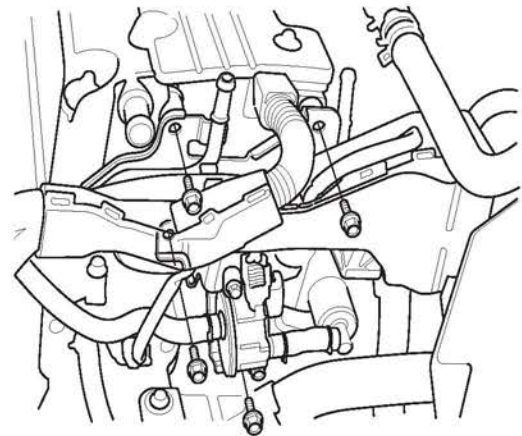
12. Remove the quick-connect fitting cover, then disconnect the fuel feed hose.



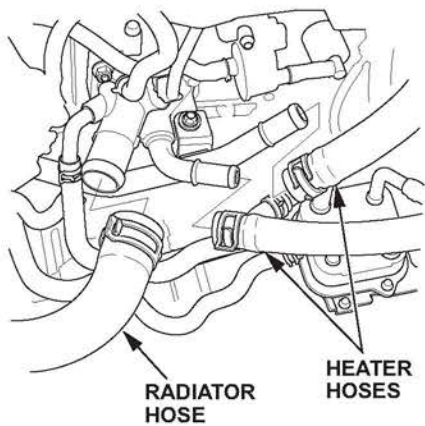
13. Disconnect the four fuel injector connectors, the engine mount control solenoid connectors, and the ground cables.



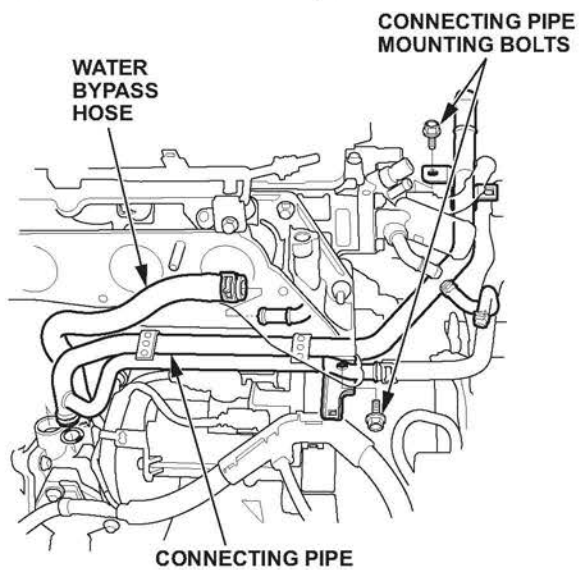
14. Remove the four bolts securing the EVAP canister purge valve bracket.



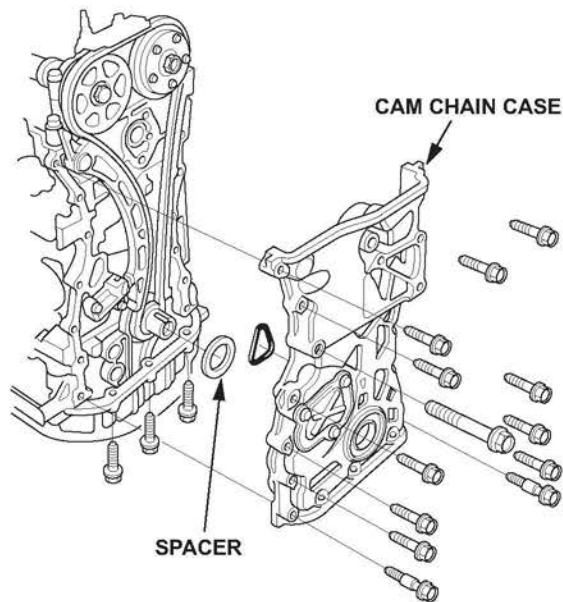
15. Disconnect the upper radiator hose, the radiator hose, and the heater hoses.



16. Remove the two bolts securing the connecting pipe. Disconnect the water bypass hose.

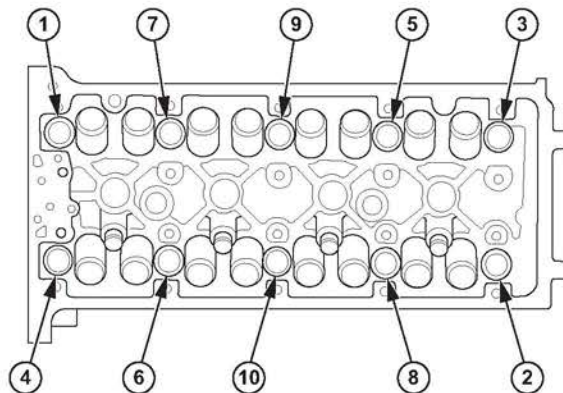


17. Remove the front cam chain cover and the cam chain.



18. Remove the rocker arm assembly and both cam shafts.

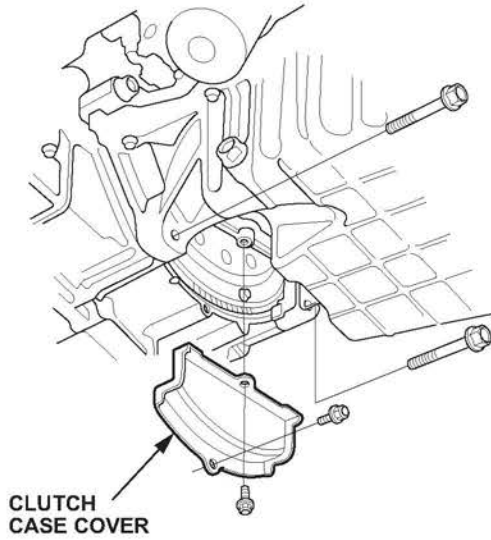
19. Remove the cylinder head bolts in sequence. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all the bolts are loosened.



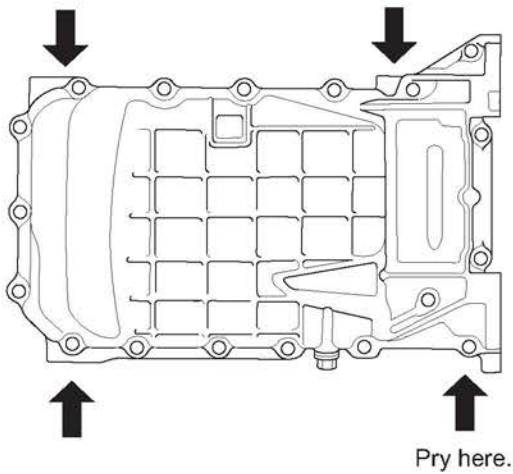
20. Remove the cylinder head.

21. Raise the vehicle on the lift.

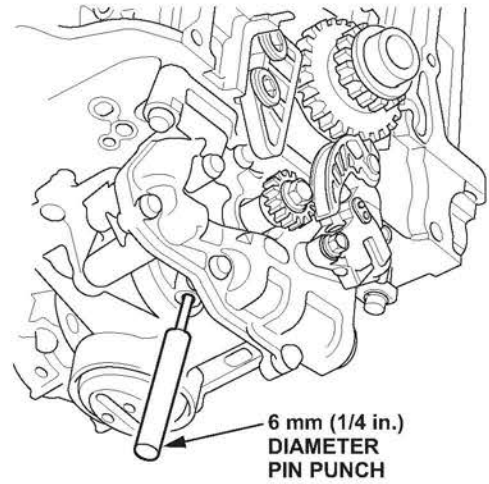
22. Remove the clutch case cover, and remove the two bolts securing the oil pan to the transmission.



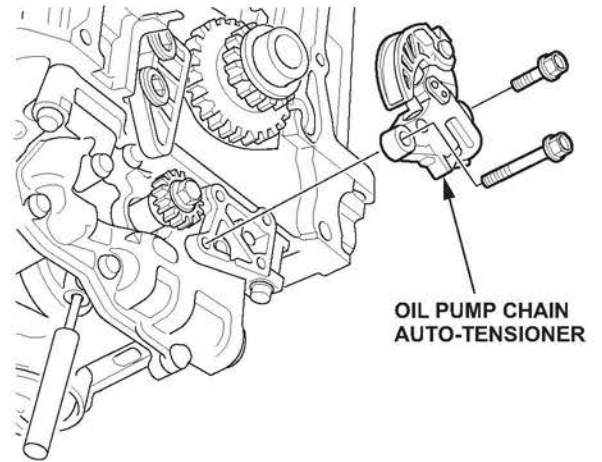
23. Remove the bolts securing the oil pan.
24. Using the pan separator, separate the oil pan from the engine block in the indicated areas, and remove the oil pan.



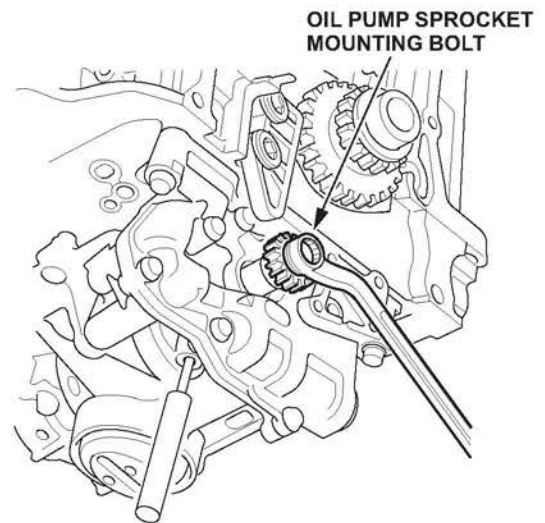
25. To hold the balancer shaft, insert a 6 mm (1/4 in.) diameter long pin punch into the maintenance hole in the balancer shaft holder and through the rear balancer shaft.



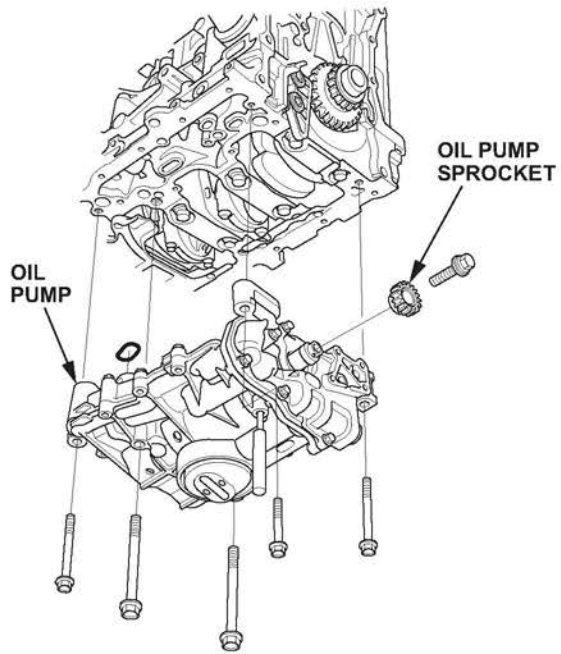
26. Remove the oil pump chain auto-tensioner.



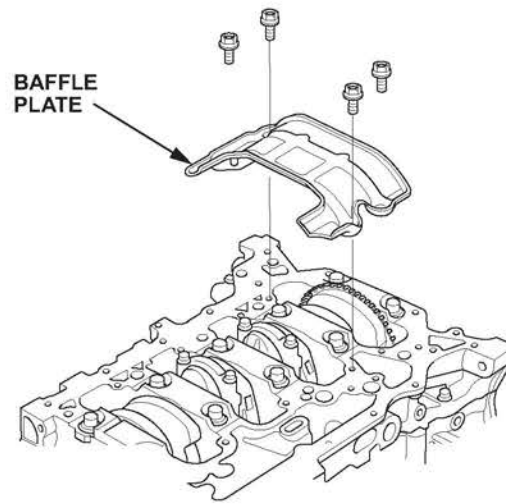
27. Loosen the oil pump sprocket mounting bolt.



28. Remove the oil pump sprocket and the oil pump.



29. Remove the baffle plate.



30. Lower the vehicle to a comfortable working height, and place a clean shop towel around the cylinder wall to prevent debris from entering the coolant passage.

31. Check the cylinder walls by rubbing your fingernail or a pencil with light pressure perpendicular to any vertical scratches that are in the cylinder bore.
- If your fingernail or pencil does not catch on the scratches, the cylinder block is OK. Go to step 33.
 - If your fingernail or pencil catches on the scratches, go to step 32 to continue checking the cylinder block.



Normal honing marks shown.



Light scratches are not abnormal. Ensure a fingernail or pencil "catches" on the scratches before replacing the block.

32. Remove the piston from the scratched cylinder bore. Inspect the piston skirt for any scratches or damage that corresponds with the scratched cylinder bore.
- If the piston skirt has deep scratches, or is damaged, and corresponds to the position of the bore scratches, replace the engine block. This bulletin no longer applies. You must obtain DPSM authorization and refer online to **Engine Removal and Installation** to reinstall the engine.
 - If the piston skirt has no damage, the cylinder block is OK; go to step 33.



NOT GOOD

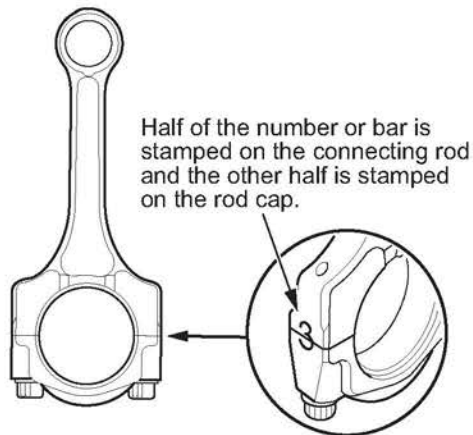


SCRAPES, DEEP SCRATCHES, OR DAMAGE

33. Remove the rod caps and the bearings.

NOTE:

- Mark each rod cap and its corresponding rod with the cylinder number.
- The existing markings refer to the size of the big end of the rod, not the number of the cylinder.



34. Use a wooden hammer handle to drive out each of the piston and connecting rod assemblies.

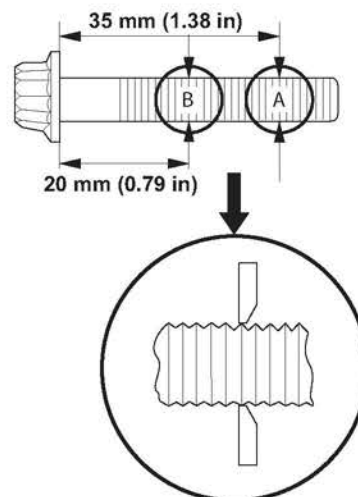
NOTE: Be careful not to damage the cylinder walls or the crankshaft when pushing out the pistons and the connecting rod assemblies.

35. Visually inspect all the connecting rod bearings for signs of damage.

NOTE: If your fingernail catches on a scratch or groove in the bearing, replace it. Pictured are normal reusable rod bearings after about 35,000 miles. Some discoloration is normal and does not require replacement.



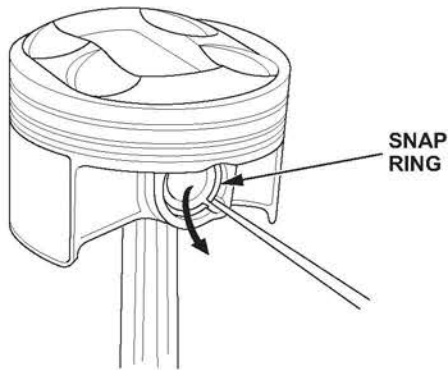
36. Measure the diameter of each connecting rod bolt at points A and B.



37. Calculate the difference in diameter between points A and B:

- Point A – Point B = Difference in Diameter
- Difference in Diameter Specification:
0 - 0.1 mm (0.004 in.)
- If the difference in diameter is out of specification, replace the connecting rod bolt.

38. Put on eye protection, then remove the snap rings from both sides of each piston. Start at the cutout in the piston pin bore. Remove the snap rings carefully so they don't go flying or get lost.

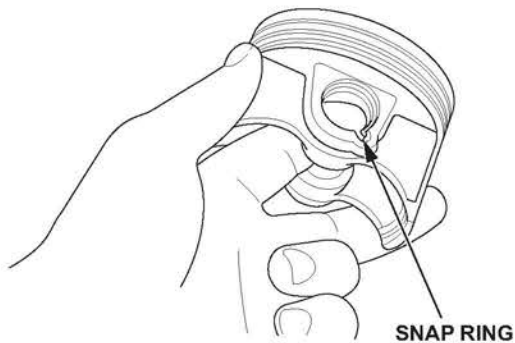


39. Put on gloves, heat the piston and the ends connecting rod to about 158°F (70°C), then remove the piston pin.

NOTE: The old piston, the pin, and the snap rings won't be reused.

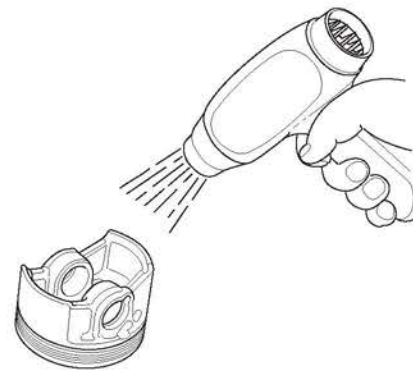


40. Install a new piston pin snap ring on one side of a new piston.



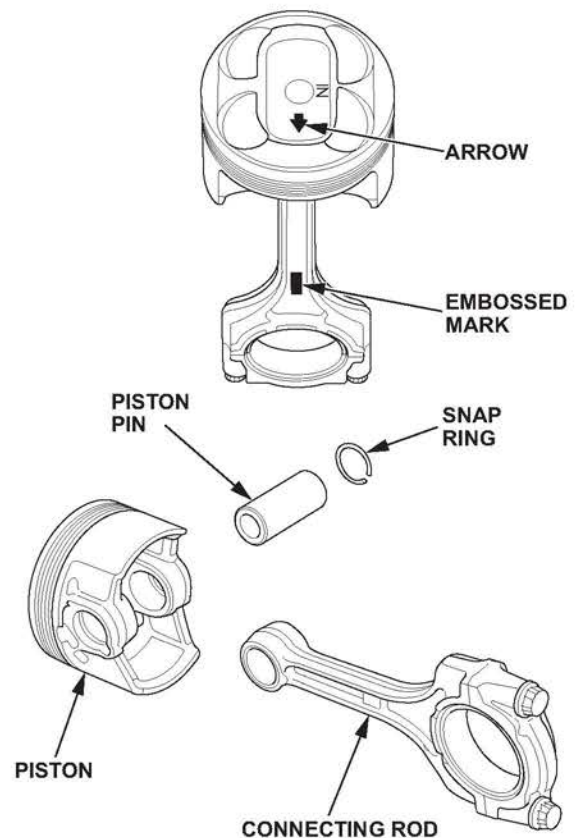
41. Coat the piston pin bore in the piston, the bore in the connecting rod, and the piston pin with new engine oil.

42. Heat the piston to about 158°F (70°C).



43. Assemble the piston and the connecting rod with the arrow and the embossed mark on the same side. Install the piston pin.

NOTE: When the piston and the rod end are heated properly, the piston pin should slide into position relatively easily. You will damage the piston if you try to use a hammer or a press to force the piston pin in.



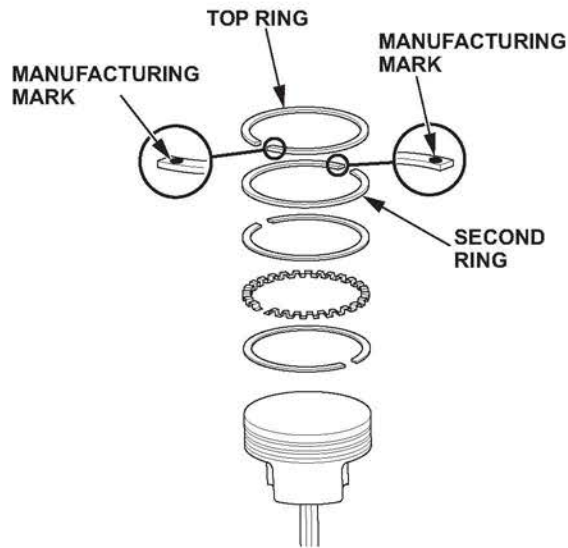
44. Install the remaining snap ring.

45. Turn the snap ring in the ring grooves until the end gaps are positioned at the bottom of the piston.

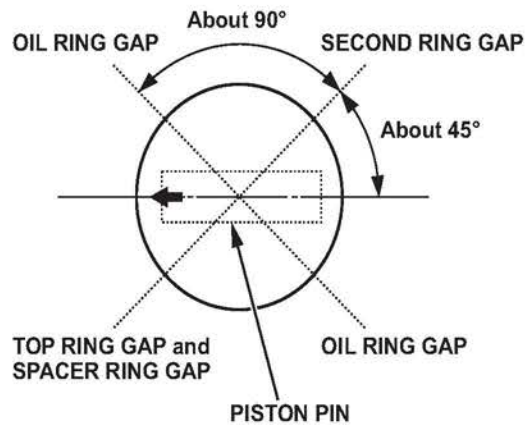
46. Repeat steps 39-46 for the remaining pistons.

47. Using a piston ring expander, install the spacer and two oil rings. Then install the second ring and top ring with the manufacturing marks facing up. The second ring has a "2" followed by a letter or letters. The top ring has a "1" followed by a letter or letters.

NOTE: The new rings may not have the same manufacturing marks as the originals.

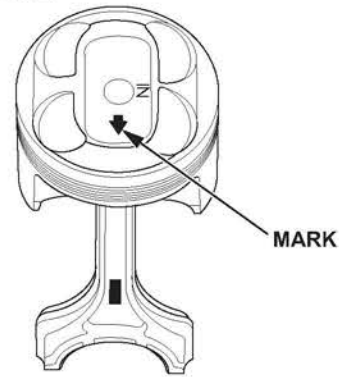


48. Rotate the rings in their grooves to make sure they do not bind.
49. Position the ring end gaps as shown.

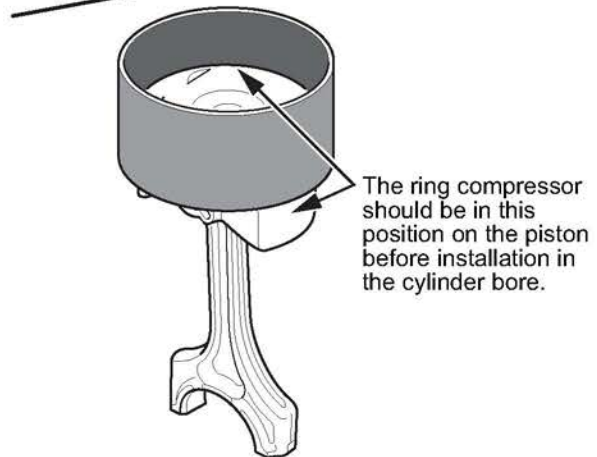
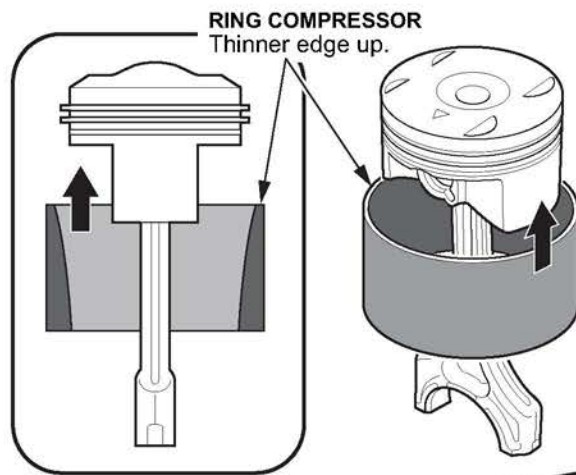


50. Rotate the crankshaft so that cylinders 1 and 4 are at bottom dead center (BDC).
51. Remove the connecting rod cap to piston 1, and check that the bearing is securely in place.
52. Apply new engine oil to the piston, the inside of the ring compressor, the cylinder bore, and the rod bearings.

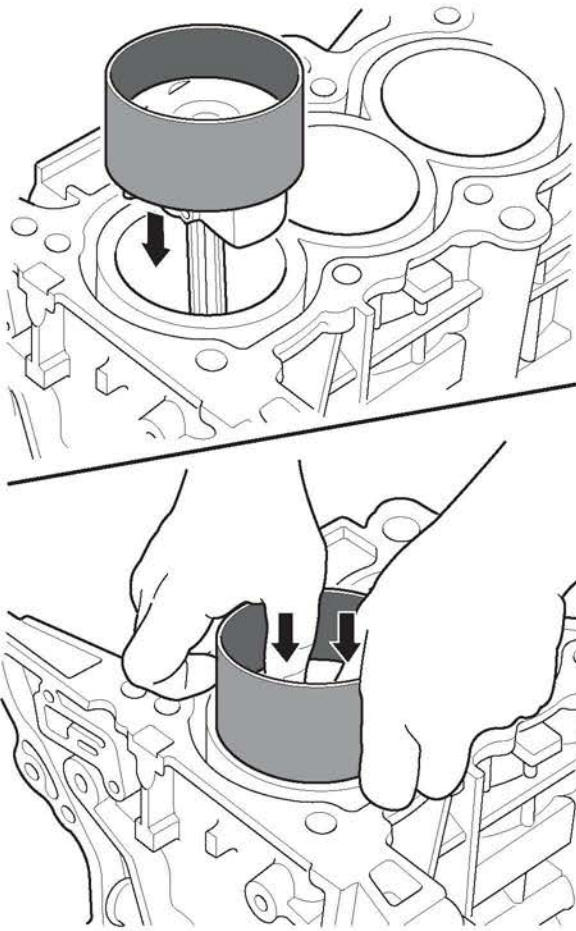
53. Position the mark to face the cam chain end of the engine block.



54. Set the piston in the ring compressor, and position the piston in the cylinder noting the rod/cap marks that you made in step 34.



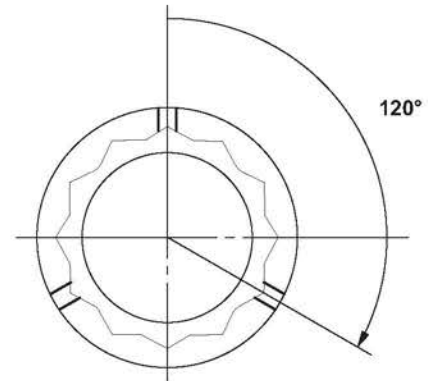
55. Set the ring compressor on the piston bore, then push the piston in with your hands.



56. Stop after the ring compressor pops free, and check the connecting rod-to-rod journal alignment before pushing the piston into place.
57. Apply new engine oil to the bolt threads, then install the connecting rod cap with the bearing. Torque the bolts to **41 N·m (30 lb-ft)**.

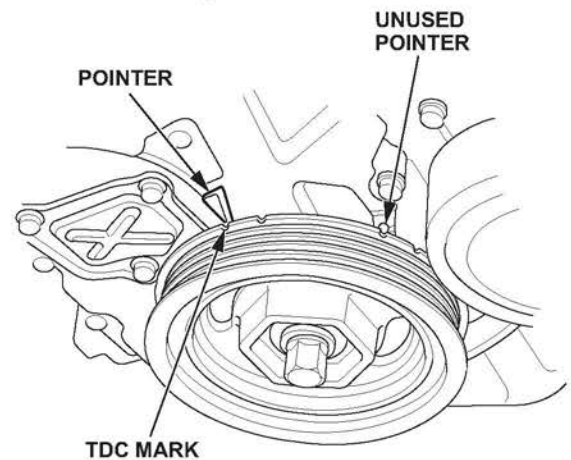
58. Tighten the connecting rod bolts an additional **120°**.

NOTE: If you tightened a rod bolt beyond the specified angle, remove it and repeat steps 58 and 59. Do not loosen the bolt back to the specified angle.

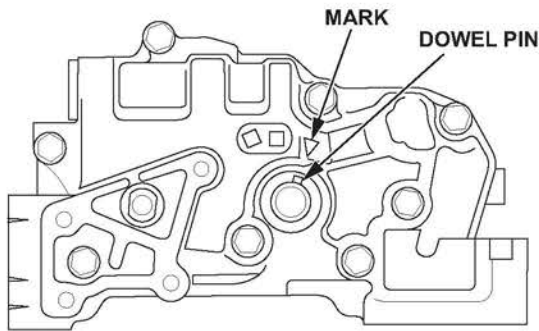


59. Repeat steps 48 thru 59 for piston number 4.
60. Rotate the crankshaft so that cylinders 2 and 3 are at bottom dead center (BDC).
61. Repeat steps 48 thru 59 for piston number 2 and 3.
62. Rotate the crankshaft several times after all connecting rods have been installed to ensure that nothing is binding.
63. Install the baffle plate, and torque the bolts to **12 N·m (8.7 lb-ft)**.
64. Place the No. 1 piston at top dead center (TDC). Make sure the mark lines up with the pointer.

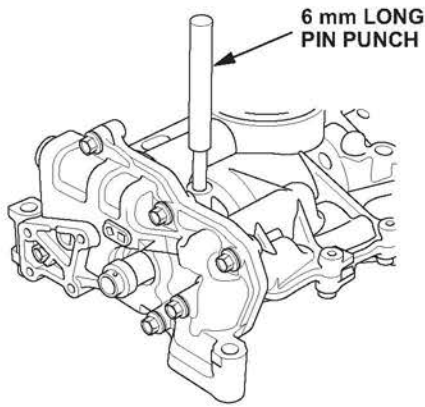
NOTE: The other pointer is not used.



65. Align the dowel pin on the rear balancer shaft with the mark on the oil pump.

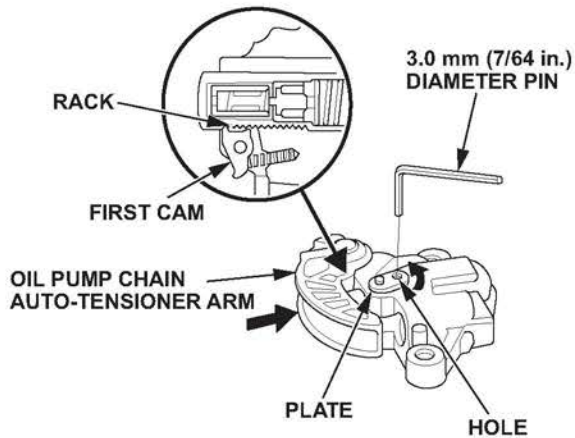


66. To hold the rear balancer shaft, insert the 6 mm (1/4 in.) diameter long pin punch into the maintenance hole in the balancer shaft holder and through the rear balancer shaft.

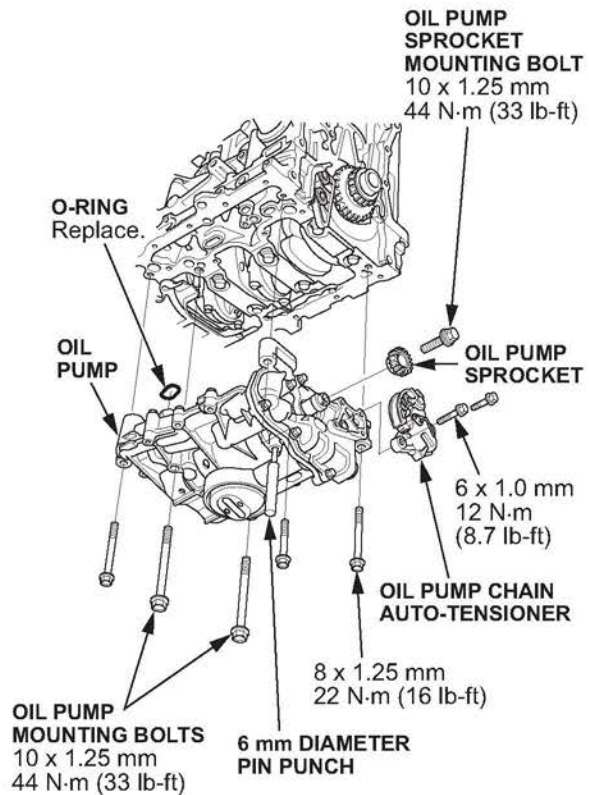


67. Turn the oil pump auto-tensioner plate counterclockwise to release the lock, then push the auto-tensioner arm, and set the first cam to the first edge of the rack. Insert a 3.0 mm (7/64 in.) diameter pin into the hole.

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



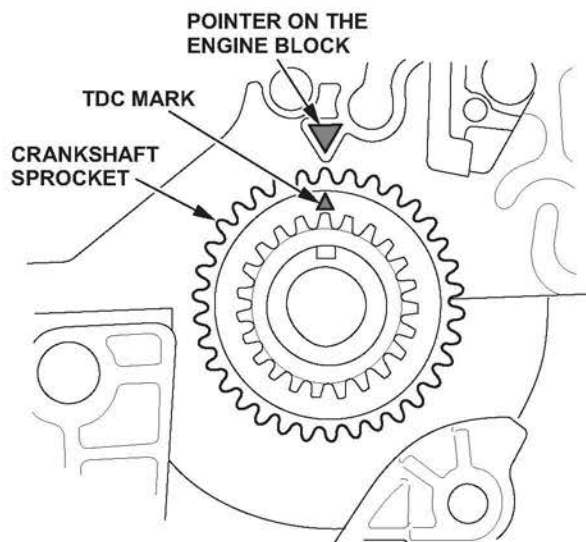
68. Apply new engine oil to the threads of the oil pump mounting bolts and the oil pump sprocket mounting bolt, then loosely install the oil pump with a new O-ring.



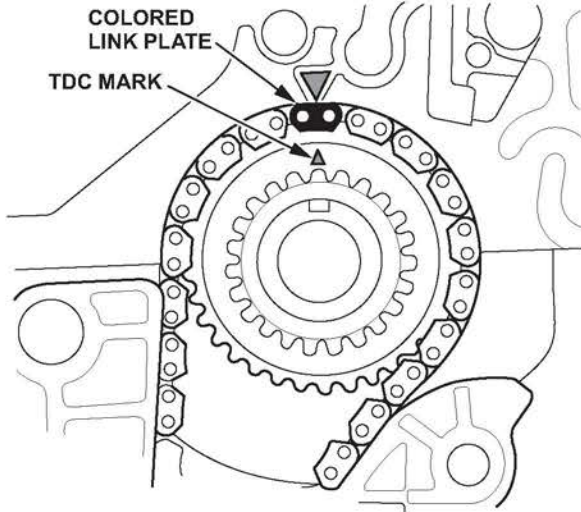
69. Torque the oil pump mounting bolts to **44 N·m (33 lb-ft)**.

70. Install the engine oil pump chain.

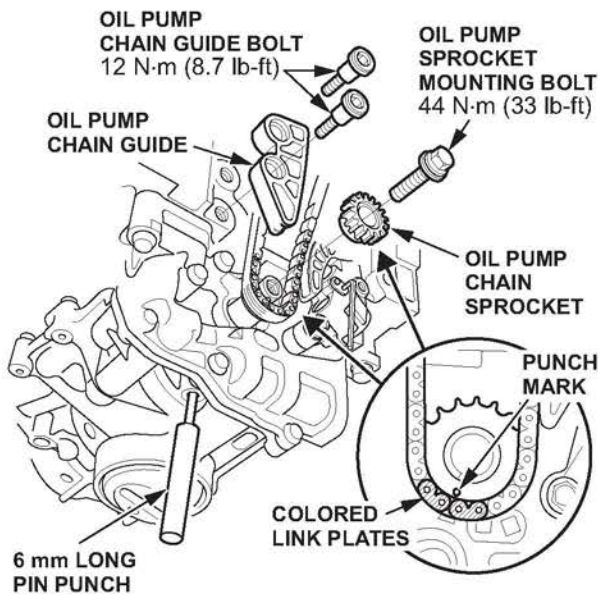
- Set the crankshaft to top dead center (TDC). Align the TDC mark on the crankshaft sprocket with the pointer on the engine block.



- Install the oil pump chain on the crankshaft sprocket with the colored link plate aligned with the TDC mark on the crankshaft sprocket.



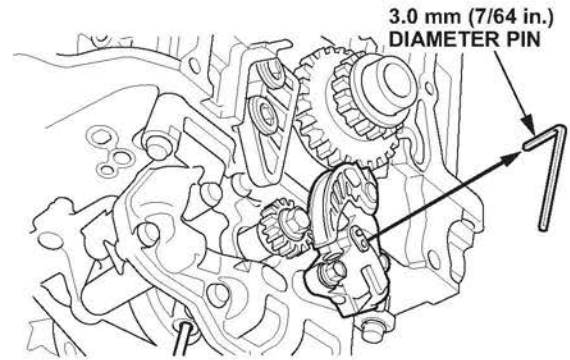
- Set the oil pump chain on the oil pump chain sprocket with the punch mark aligned with the center of the colored link plates, then install the oil pump chain sprocket to the oil pump.



- Apply new engine oil to the threads of the oil pump sprocket mounting bolt, then install it and torque it to 44 N·m (33 lb-ft).

71. Install the oil pump chain auto-tensioner, and torque the bolts to 12 N·m (8.7 lb-ft).
72. Remove the 6 mm (1/4 in.) diameter long pin punch.

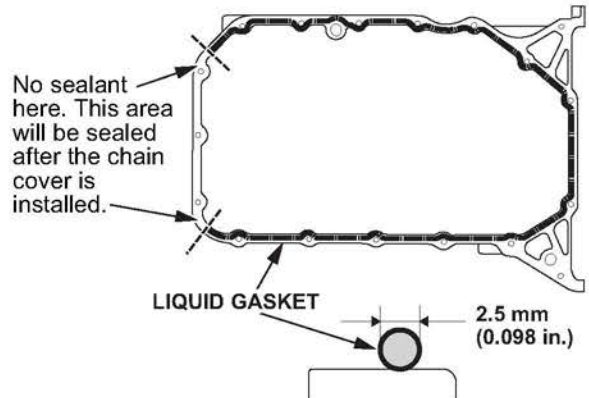
73. Remove the 3.0 mm pin from the oil pump chain auto-tensioner.



74. Remove all of the old liquid gasket from the oil pan mating surfaces, the bolts, and the bolt holes.
75. Clean and dry the oil pan mating surfaces.
76. Apply liquid gasket, P/N 08717-0004, 08718-0003, or 08718-0009, to the engine block mating surface of the oil pan 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.
- If more than 5 minutes have passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.
- Do not apply any sealant where the cam chain case is installed because the sealant will dry before you can reinstall the case.

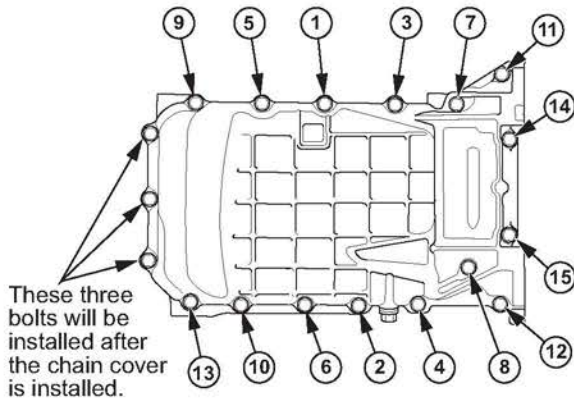


77. Install the oil pan to the engine block.

78. Tighten the bolts in three steps. In the final step, torque all bolts, in sequence, to **12 N·m (9 lb-ft)**.

NOTE:

- Wait at least 30 minutes after installing the cam chain case before filling the engine with oil.
- Do not run the engine for at least 3 hours after installing the oil pan.

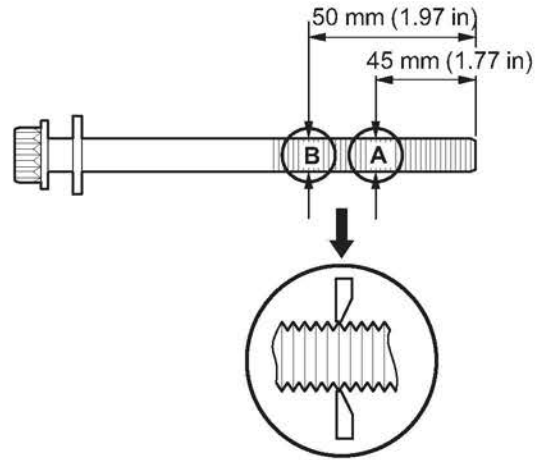


79. Install a new oil filter.

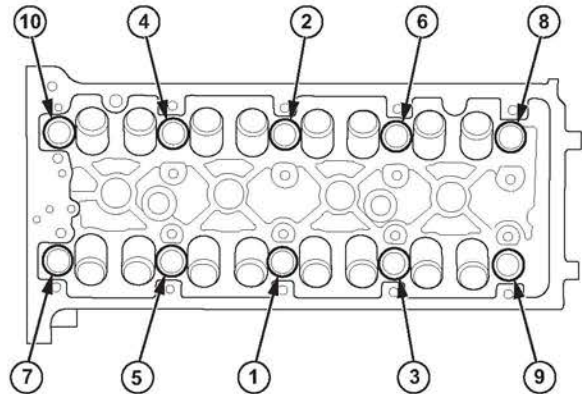
80. Reinstall the clutch case cover, and reinstall the two bolts securing the oil pan to the transmission.

81. Reinstall the cylinder head.

- Measure the diameter of each cylinder head bolt at point A and point B.
- If either diameter is less than 10.8 mm (0.417 in), replace the cylinder head bolt.
- Apply new engine oil to the threads and under the bolt heads of all cylinder head bolts.

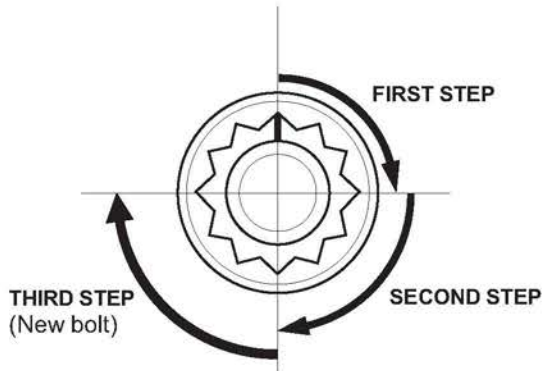


- Torque the cylinder head bolts in sequence to **39 N·m (20 lb-ft)**. When using a preset click-type torque wrench, be sure to tighten slowly and do not overtighten. If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the first step.

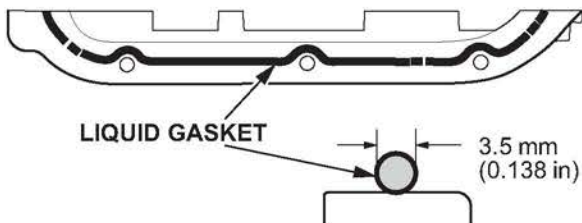


- After torquing, tighten all cylinder head bolts in two steps (90° per step) using the sequence shown above. If you are using a new cylinder head bolt, tighten the bolt an extra 90°.

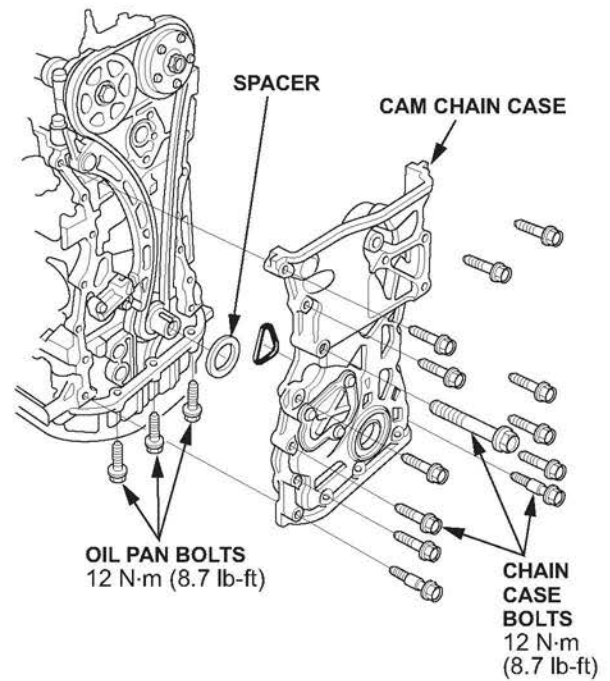
NOTE: Remove the cylinder head bolt if you tightened it beyond the specified angle, and go back to the second bullet to remeasure the bolt. Do not loosen it back to the specified angle.



82. Reinstall the rocker arm assembly and the cam shafts.
83. Reinstall the cam chain.
84. Apply liquid gasket to the oil pan where it meets the cam chain case and to the inside edge of the threaded bolt holes. Install the cam chain case within 5 minutes of applying the liquid gasket.



85. Install the cam chain cover.



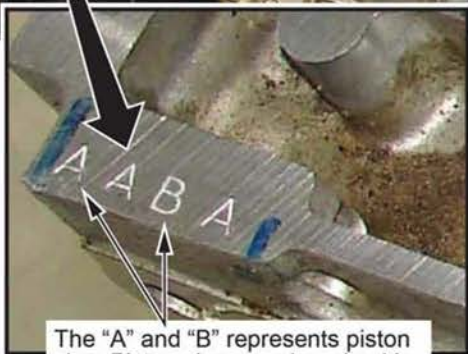
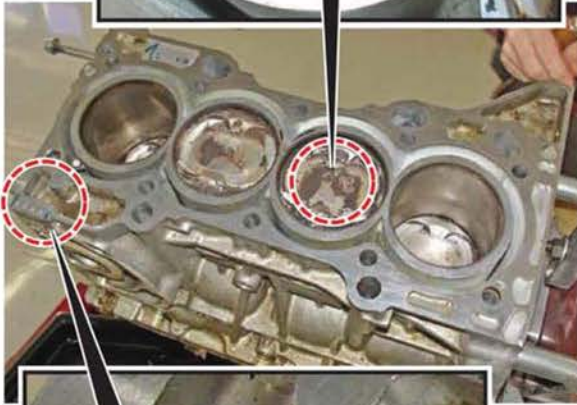
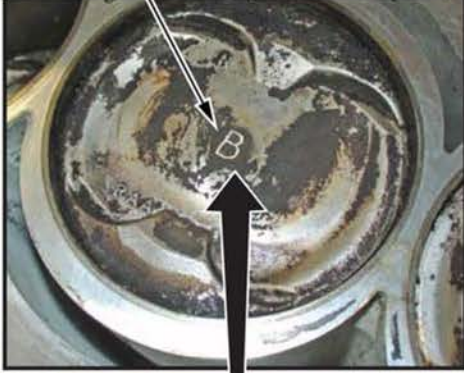
86. Adjust the valves.
87. Reinstall the cylinder head cover.
88. Reinstall the connecting pipe.
89. Reinstall the upper radiator hose, the heater hoses, and the water bypass hose.
90. Reinstall the EVAP canister purge valve bracket.
91. Reconnect the four fuel injectors, the engine mount control solenoid connector, and the ground cables.
92. Reconnect the fuel feed hose and the quick-connect fitting cover.
93. Reconnect the EVAP canister hose.
94. Reinstall the warm up TWC.
95. Install the intake manifold.
96. Reinstall the drive belt.
97. Fill the engine with coolant.
98. Reinstall the strut brace (if equipped), and torque the bolts to **22 N·m (16 lb-ft)**.
99. Fill the engine with oil.
100. Do the terminal reconnection procedure.
101. Crank the engine for about 5 seconds to prime the engine with oil pressure before plugging in the ignition coils.
102. Reconnect the four ignition coils.
103. Do the idle learn procedure.

ORDERING PISTONS

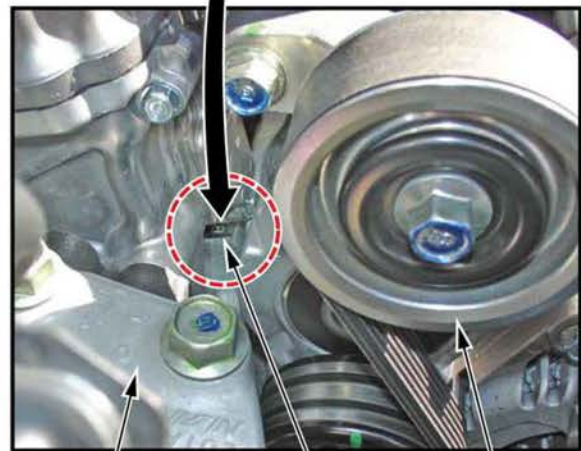
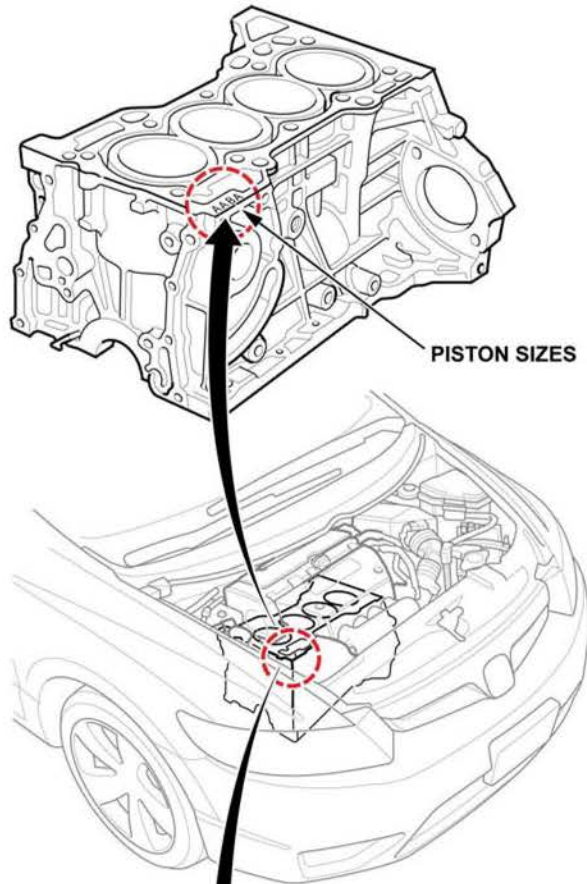
Every engine has some combination of A- and B-sized pistons. You can determine the sizes and their locations in the block by inspecting the markings on the timing chain end of the engine block or by looking at the pistons.

The pistons have identifiers; "A" pistons are unmarked; "B" pistons are marked with a "B". Make sure you order the appropriate number of each piston size before starting work.

"A" pistons are not marked on the top of the piston.
"B" pistons are always marked with a "B" stamp.
The "A" or "B" indicates the piston size.



The "A" and "B" represents piston size. Piston sizes can be mixed in an engine block assembly.



ENGINE MOUNT

PISTON SIZES

IDLER PULLEY