

February 28, 2018

Version 4

2012 Civic Si: Excessive Engine Oil Consumption

Supersedes 12-069, dated February 27, 2013, to revise the information highlighted in **yellow**

AFFECTED VEHICLES

Year	Model	Trim	VIN Range
2012	Civic 2D	Si	2HGFG4A...H700001 thru 2HGFG4A...H703398
2012	Civic 4D	Si	2HGFB6E...H700001 thru 2HGFB6E...H703802

REVISION SUMMARY

A note was added under Repair Procedure.

SYMPTOM

The oil consumption is more than the customer 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 customer to perceive a higher than expected oil consumption. Talk to the customer about the many factors that can influence oil consumption (see the "Service Advisor" section of this service bulletin). If you do not see any other factors contributing to the oil consumption, consider engine-braking as a 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 customer may notice that oil is being consumed at a higher than expected rate.

CORRECTIVE ACTION

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

CUSTOMER INFORMATION:The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Honda automobile dealer.

SERVICE ADVISOR:

Talk to the customer 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 customer 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 customer 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

Part Name	Part Number	Quantity
Cylinder Head Gasket Kit	06110-R44-A00	1
Chain Case Gasket Kit	06114-R40-J01	1
Piston Set A (Go to ORDERING PISTONS on page 28 for more information about which piston set you need.)	13010-RL5-A00	1
Piston Set B (Go to ORDERING PISTONS on page 28 for more information about which piston set you need.)	13020-RL5-A00	1
Piston Ring Set (4 required)	13011-RL5-A01	1
Connecting Rod Bolt (8 may be required)	13204-RBB-004	1
Intake Manifold Gasket (4 required)	17115-R40-A01	1
Exhaust Gasket	18229-TR7-A01	1
Bolt-Washer (11 x 76 head bolt) (10 may be required)	90005-RNA-A01	1
Flange Bolt (14 x 47)	90160-SVB-A00	1
Flange Bolt (12 x 40) (2 required)	95701-12040-07	1
O-Ring	91301-R40-A01	1
Primary Converter Gasket	18115-R40-A01	1
Flange Nut (14mm)	90371-SJD-003	1

REQUIRED MATERIALS

Part Name	Part Number	Quantity
Hondabond HT Silicone	08718-0004 (1 tube repairs 5 vehicles.)	1
Genuine Honda Motor Oil 0W-20	08798-9036	6
Honda Long-Life Antifreeze/Coolant Type 2	OL999-9011 (1 gallon repairs 2 vehicles.)	1

TOOL INFORMATION

Tool Name	Tool Number	Quantity
Camshaft Lock Pin Set	07AAB-RWCA120	1
Gasket Remover/Pan Separator	LIL50190	1
Piston Ring Expander	Snap-On PRS8 or equivalent	1
Piston Ring Compressor	SCP1287 or equivalent	1
1/2 in. Drive Torque Angle Gauge	BLMBLDAG001 or TA360	1

WARRANTY CLAIM INFORMATION

The normal warranty applies.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
111167	Replace all pistons and piston rings and do alignment.	14.2 hrs (includes 0.4 hr for alignment)	03217	09401	A12069A	13010-RL5-A10

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

NOTES

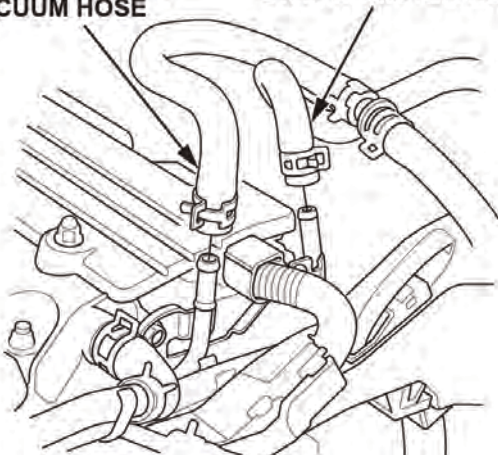
- **Before starting work**, make sure to order the correct number of “A” and “B” pistons. Refer to ORDERING PISTONS on page 28 of this bulletin.
 - Use fender covers to avoid damaging painted surfaces.
 - To avoid damaging the wires and terminals, unplug the wiring connectors carefully while holding 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. Park the vehicle on a lift.
 2. Relieve the fuel pressure.
 3. Do the battery terminal disconnection procedure.
 4. Drain the engine oil and engine coolant

NOTE

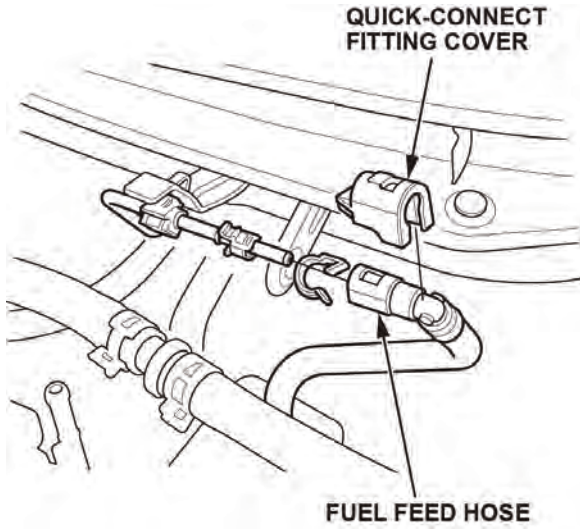
Drain the coolant into a clean container to reuse after the repair.

5. Remove the drive belt.
6. Remove the intake manifold.
7. Remove the warm-up-three-way catalytic converter (TWC).
8. Disconnect the brake booster vacuum and EVAP canister hoses.

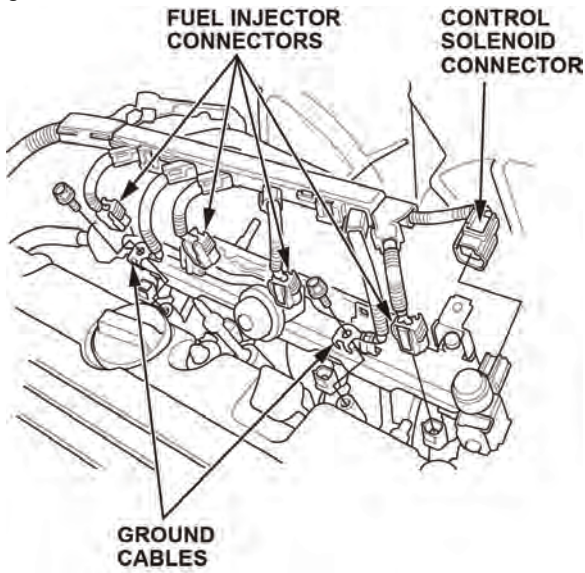
**BRAKE BOOSTER
VACUUM HOSE** **EVAP CANISTER HOSE**



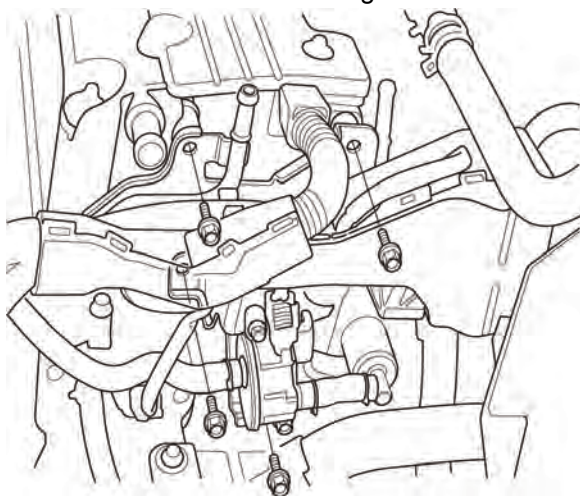
9. Remove the quick-connect fitting cover, then disconnect the fuel feed hose.



10. Disconnect the four fuel injector connectors and the engine mount control solenoid connector, and disconnect the ground cables.



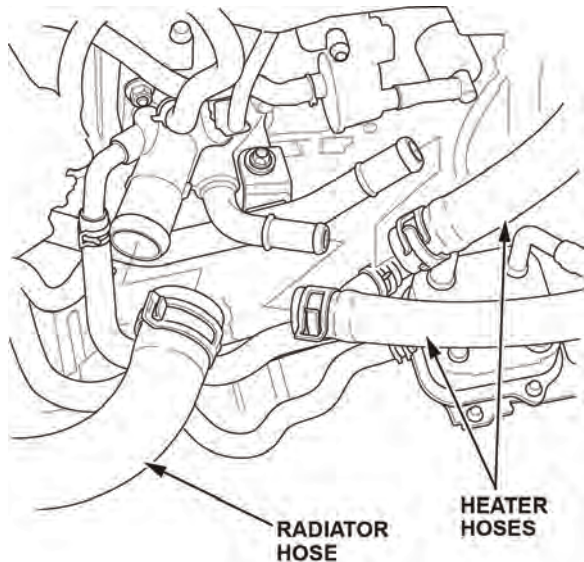
11. Remove the four bolts securing the EVAP canister purge valve bracket.



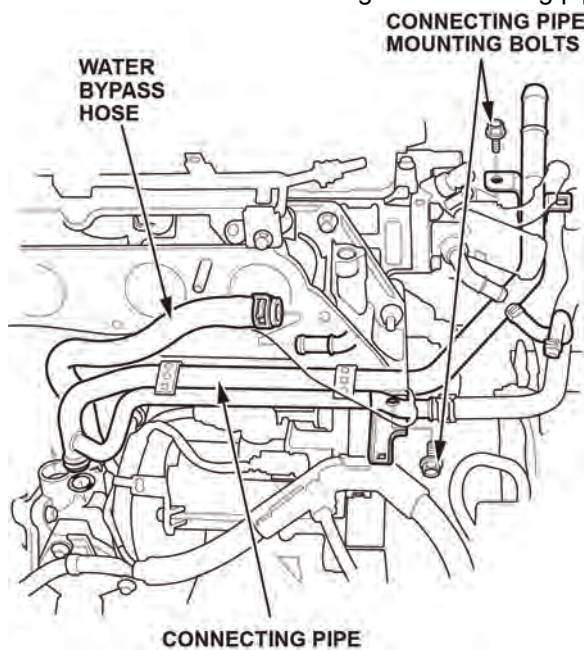
12. Disconnect the upper radiator hose and the heater hoses.

NOTE

The second radiator hose is connected to the thermostat and is not shown.

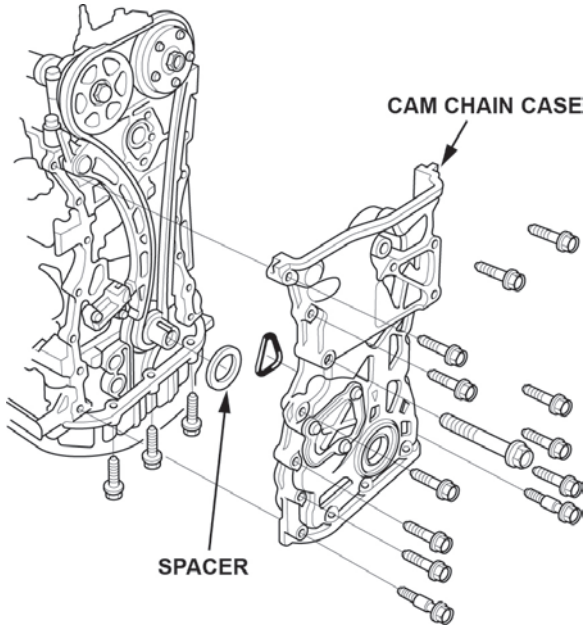


13. Remove the two bolts securing the connecting pipe.



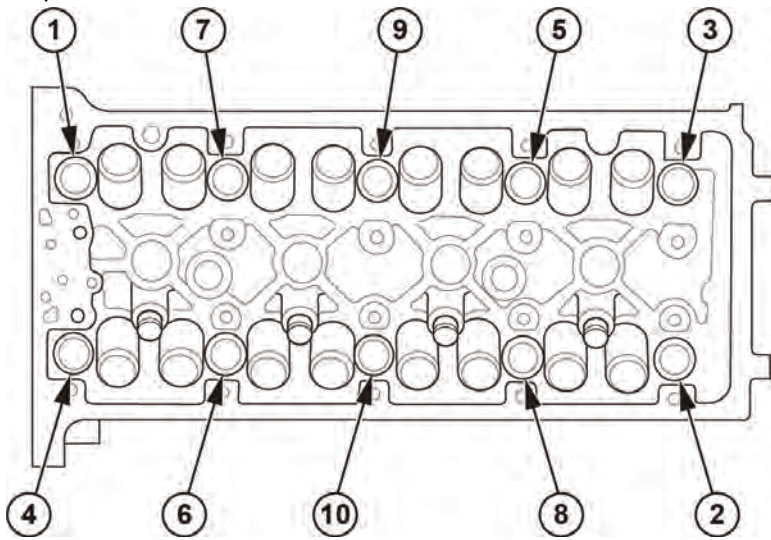
14. Support engine with a floor jack, then remove right side engine mount.

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



16. Remove the rocker arm assembly and both cams.

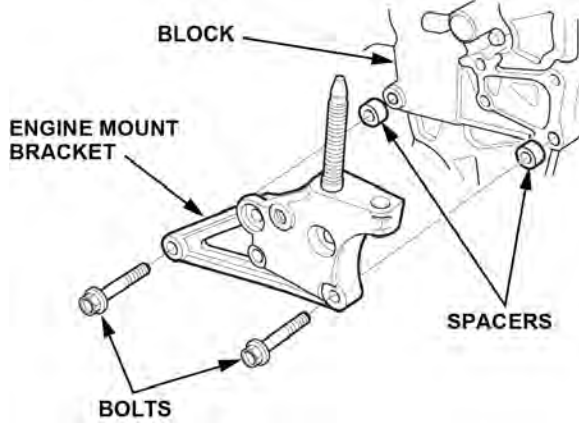
17. Remove the cylinder head bolts. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all the bolts are loosened.



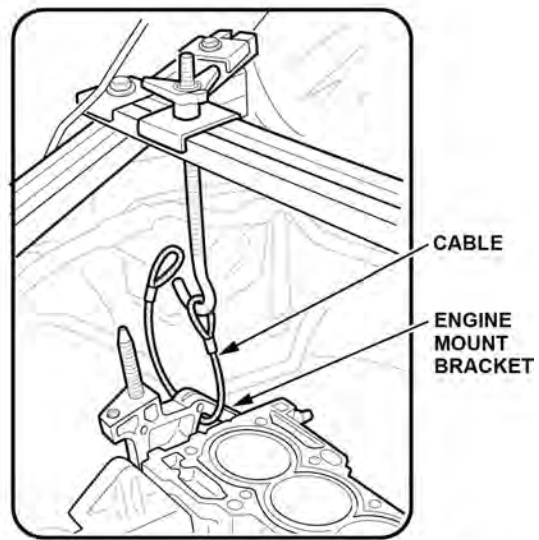
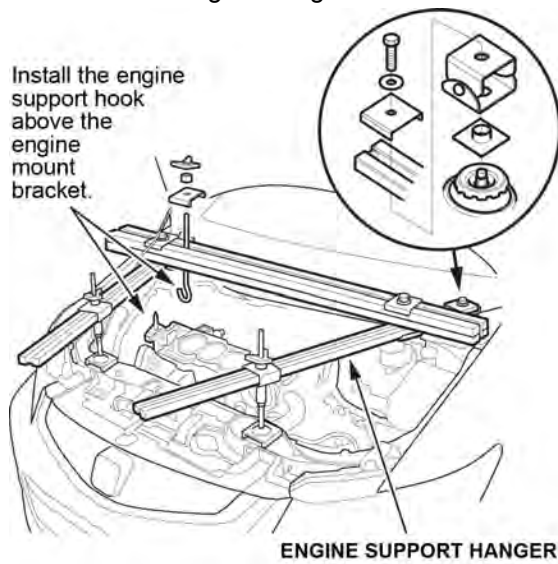
18. Remove the cylinder head.

19. Attach the engine hanger.

- Attach the engine mount bracket to the engine block with two 10 mm spacers and two (10 mm diameter) bolts that are about 40 mm and 55 mm long.



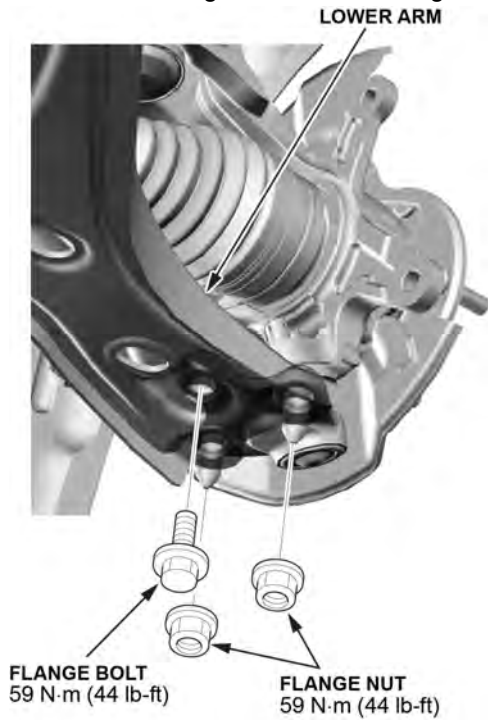
- Assemble the engine hanger.



- Loop the wire cable around the engine mount bracket and attach the looped ends to the hook.
- Raise the engine with a floor jack just enough to relieve the engine weight from the lower engine bracket. Tighten the hook so that when you lower the floor jack, the engine is suspended in place.

20. Raise the vehicle on the lift so that you can move the axle out of the way.

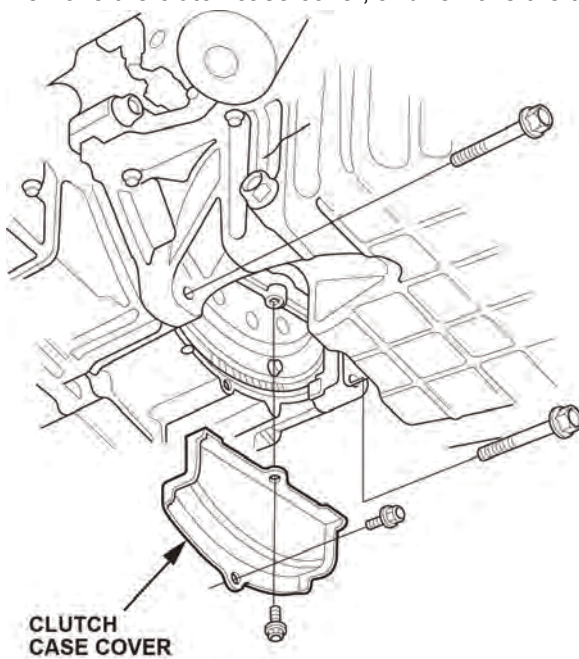
- Remove the flange bolt and the flange nuts.



- Disconnect the lower ball joint from the lower control arm.
- Drive the inboard joint off of the intermediate shaft using a drift punch and a hammer, then move the shaft out of your way.

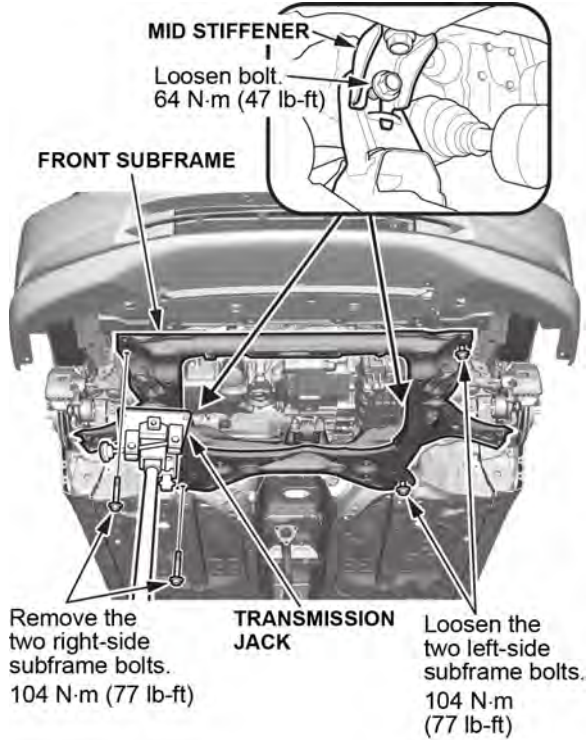
21. Remove the oil pan.

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

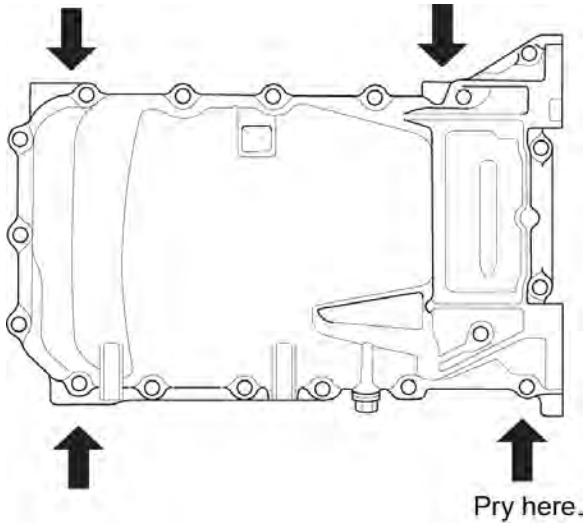


- Remove the lower torque rod mounting bolts.

- Loosen the mid-stiffener mounting bolt on both sides.



- Place a transmission jack under the right side of the subframe and remove the subframe bolts on the right side.
- Loosen the subframe mounting bolts on the left side so that you can lower the subframe about 20 mm.
- Remove the lower torque rod bracket.
- Remove the clutch case cover and the transmission mounting bolts.
- Remove the bolts securing the oil pan.

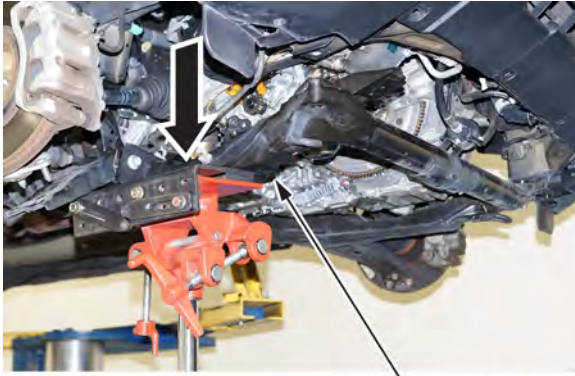


- Raise the engine as high as possible using the engine hanger hook.

NOTE

The engine wobbles as it is being lifted, so make sure nothing is stressed or damaged such as the A/C lines or pump.

- Gently lower the right side of the subframe using the transmission jack until you have enough room to remove the oil pan.

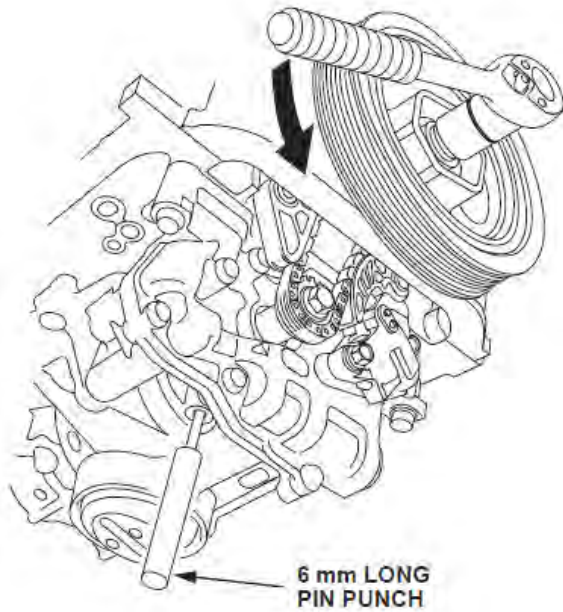


Lower the right side of the subframe.

- Using the pan separator, separate the oil pan from the engine block in the indicated area, and remove the oil pan.

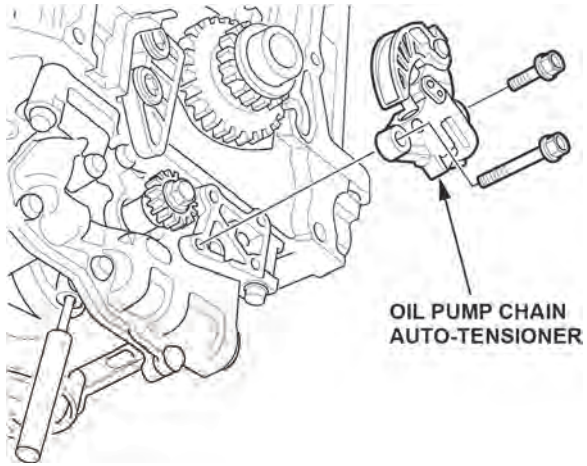


22. To hold the balancer shaft, insert a 6 mm (1/4 in.) diameter long pin punch into the maintenance hole in the balancer shaft holder and through the rear balancer shaft.

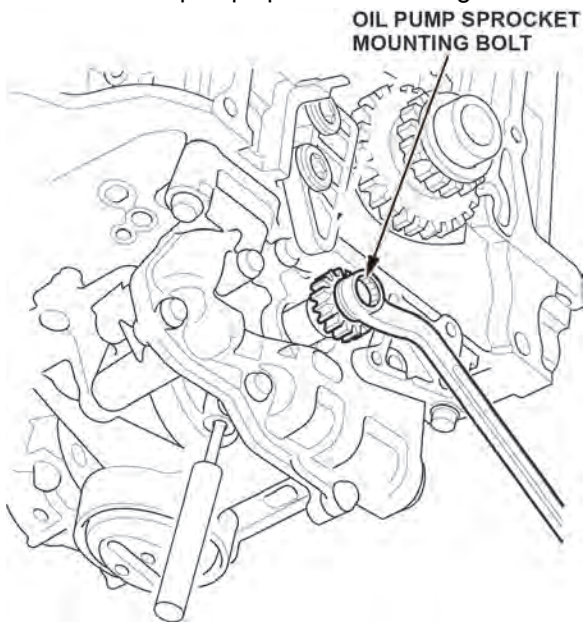


6 mm LONG PIN PUNCH

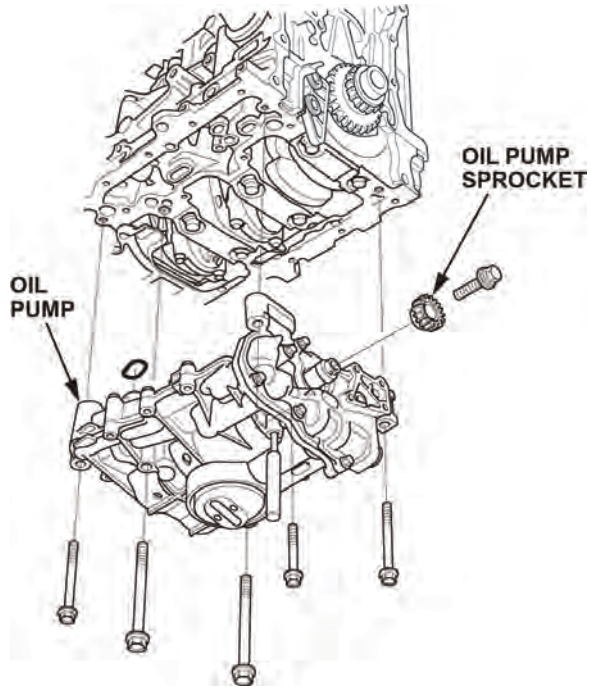
23. Remove the oil pump chain auto-tensioner.



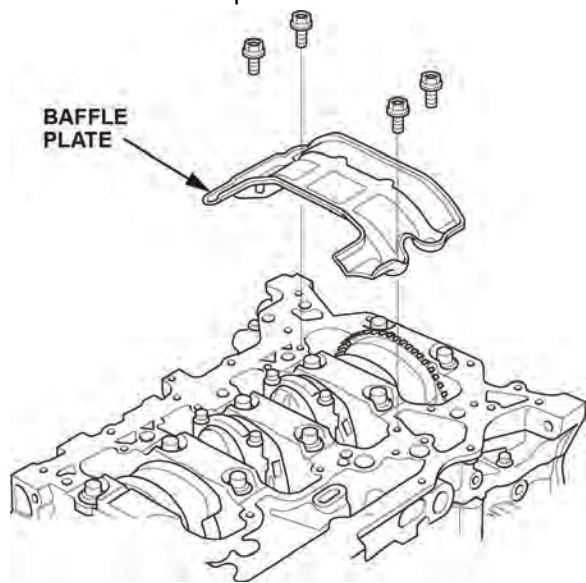
24. Loosen the oil pump sprocket mounting bolt.



25. Remove the oil pump sprocket and the oil pump.



26. Remove the baffle plate.



27. 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.

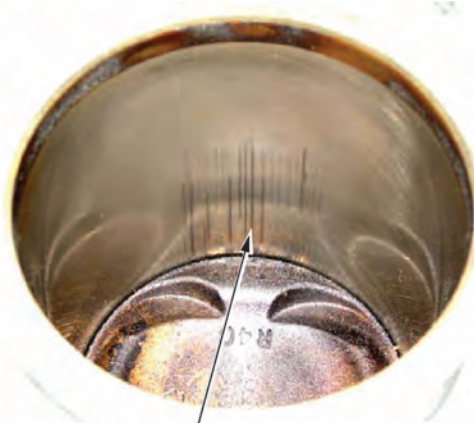
28. Rotate the crankshaft until piston No. 1 is just before top dead center (TDC).

29. Check the cylinder walls by rubbing your fingernail or a lead pencil with light pressure perpendicular to any certical 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 31.
- If your finger nail or pencil catches on the scratches, go to step 30 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.

30. 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 approval 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 31.



GOOD

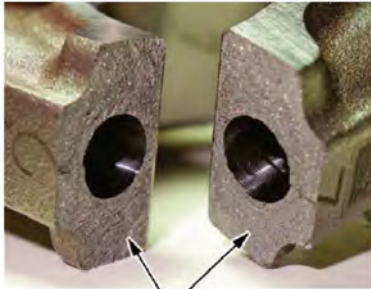


NOT GOOD

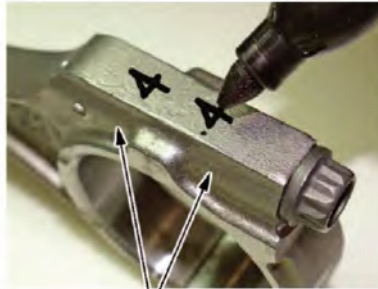
SCRAPES, DEEP SCRATCHES, OR DAMAGE

31. Remove the rod caps and the bearings.

- Before removing the rod caps, use a grease pencil or suitable marking pen to mark each cap and its corresponding connecting rod with the cylinder number it came from.
- Do not confuse the existing marking on the side of the connecting rod and rod cap with a cylinder number. They are just manufacturing marks referring to the size of the big end of the rod.
- Installing a rod cap incorrectly will result in engine knock and/or engine failure. Remove and mark one rod assembly at a time to make sure it is assembled correctly.
- When torquing the rod cap bolts, refer to the service information for details.
- Click [HERE](#) to go to the *Tech2Tech*[®] video "Tips When Working with Fracture Rods".



The uneven mating surfaces are uniquely matched and not interchangeable.



Mark the connecting rod and rod cap with the cylinder number.



These are manufacturing marks, and do not indicate the cylinder number.

32. 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.

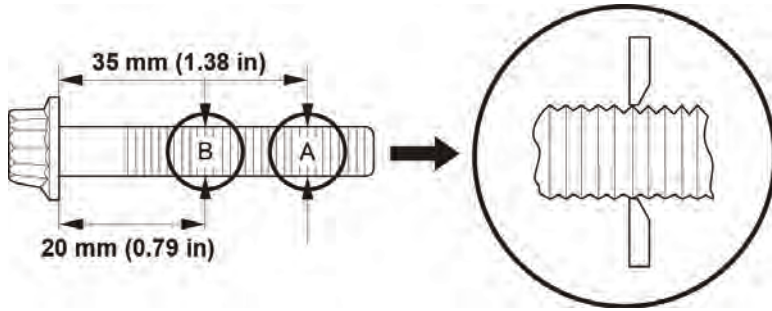
33. Visually inspect all the connecting rod bearings for signs of damage.

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.



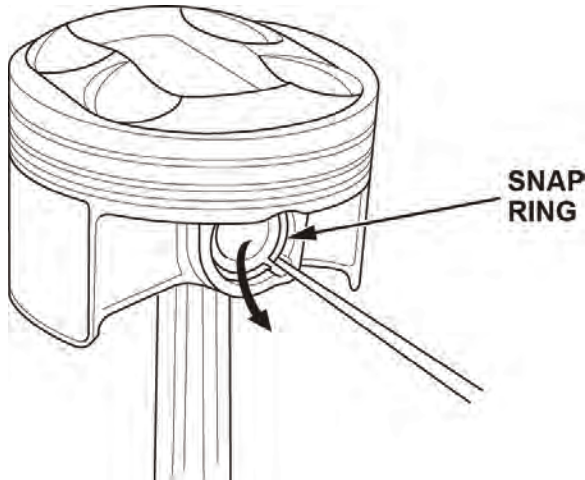
34. Measure the diameter of each connecting rod bolt at points A and B.



34.1. 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.

35. Put on eye protection, then remove the snap rings (A) 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.



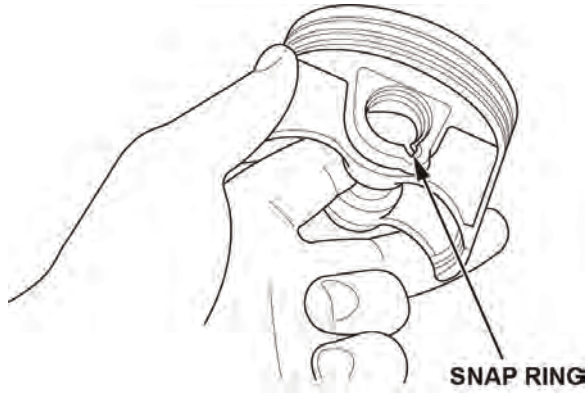
36. Put on gloves, heat the piston and the ends connecting rod to about 158°F (70°C), then remove the piston pin.

NOTE

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

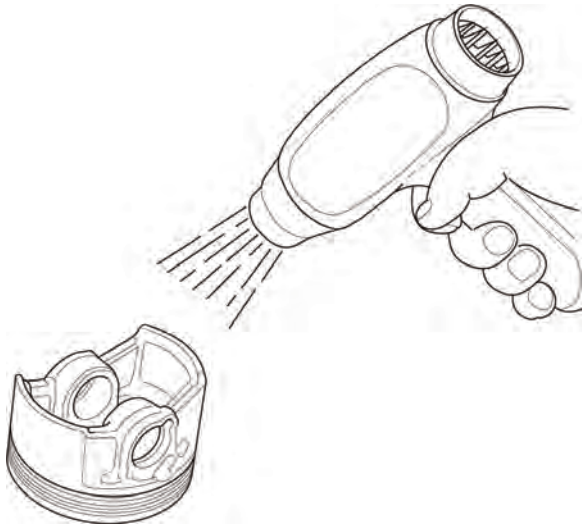


37. Install a new piston pin snap ring on one side of a new piston.



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

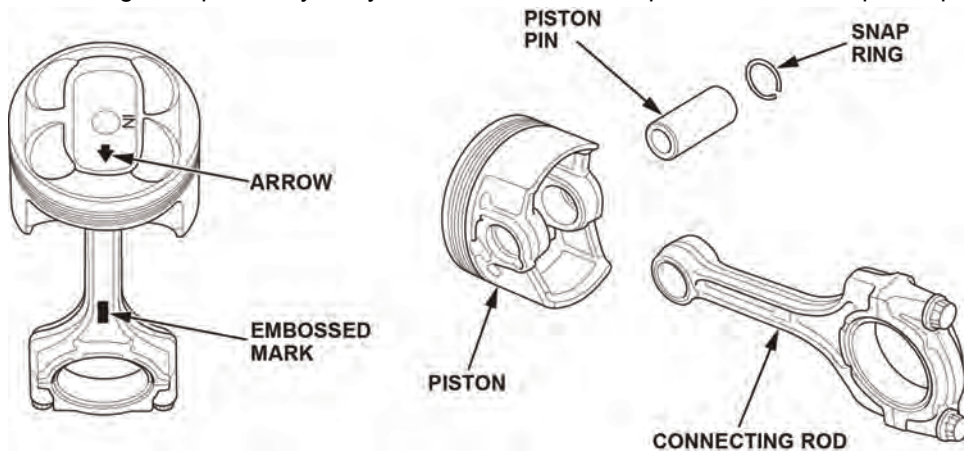
39. Heat the piston to about 158°F (70°C).



40. 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.



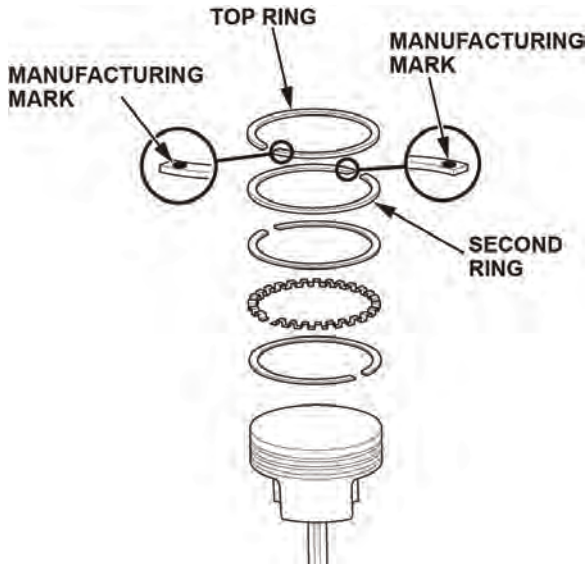
41. Install the remaining snap ring.

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

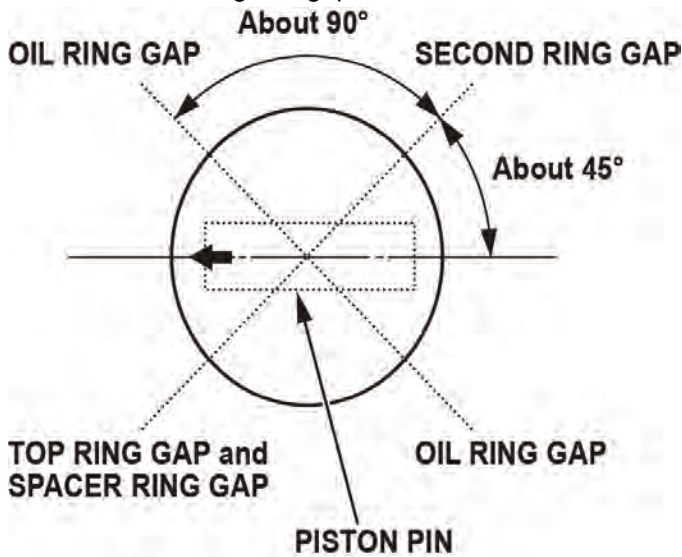
43. Repeat steps 35-42 for the remaining pistons.
44. Using a piston ring expander, install the top ring and the second ring with the manufacturing marks facing up. The top ring has a "1" followed by a letter or letters. The second ring has a "2" followed by a letter or letters.

NOTE

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

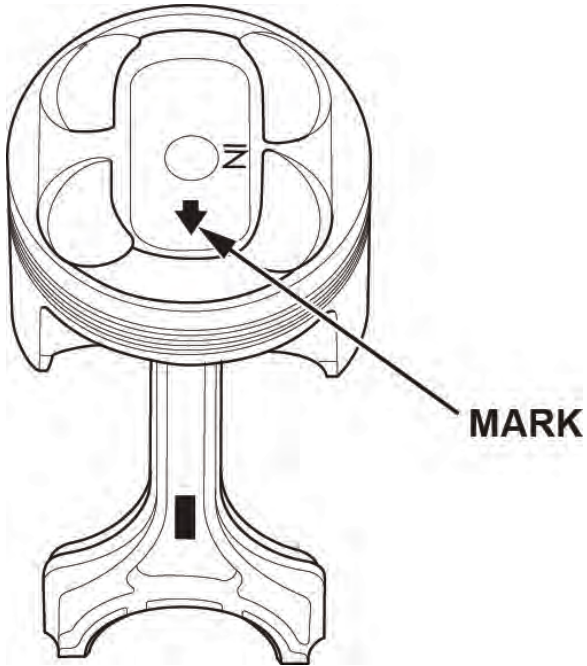


45. Rotate the rings in their grooves to make sure they do not bind.
 - Position the ring end gaps as shown.

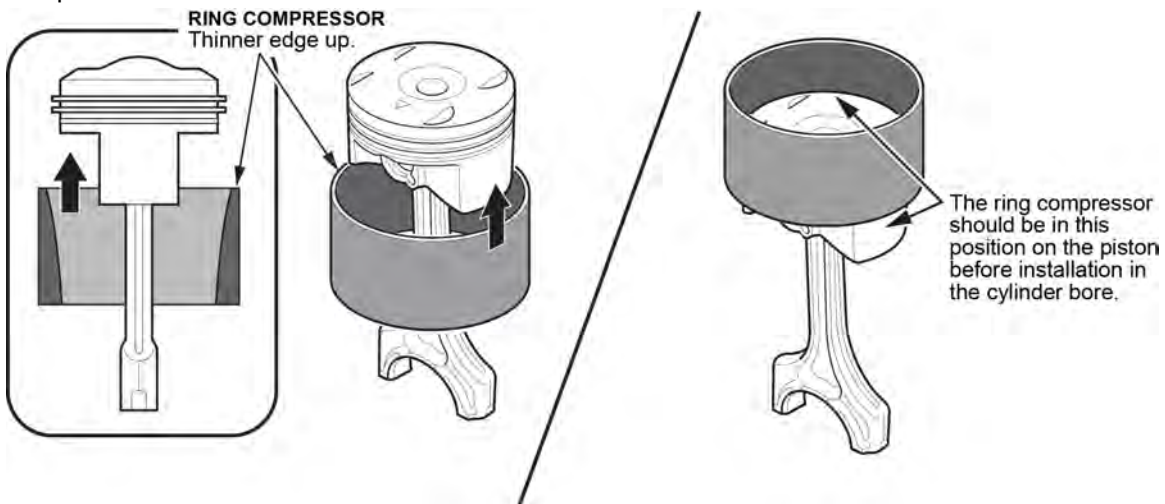


46. Rotate the crankshaft so that cylinder's 1 and 4 are at bottom dead center (BDC).
47. Remove the connecting rod cap to piston 1, and check that the bearing is securely in place.
48. Apply new engine oil to the piston, the inside of the ring compressor, the cylinder bore, and the rod bearings.

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



50. Position the piston in the cylinder noting the rod/cap marks that you made in step 31, and set the piston in the ring compressor.



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

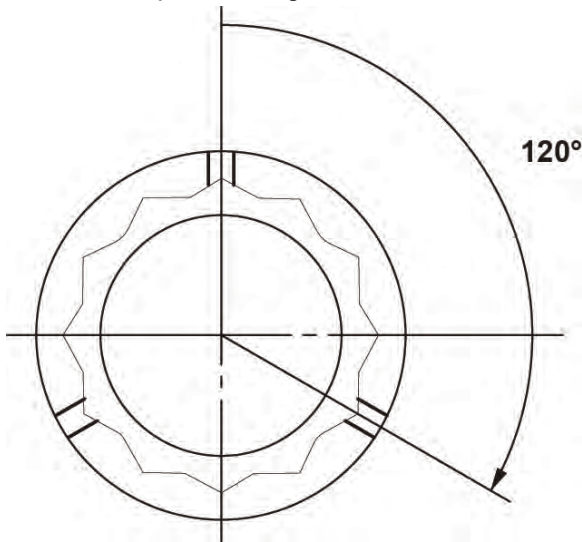
52. Stop after the ring compressor pops free, and check the connecting rod-to-rod journal alignment before pushing the piston into place.

53. 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)**.

54. Tighten the connecting rod bolts an additional 120°.

NOTE

If you tightened a rod bolt beyond the specified angle, remove it and repeat steps 47 and 54. Do not loosen the bolt back to the specified angle.



55. Repeat steps 47 thru 54 for piston number 4.

56. Rotate the crankshaft so that cylinder's 2 and 3 are at bottom dead center (BDC).

57. Repeat steps 47 thru 54 for piston number 2 and 3.

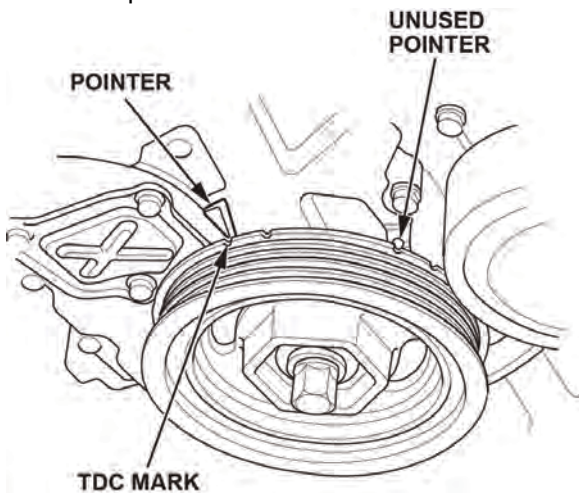
58. Rotate the crankshaft after all connecting rods have been installed to ensure that nothing is binding, and bring each piston to top dead center (TDC).

59. Install the baffle plate, and torque the bolts to **12 N•m (8.7 lb-ft)**.

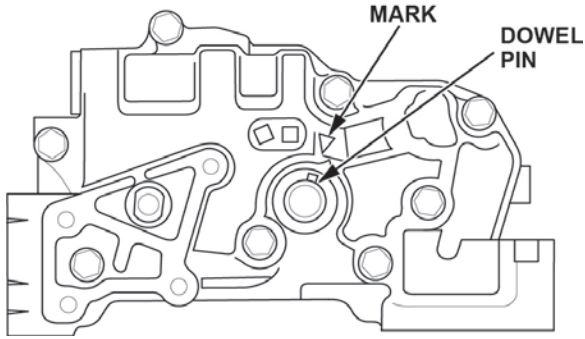
60. Place the No. 1 piston at top dead center (TDC). Make sure the TDC mark lines up with the pointer.

NOTE

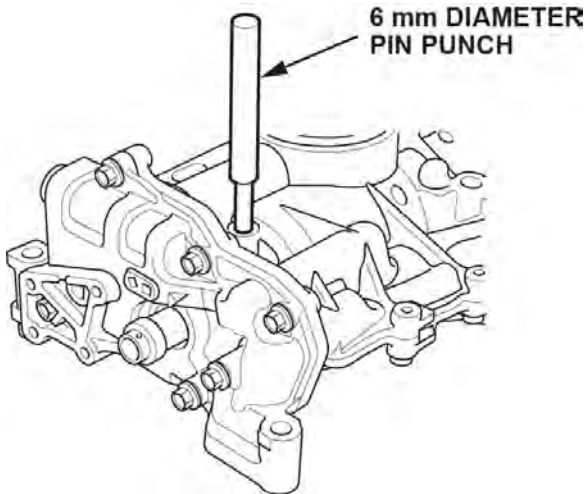
The other pointer is not used.



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



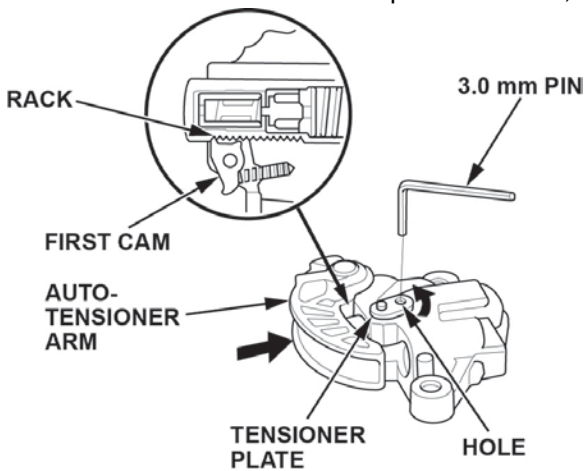
62. To hold the rear balancer shaft, insert the 6 mm (1/4 in.) diameter long pin punch into the maintenance hole in the balancer shaft holder and through the rear balancer shaft.



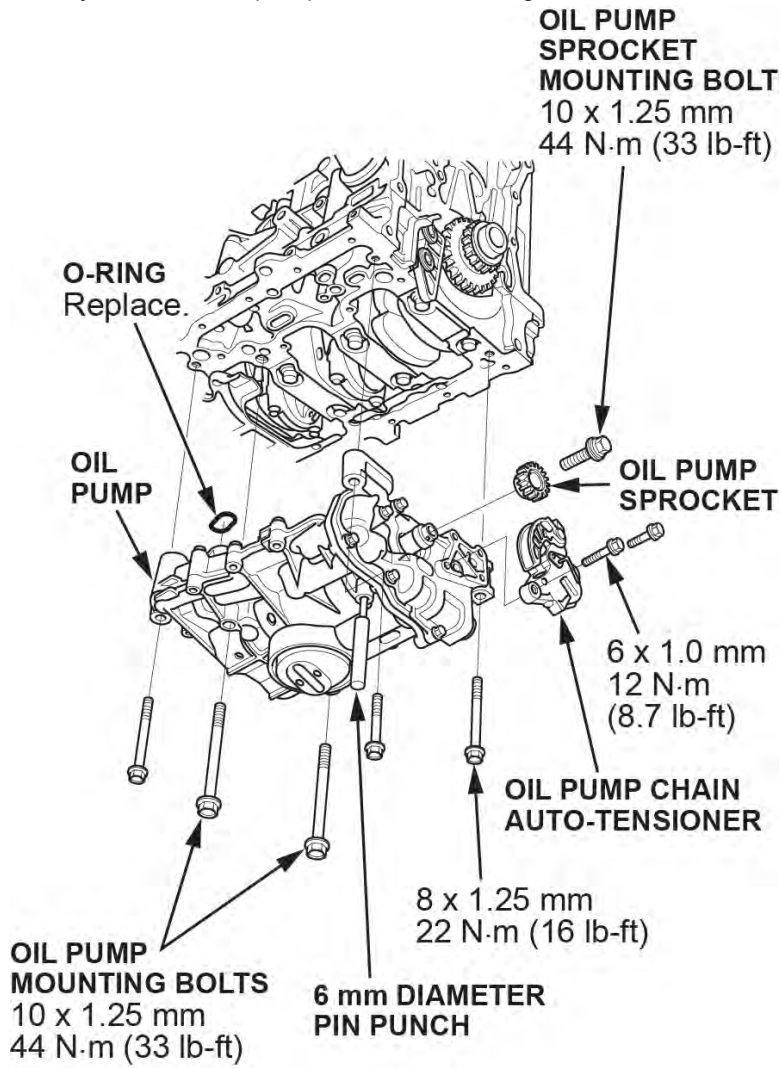
63. Turn the plate counterclockwise to release the lock, then push the oil pump chain auto-tensioner arm, and set the first cam to the first edge of the rack. Insert a 3.0 mm (7/64 in.) diameter pin into the hole.

NOTE

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



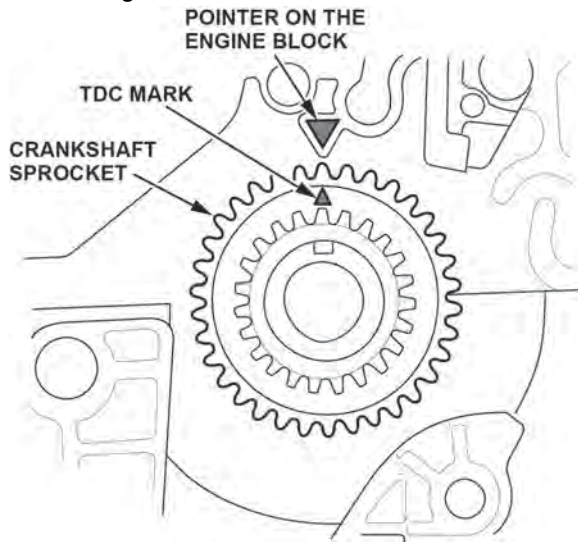
64. Apply new engine oil to the threads of the oil pump mounting bolts and the oil pump sprocket mounting bolt, then loosely install the oil pump with a new O-ring.



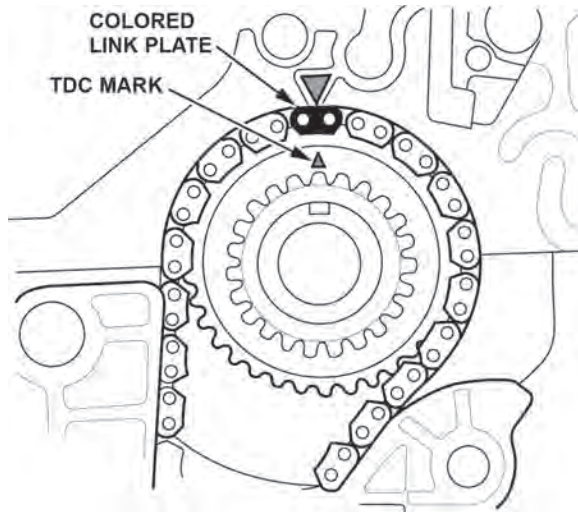
65. Torque the oil pump mounting bolts to **44 N·m (33 lb-ft)**.

66. Install the engine oil pump chain.

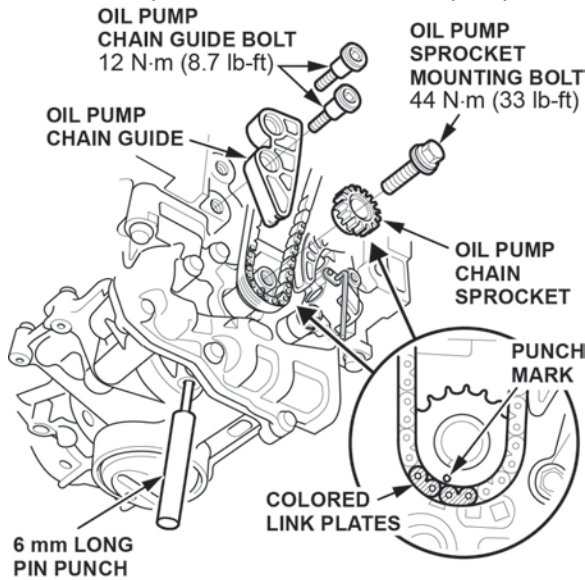
66.1. Set the crankshaft to top dead center (TDC). Align the TDC mark on the crankshaft sprocket with the pointer on the engine block.



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



66.3. 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.

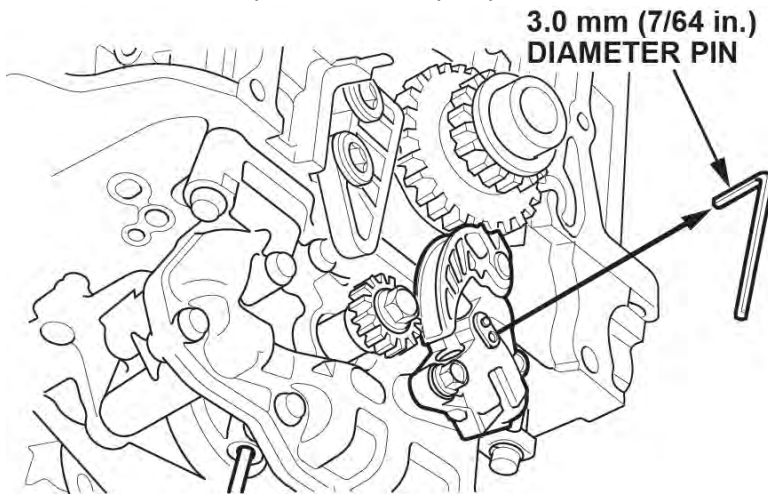


66.4. Apply new engine oil to the threads of the oil pump sprocket mounting bolt, then install it and torque it to **44 N·m (33 lb-ft)**.

67. Install the oil pump chain auto-tensioner, and torque the bolts to **12 N·m (8.7 lb-ft)**.

68. Remove the 6 mm (1/4 in.) diameter long pin punch.

69. Remove the 3.0 mm (7/64 in.) diameter pin from the oil pump chain auto-tensioner.



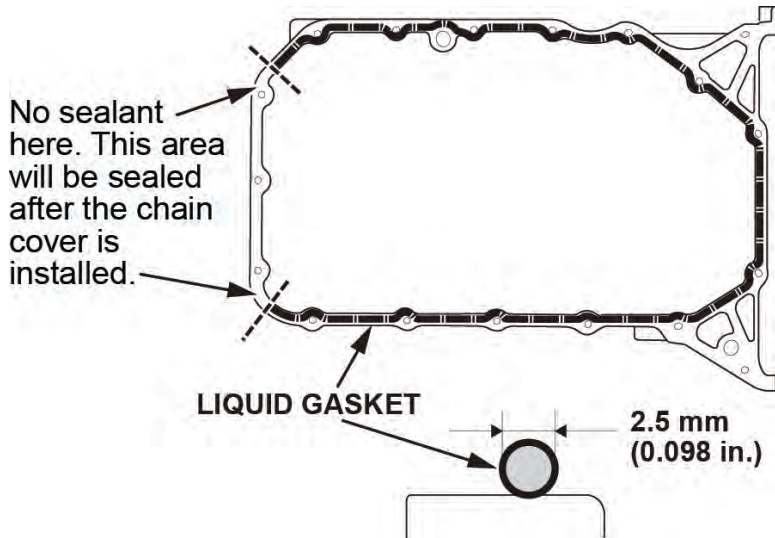
70. Remove all of the old liquid gasket from the oil pan mating surfaces, the bolts, and the bolt holes.

71. Clean and dry the oil pan mating surfaces.

72. 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.

NOTES

- 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.

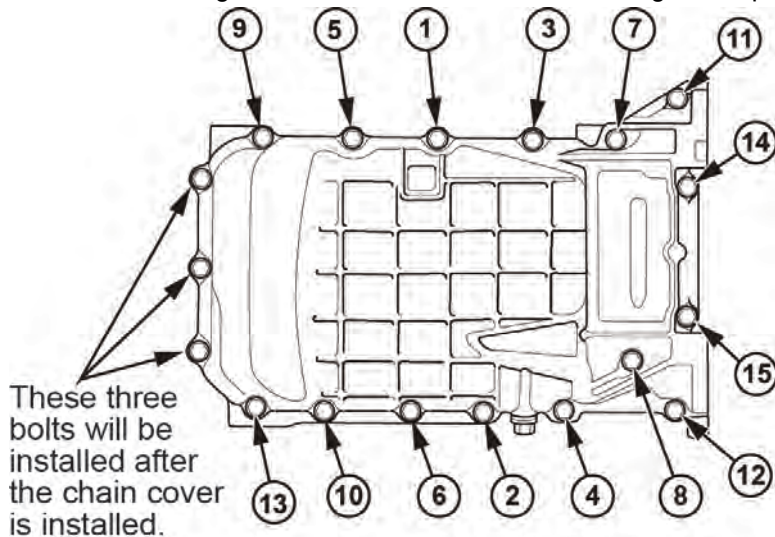


73. Install the oil pan to the engine block.

73.1. Tighten the bolts in three steps. In the final step, torque all bolts, in sequence, to **12 N•m (9 lb-ft)**. Wipe off the excess liquid gasket on the each side of crankshaft pulley and the flywheel/drive plate.

NOTES

- Install the three bolts on the end after installing the cam chain cover.
- Wait at least 30 minutes before filling the engine with oil.
- Do not run the engine for at least 3 hours after installing the oil pan.



74. Install a new oil filter.

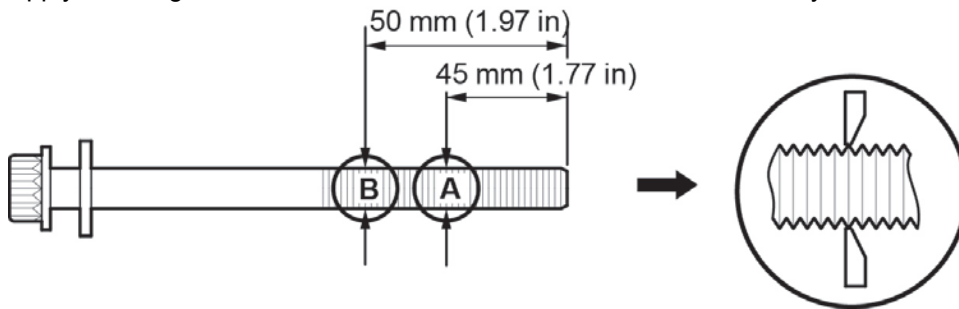
75. Reinstall the clutch case cover, and reinstall the two bolts securing the oil pan to the transmission.

76. Reinstall the cylinder head.

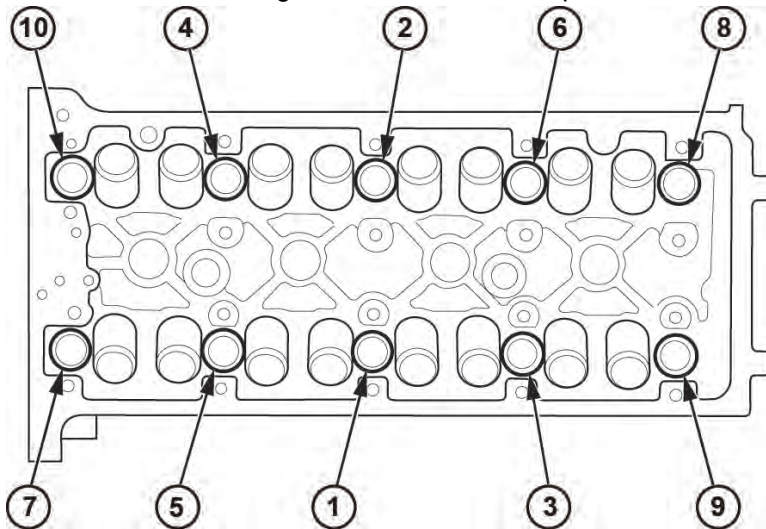
76.1. Measure the diameter of each cylinder head bolt at point A and point B.

76.2. If either diameter is less than 10.8 mm (0.417 in), replace the cylinder head bolt.

76.3. Apply new engine oil to the threads and under the bolt heads of all cylinder head bolts.



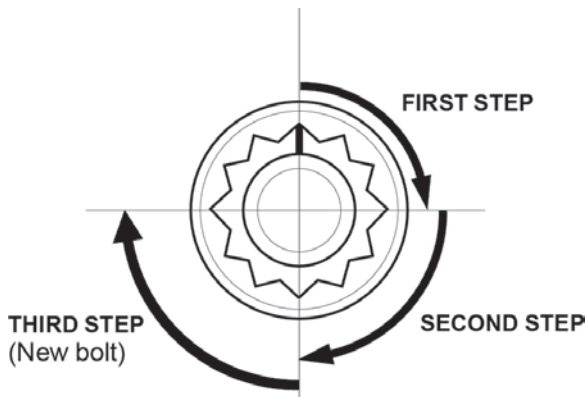
76.4. Torque the cylinder head bolts in sequence to **39 N•m (20 lb-ft)**. When using a preset click-type torque wrench, be sure to tighten slowly and do not overtighten. If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the first step.



76.5. 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

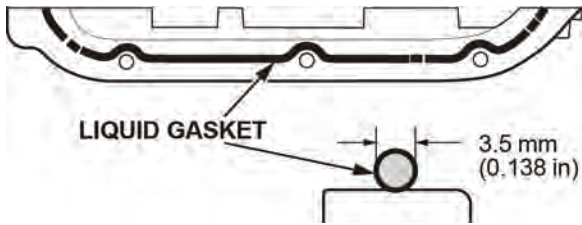
Remove the cylinder head bolt if you tightened it beyond the specified angle, and go back to the second bullet to remeasure the bolt. Do not loosen it back to the specified angle.



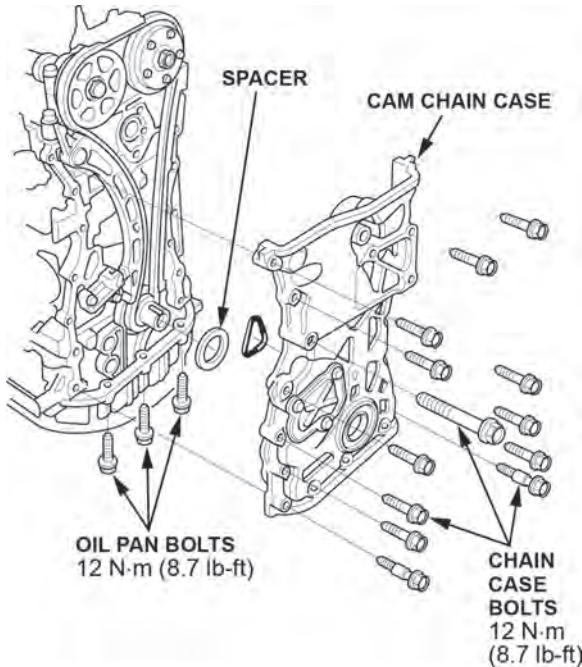
77. Reinstall the rocker arm assembly and cam shafts.

78. Reinstall the cam chain.

79. 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.



80. Install the cam chain cover.



81. Reinstall the engine mount and torque the bolts to **44 N•m (33 lb-ft)**.

82. Remove the engine hanger.

83. Adjust the valves.

84. Reinstall the cylinder head cover.

85. Reinstall the connecting pipe.

86. Install the intake manifold.

87. Reinstall the upper radiator hose and the heater hoses.

88. Reinstall the EVAP canister purge valve bracket.

89. Reconnect the engine mount control solenoid connector, and the ground cables.

90. Reconnect the fuel feed hose, and reinstall the quick-connect fitting cover.

91. Reconnect the EVAP canister hose and the brake booster vacuum hose.

92. Reinstall the warm-up TWC.

93. Reinstall the drive belt.

94. Fill the engine with oil and coolant.

95. Reinstall the strut brace (if equipped), and torque the bolts to **22 N•m (16 lb-ft)**.

96. Do the battery terminal reconnection procedure.

- 97. Crank the engine for about 5 seconds to prime the engine with oil pressure before plugging in the ignition coils.
- 98. Reconnect the four fuel injector connectors.
- 99. Do the idle learn procedure.

ORDERING PISTONS

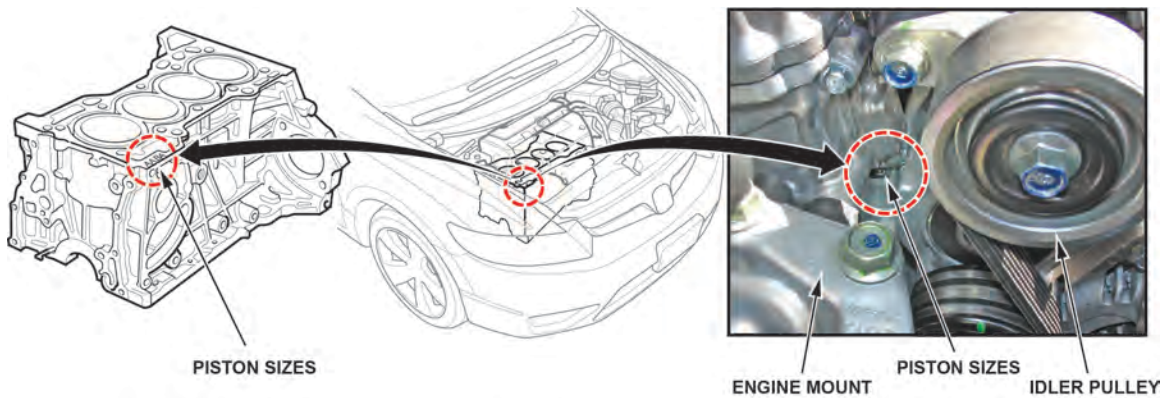
Every engine has some combination of A- and B-sized pistons. You can determine the sizes and their locations in the block by inspecting the markings on the timing chain end of the engine block or by looking at the pistons.

If you look at the piston, the pistons have identifiers; "A" pistons are unmarked; "B" pistons are marked with a "B". Pistons can be ordered prior to engine disassembly.

"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.



END