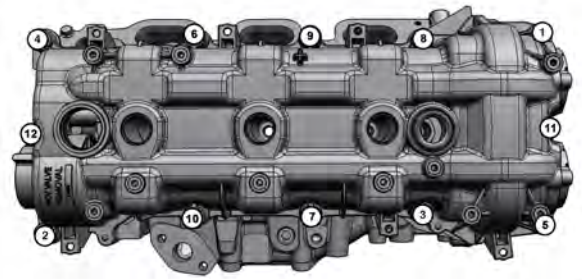


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## 2009 Jeep COMPASS PATRIOT Service Manual

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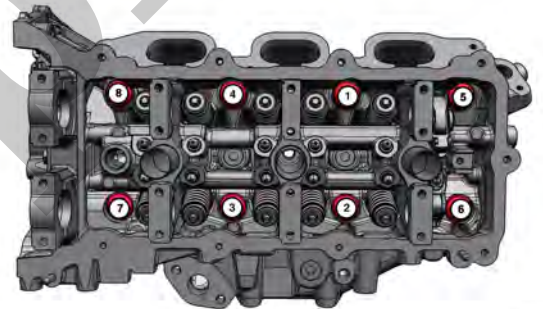
09-11186-001

### Torque Procedure

For engine builds using a new block follow steps 1-9. For engine re-builds (reuse block) follow step 6-9.

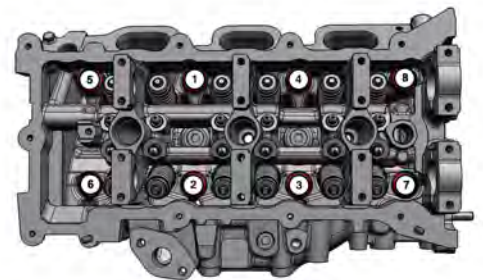
1. 30 N·m (22 ft. lbs.)
2. 45 N·m (33 ft. lbs.)
3. Re-tighten all to 45 N·m (33 ft. lbs.)
4. All + 125° Turn. Do not use a torque wrench for this step.
5. Loosen all fasteners in reverse of sequence shown
6. All to 30 N·m (22 ft. lbs.)
7. All to 45 N·m (33 ft. lbs.)
8. Re-tighten all to 45 N·m (33 ft. lbs.)
9. All + 130° Turn. Do not use a torque wrench for this step.

Tightening Sequence - Left



09-11186-002

Tightening Sequence - Right



09-11186-003

1	Variable Valve Timing Solenoids	<b>10 N·m (7 Ft. Lbs.)</b>	—
2	Camshaft Chain LH Guide (Secondary) Bolt	<b>12 N·m (9 Ft. Lbs.)</b>	—
3	Camshaft Chain RH Tensioner (Secondary) Bolt	<b>12 N·m (9 Ft. Lbs.)</b>	—
4	Oil Control Valve/Cam Phaser Bolt - Intake	<b>30 N·m (22 Ft. Lbs.) + 45° Turn</b>	—
5	Oil Control Valve/Cam Phaser Bolt - Exhaust	<b>160 N·m (118 Ft. Lbs.)</b>	—
6	Camshaft Chain RH Guide (Secondary) Bolt	<b>12 N·m (9 Ft. Lbs.)</b>	—
7	Camshaft Chain Idler Sprocket Bolt	<b>26 N·m (19 Ft. Lbs.)</b>	—
8	Camshaft Chain Tensioner (Primary) Bolt	<b>12 N·m (9 Ft. Lbs.)</b>	—
9	Camshaft Chain LH Tensioner (Secondary) Bolt	<b>12 N·m (9 Ft. Lbs.)</b>	—

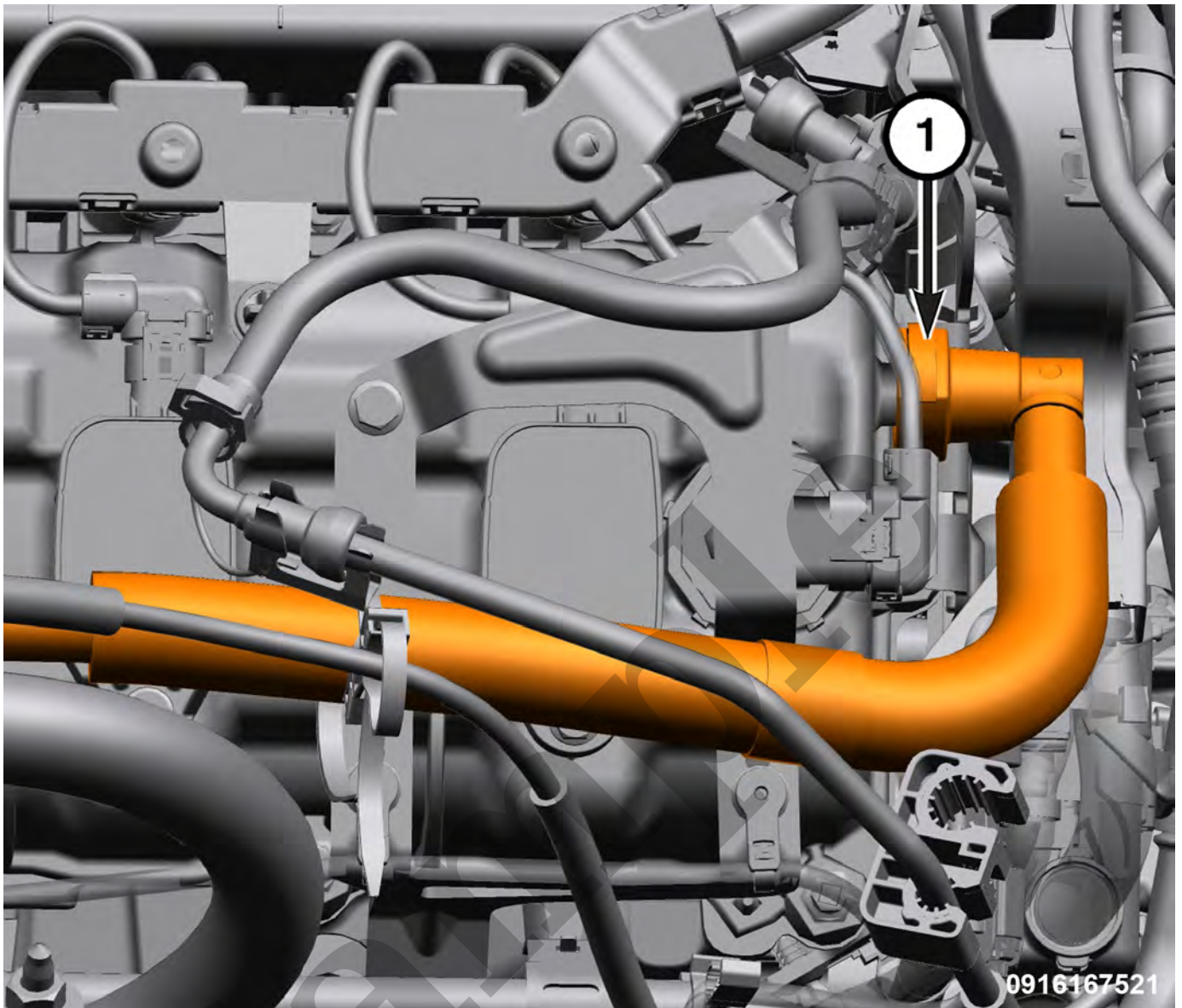
#### Refer To List:

##### List 1

- [09 - Engine, 2.0L / Valve Timing / PHASER, Camshaft / Removal and Installation](#)
- [09 - Engine, 3.6L / Valve Timing / PHASER, Camshaft / Removal and Installation](#)
- [09 - Engine, 5.7L / Valve Timing / PHASER, Camshaft / Removal and Installation](#)

##### List 2

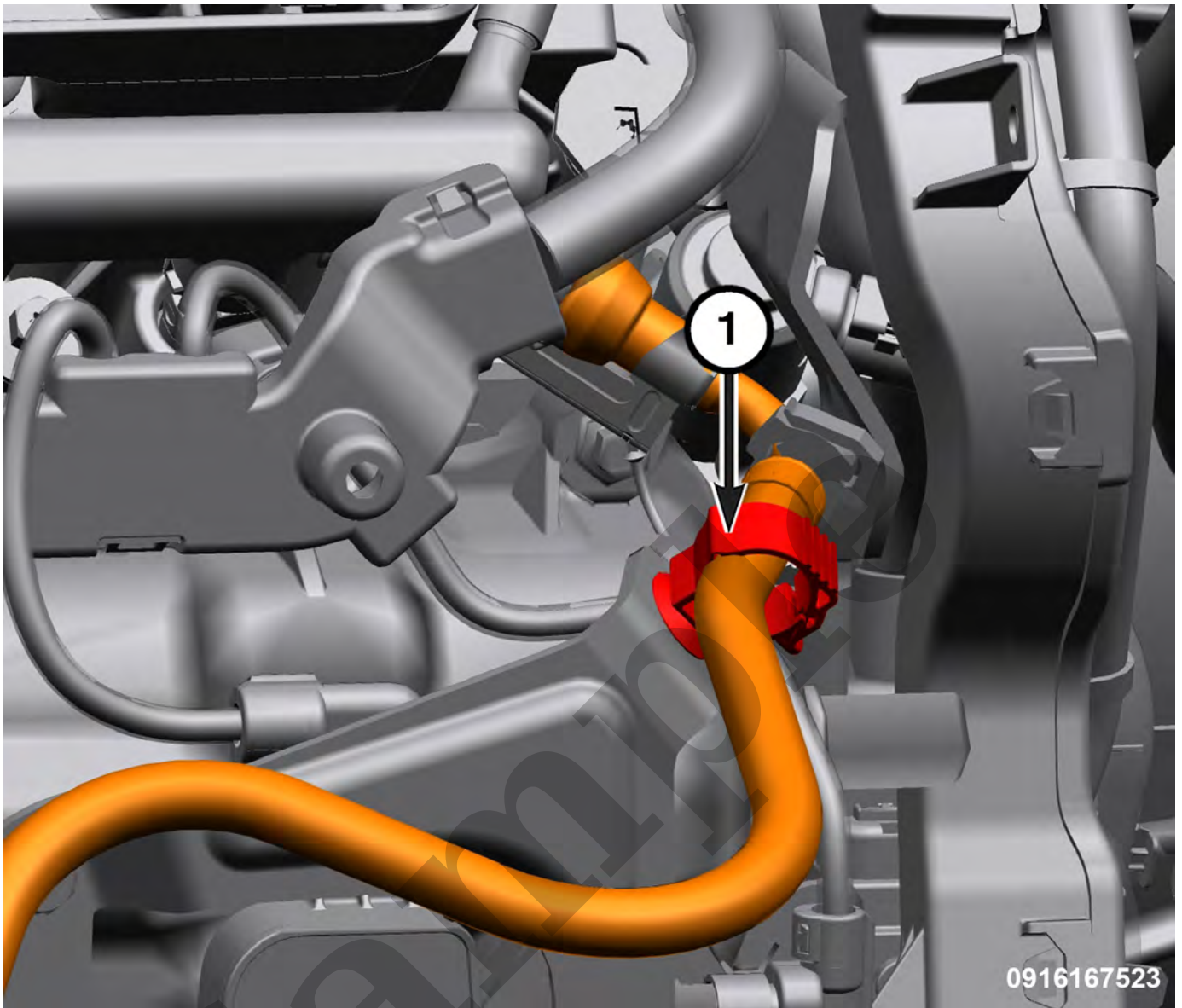
- [09 - Engine, 2.0L / Cylinder Head / ROCKER ARM, Valve / Removal and Installation](#)
- [09 - Engine, 3.6L / Cylinder Head / ROCKER ARM, Valve / Removal and Installation](#)
- [09 - Engine, 5.7L / Cylinder Head / ROCKER ARM, Valve / Removal and Installation](#)



1 - Makeup Air Hose

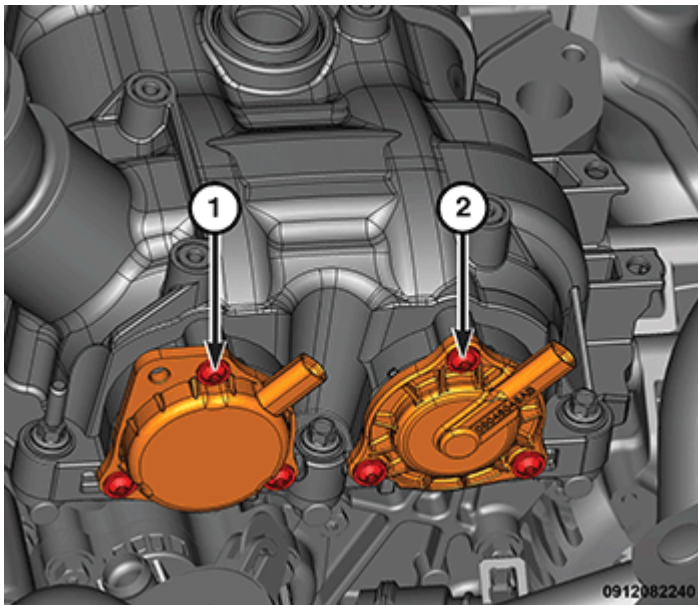
6. Disconnect the makeup air hose from the rear of the left cylinder head cover.





1 - Fuel Supply Line

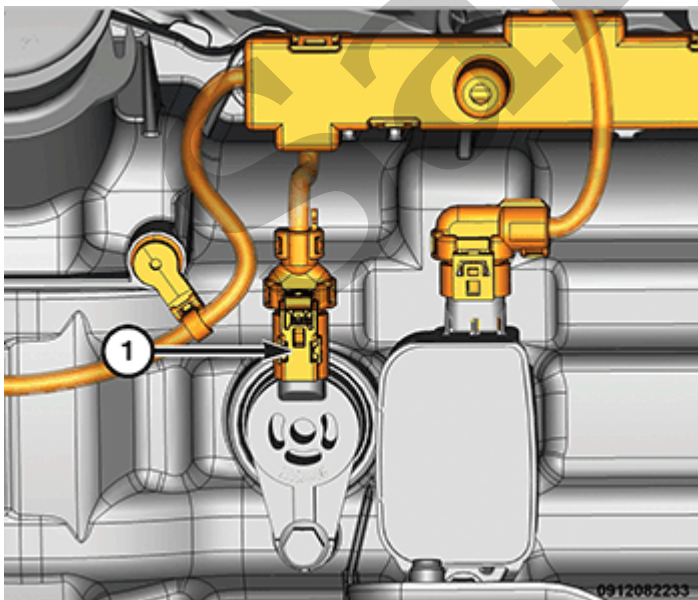
10. Disconnect the fuel supply line at the rear of the left cylinder head cover.



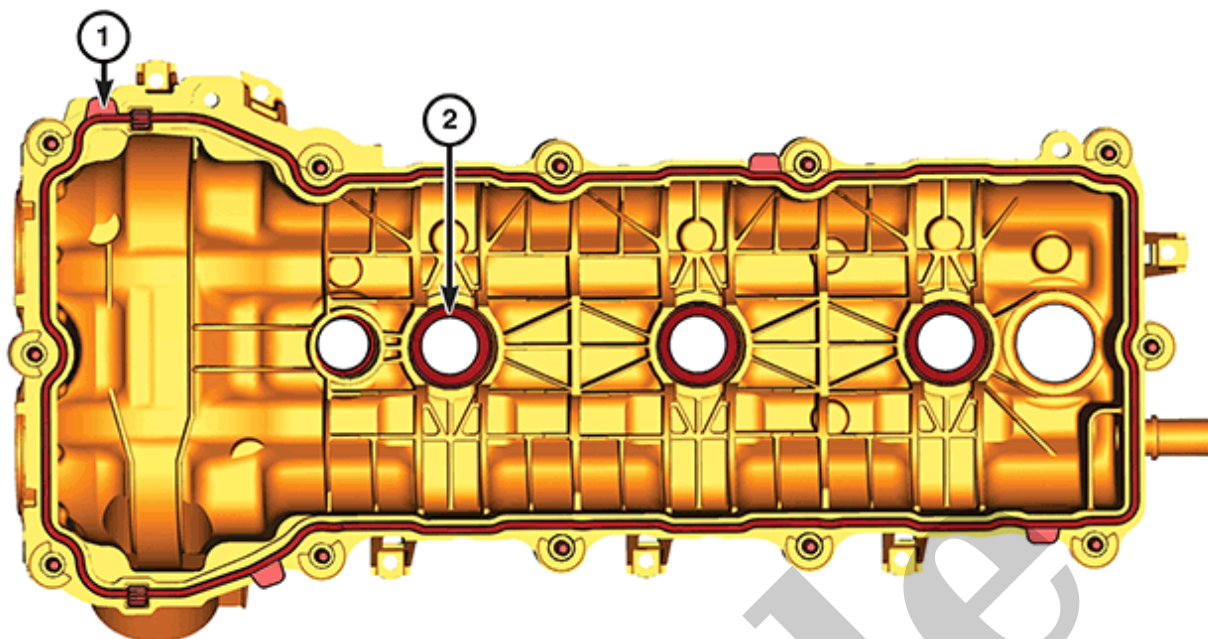
1 - Variable Valve Timing Solenoid

2 - Variable Valve Timing Solenoid

18. Mark the variable valve timing solenoids with a paint pen or equivalent so that they may be reinstalled in their original locations.
19. Remove the variable valve timing solenoids ([Refer to 09 - Engine/Valve Timing/SOLENOID/Removal and Installation](#))([Refer To List 1](#)).



1 - Variable Valve Lift (VVL) Solenoid Wire Harness Connector



0912082243

1 - Cylinder Head Cover Gasket

2 - Spark Plug Tube Seals

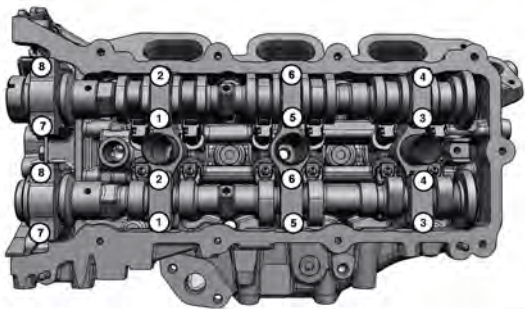
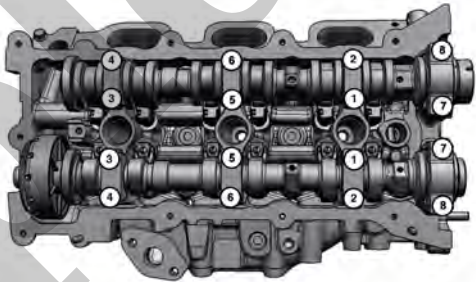
- The spark plug tube seals can be reused if not damaged.
- If required, install a **NEW** spark plug tube seals, in the cylinder head cover.
- Clean the timing engine timing cover, cylinder head and cylinder head cover mating surfaces with isopropyl alcohol in preparation for sealant application.

#### CAUTION

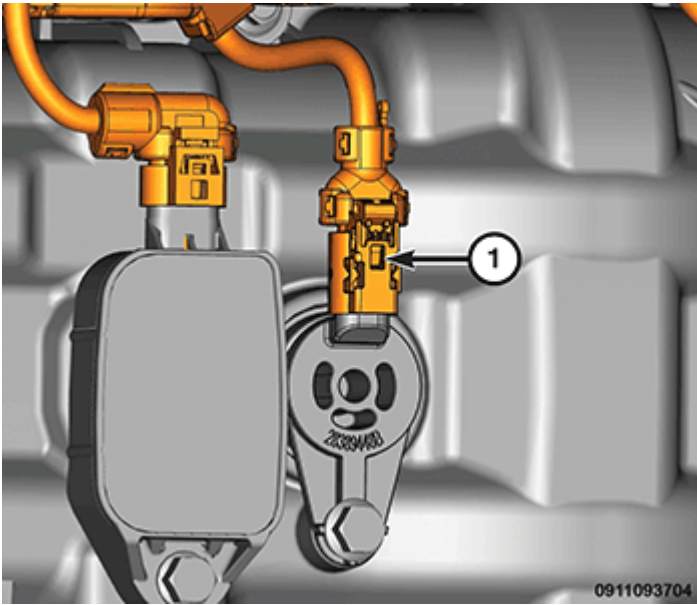
Engine assembly requires the use of a unique sealant that is compatible with engine oil. Using a sealant other than Mopar® Threebond Engine RTV Sealant may result in engine fluid leakage.

#### CAUTION

Following the application of Mopar® Threebond Engine RTV Sealant to the gasket surfaces, the components must be assembled within 10 minutes and the attaching fasteners must be tightened to specification within 45 minutes. Prolonged exposure to the air prior to assembly may result in engine fluid leakage.

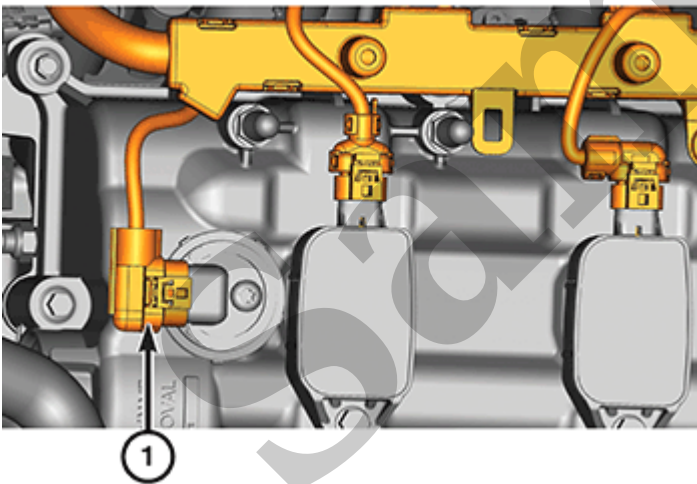
3	Camshaft Bearing Cap Bolts	<b>10 N·m (89 In. Lbs.)</b>	<p>Tightening Sequence - Left</p>  <p>Tightening Sequence - Right</p> 
-	Cylinder Head Oil Galley Plug	<b>18 N·m (13 Ft. Lbs.)</b>	-
-	Cylinder Head Oil Restrictor M8 Plug	<b>15 N·m (11 Ft. Lbs.)</b>	-
-	Heater Core Supply Tube to Cylinder Head M8 Bolt	<b>12 N·m (9 Ft. Lbs.)</b>	-
-	Wire Harness Retainer Bracket to LH Cylinder Head Bolts	<b>10 N·m (89 In. Lbs.)</b>	-
-	Variable Valve Lift Solenoid to	<b>10 N·m (89 In. Lbs.)</b>	-





1 - Variable Valve Lift (VVL) Solenoid Wire Harness Connector

8. Disconnect the VVL solenoid wire harness connector.



1 - Camshaft Position (CMP) Sensor Wire Harness Connector

9. Disconnect the CMP sensor wire harness connector.

## 2 - Spark Plug Tube Seals

17. Remove and discard the cylinder head cover gasket.
18. The spark plug tube seals can be reused if not damaged.

### CAUTION

Do not use oil based liquids, wire brushes, abrasive wheels or metal scrapers to clean the engine gasket surfaces. Use only isopropyl (rubbing) alcohol, along with plastic or wooden scrapers. Improper gasket surface preparation may result in engine fluid leakage.

19. Remove all residual sealant from the cylinder head, timing chain cover and cylinder head cover mating surfaces ([Refer to 09 - Engine - Standard Procedure](#))([Refer To List 4](#)).

## INSTALLATION

### NOTE

The magnetic timing wheels must not come in contact with magnets (pickup tools, trays, etc.) or any other strong magnetic field. This will destroy the timing wheels ability to correctly relay camshaft position to the camshaft position sensor.

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.