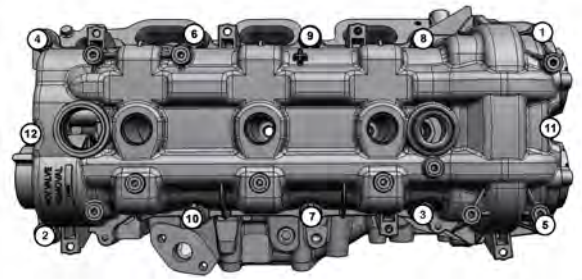


# Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

## 2009 JEEP Patriot OEM Service and Repair Workshop Manual

[Go to manual page](#)



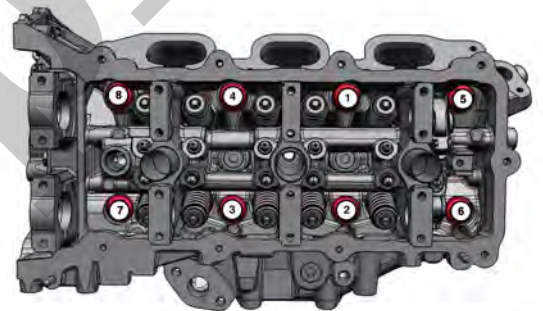
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### Torque Procedure

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



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Tightening Sequence - Right



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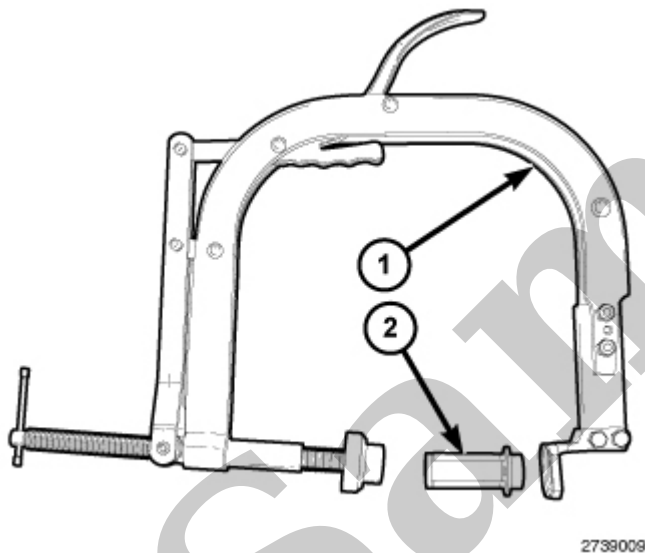
YOUR CURRENT VEHICLE

## Off Vehicle

### OFF VEHICLE

#### REMOVAL

1. Remove the cylinder head(s) ([Refer to Engine/Cylinder Head/Cylinder Head Assembly/Removal and Installation](#))([Refer To List 1](#)).



1 - Valve Spring Compressor Tool

2 - Valve Spring Adapter

2. Position the Valve Spring Compressor Adapter

Adapter, Valve Spring

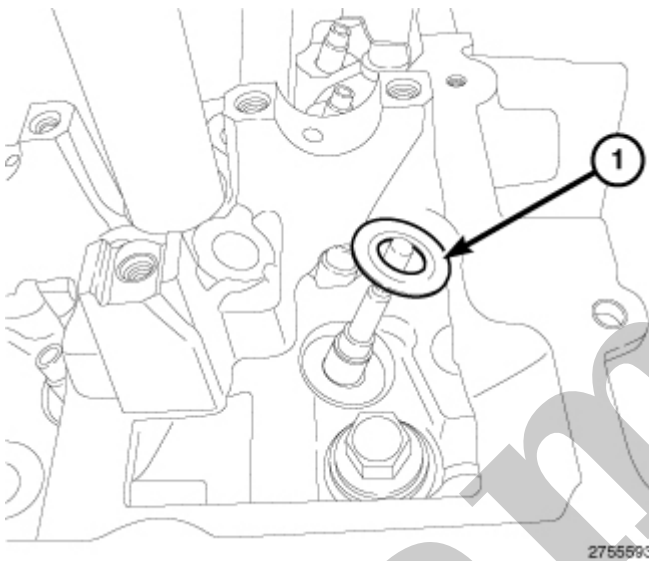
1 - Valve Spring Retainer

2 - Valve Spring

#### NOTE

If the springs are to be reused, identify their positions so that they can be reassembled into their original locations. Number 5 cylinder exhaust valve spring shown, all other valves similar.

4. Release the valve spring compressor and remove the valve spring retainer and valve spring.



1 - Spring Seat

5. Remove the spring seat.

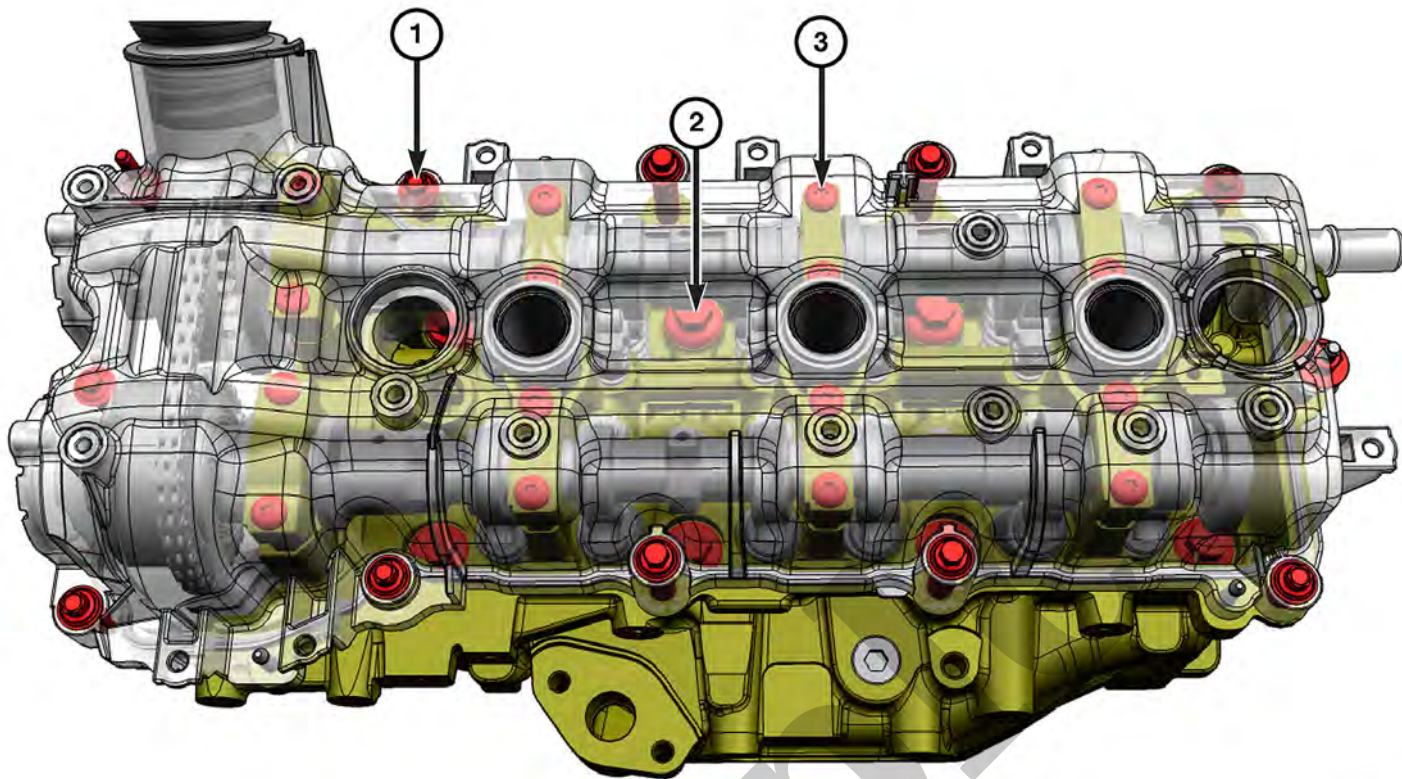
#### INSTALLATION

1. Install the spring seat.

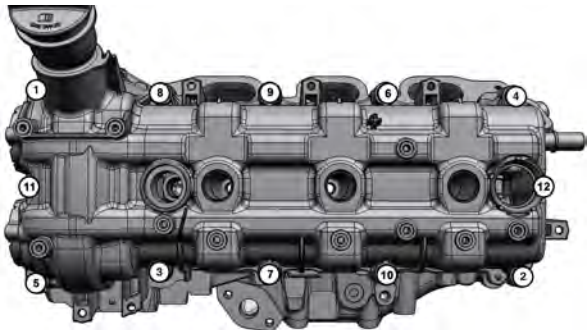
#### NOTE

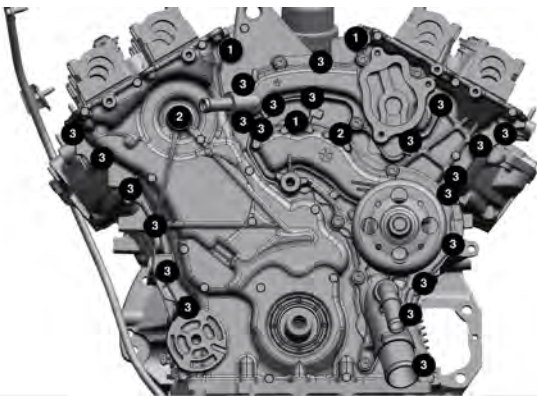
If the valve springs are being reused, reassemble them into their original locations. Number 5 cylinder exhaust valve spring shown, all other valves similar.

2. Install the valve spring and valve spring retainer.
3. Compress valve springs with the Valve Spring Compressor Adapter

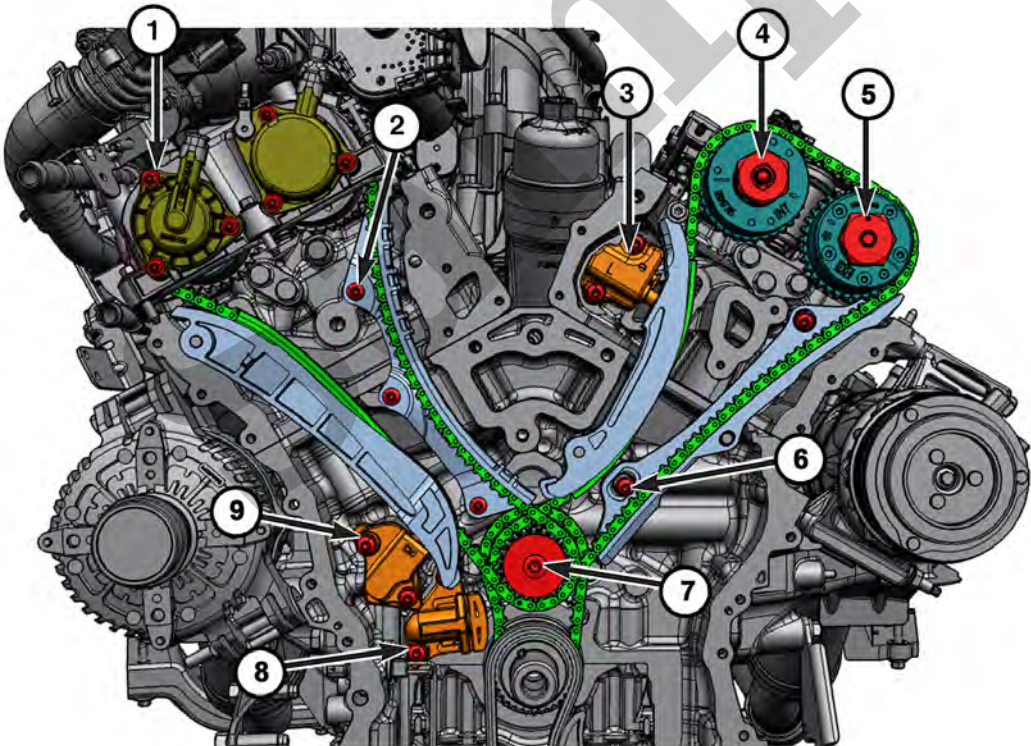


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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Cylinder Head Cover M6 Bolts	12 N·m (9 Ft. Lbs.)	<p>Tightening Sequence - Left</p>  <p>Tightening Sequence - Right</p>

	Engine Timing Cover M8 Bolt Engine Timing Cover M10 Bolts	<b>25 N·m (18 Ft.            Lbs.)</b>  <b>55 N·m (41 Ft.            Lbs.)</b>	 <div data-bbox="751 584 1131 855"> <p>1 - M10 Timing Cover Bolts</p> <p>2 - M8 Timing Cover Bolts</p> <p>3 - M6 Timing Cover Bolts</p> </div>	
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TORQUE SPECIFICATIONS - VALVE TIMING

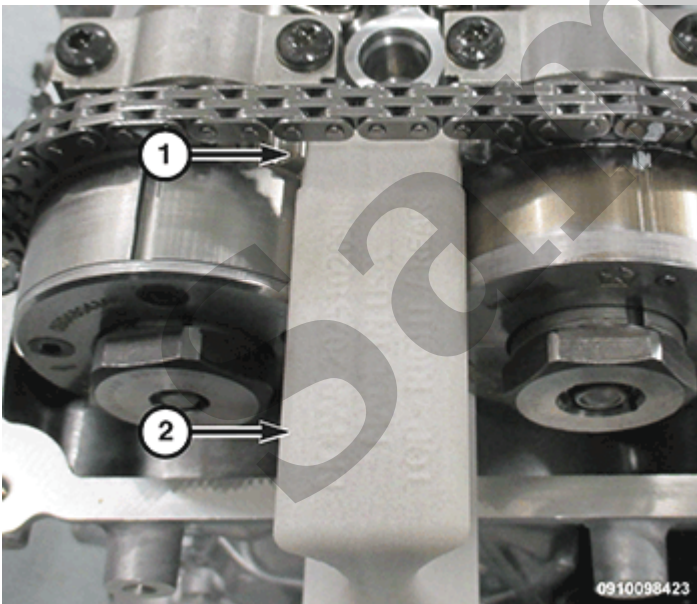


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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
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to lock the crankshaft against rotation.



1 - Phaser

2 - Camshaft Phaser Holder

4. If removing the left hand camshafts, install the  
Holder, Camshaft Phaser - Right-Rear Cyl Head

1 - Valve Spring Retainer

2 - Valve Spring

#### NOTE

If the springs are to be reused, identify their positions so that they can be reassembled into their original locations. Number 5 cylinder exhaust valve spring shown, all other valve springs similar.

9. Release the valve spring compressor and remove the valve spring retainer and valve spring.
10. If required, remove the valve guide seal and spring seat [\(Refer to Engine/Cylinder Head/SEAL\(S\), Valve Guide/Removal and Installation\)\(Refer To List 4\)](#).

#### INSTALLATION

1. If removed, install the spring seat and valve guide seal over the valve guide [\(Refer to Engine/Cylinder Head/SEAL\(S\), Valve Guide/Removal and Installation\)\(Refer To List 4\)](#).

#### NOTE


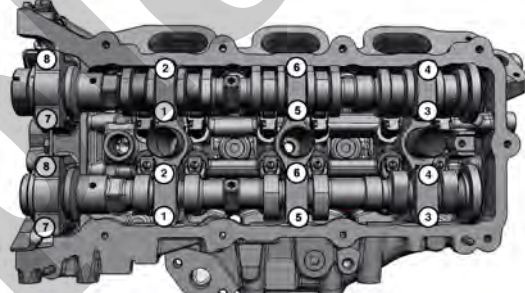

Make sure that the valve spring is intact around the top of the valve guide seal.

#### NOTE

If the valve springs are being reused, reassemble them into their original locations.

2. Install the valve spring and valve spring retainer.
3. Compress the valve springs with the

Adapter, Valve Spring

		<p>6. All to 30 N·m (22 ft. lbs.)</p> <p>7. All to 45 N·m (33 ft. lbs.)</p> <p>8. Re-tighten all to 45 N·m (33 ft. lbs.)</p> <p>9. All + 130° Turn. Do not use a torque wrench for this step.</p>	
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>	-

- [09 - Engine, 5.7L / Technical Specifications](#)

Sample