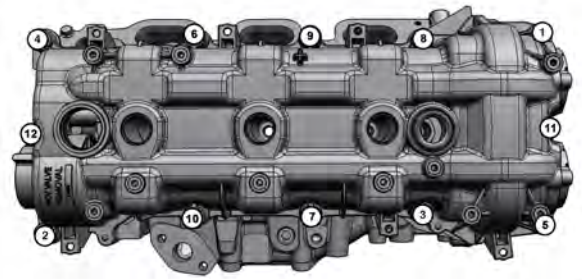


Your Ultimate Source for OEM Repair Manuals

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 Grand Cherokee OEM Service and Repair Workshop Manual

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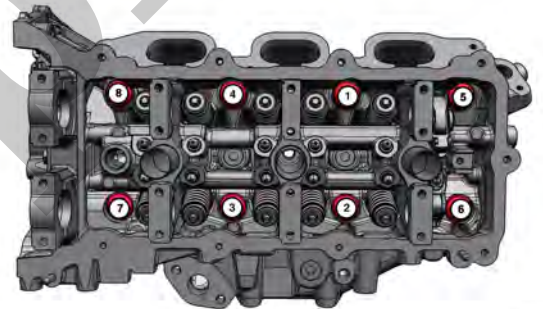
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Torque Procedure

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

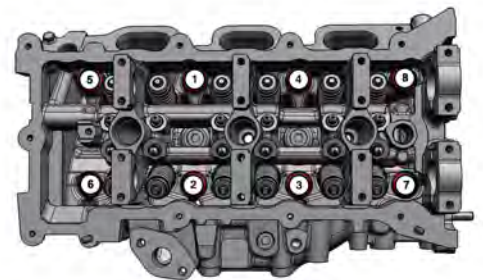
1. 30 N·m (22 ft. lbs.)
2. 45 N·m (33 ft. lbs.)
3. Re-tighten all to 45 N·m (33 ft. lbs.)
4. All + 125° Turn. Do not use a torque wrench for this step.
5. Loosen all fasteners in reverse of sequence shown
6. All to 30 N·m (22 ft. lbs.)
7. All to 45 N·m (33 ft. lbs.)
8. Re-tighten all to 45 N·m (33 ft.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

Tightening Sequence - Left

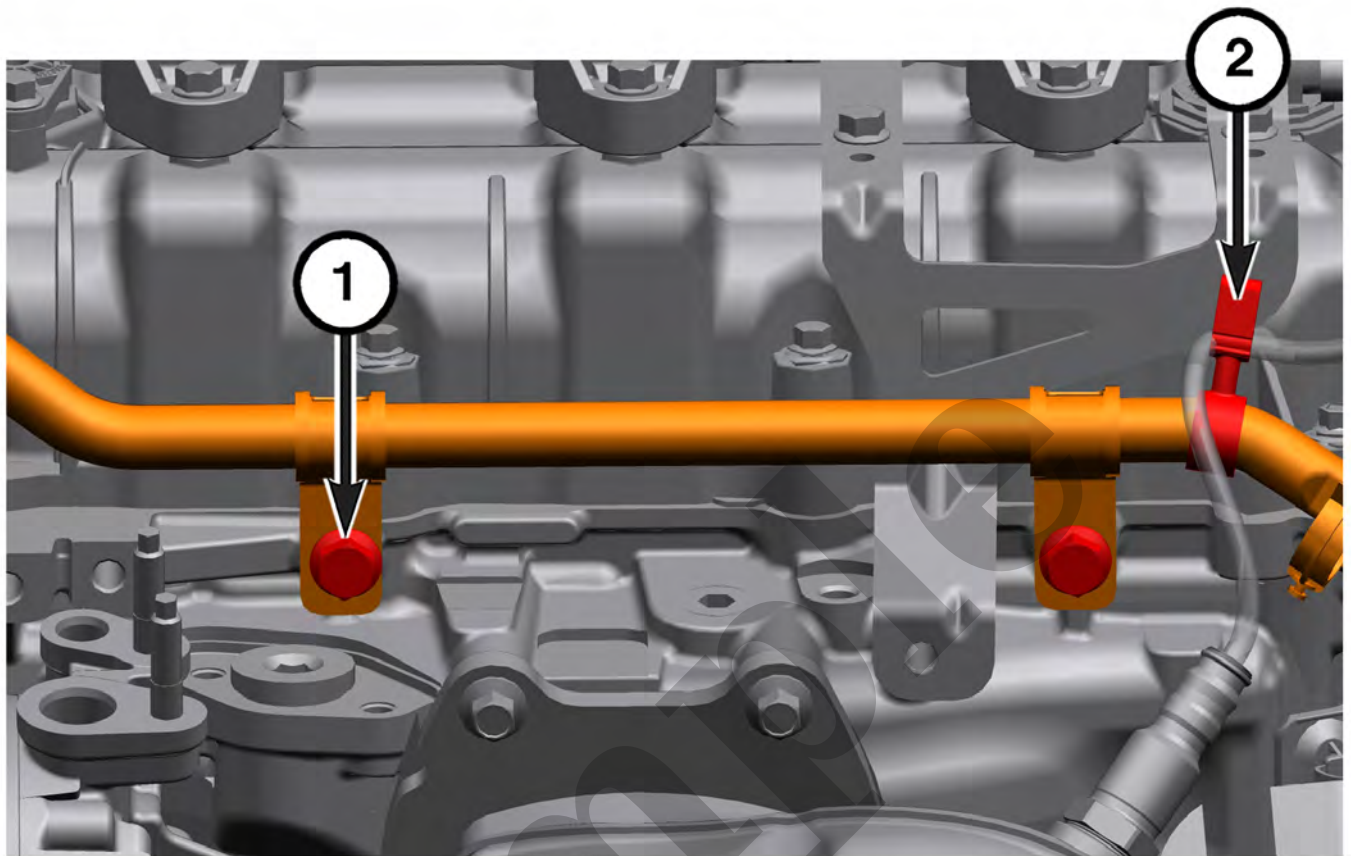


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Tightening Sequence - Right



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1 - Return Hose Fastener

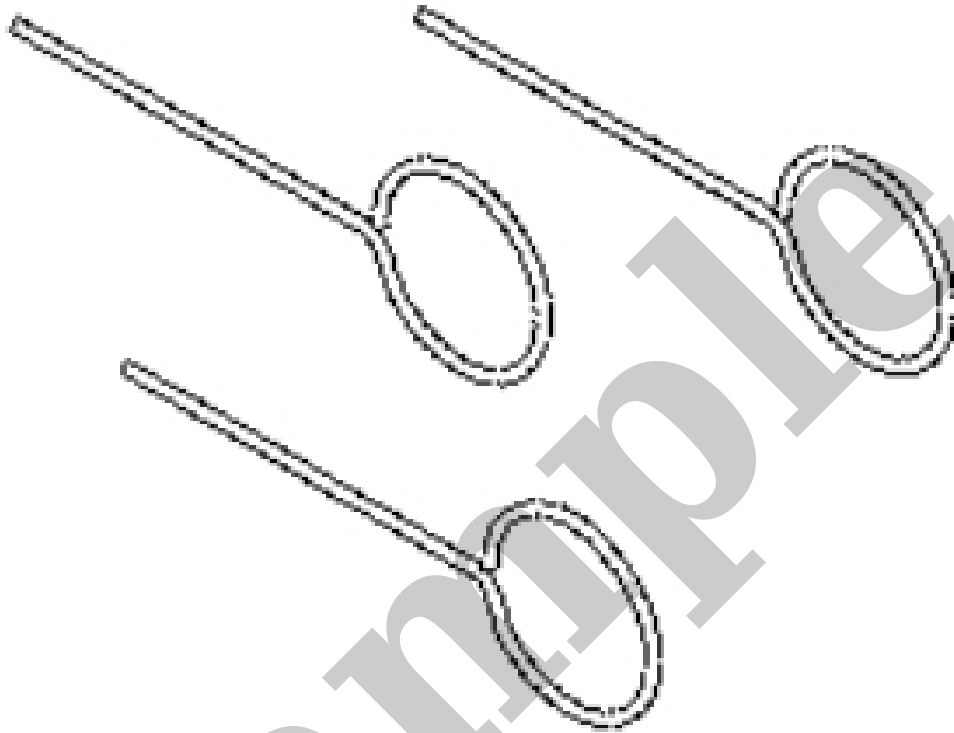
2 - Wire Harness

7. Remove the heater core return hose fasteners from the left cylinder head.
8. Remove the wire harness from the heater core return hose and position the hose aside.
9. Remove the A/C compressor and position aside ([Refer to Heating and Air Conditioning/Plumbing/COMPRESSOR, A/C/Removal and Installation](#)).
10. Remove the left catalytic converter from the cylinder head and position aside ([Refer to Exhaust System/CONVERTER, Catalytic/Removal and Installation](#)).

result in valve or piston damage.

18. Reset the LH cam chain tensioner by lifting the pawl, pushing back the piston and installing Tensioner Pin

Pins, Tensioner



(Refer to Engine/Valve Timing - Standard Procedure)(Refer To List 9)

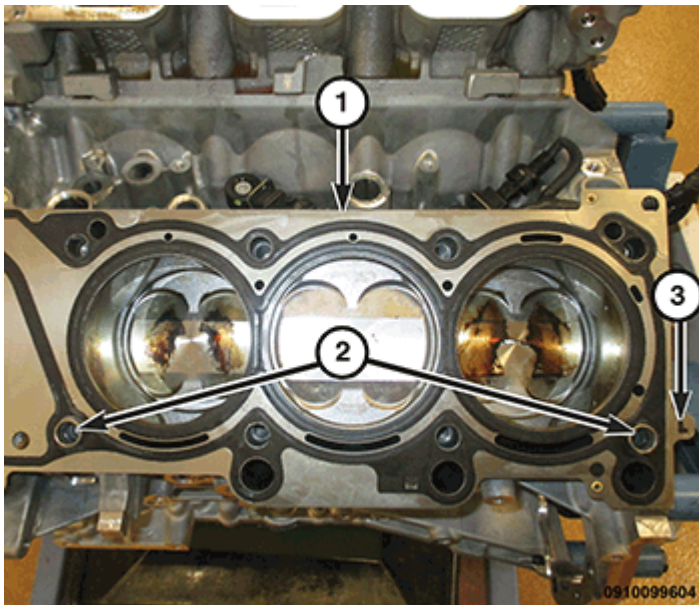
19. Remove the left side camshafts (Refer to Engine/Cylinder Head/CAMSHAFT, Engine/Removal and Installation)(Refer To List 10).

NOTE

If the rocker arms are to be reused, identify their positions so that they can be reassembled into their original locations.

20. Remove the rocker arms (Refer to Engine/Cylinder Head/ROCKER ARM, Valve/Removal and Installation)(Refer To List 11).

NOTE



1 - Head Gasket

2 - Locating Dowels

3 - Identifier

2. Clean and prepare the gasket sealing surfaces of the cylinder head and block ([Refer to Engine - Standard Procedure](#))([Refer To List 13](#)).

CAUTION

Non-compressible debris such as oil, coolant or RTV sealants that are not removed from bolt holes can cause the aluminum casting to crack when tightening the bolts.

CAUTION

When cleaning cylinder head and cylinder block surfaces, DO NOT use a metal scraper because the surfaces could be cut or ground. Use ONLY a wooden or plastic scraper.

3. Clean out the cylinder head bolt holes in the engine block.

WARNING

The multi-layered steel head gaskets have very sharp edges that could cause personal injury if not handled carefully.

CAUTION

Always reinstall timing chains so that they maintain the same direction of rotation. Inverting a previously run chain on a previously run sprocket will result in excessive wear to both the chain and sprocket.

13. If removed, install the hydraulic lifters (Refer to 09 - Engine/Cylinder Head/ROCKER ARM, Valve/Removal and Installation)(Refer To List 11).

NOTE

If the rocker arms and hydraulic are being reused, reassemble them into their original locations.

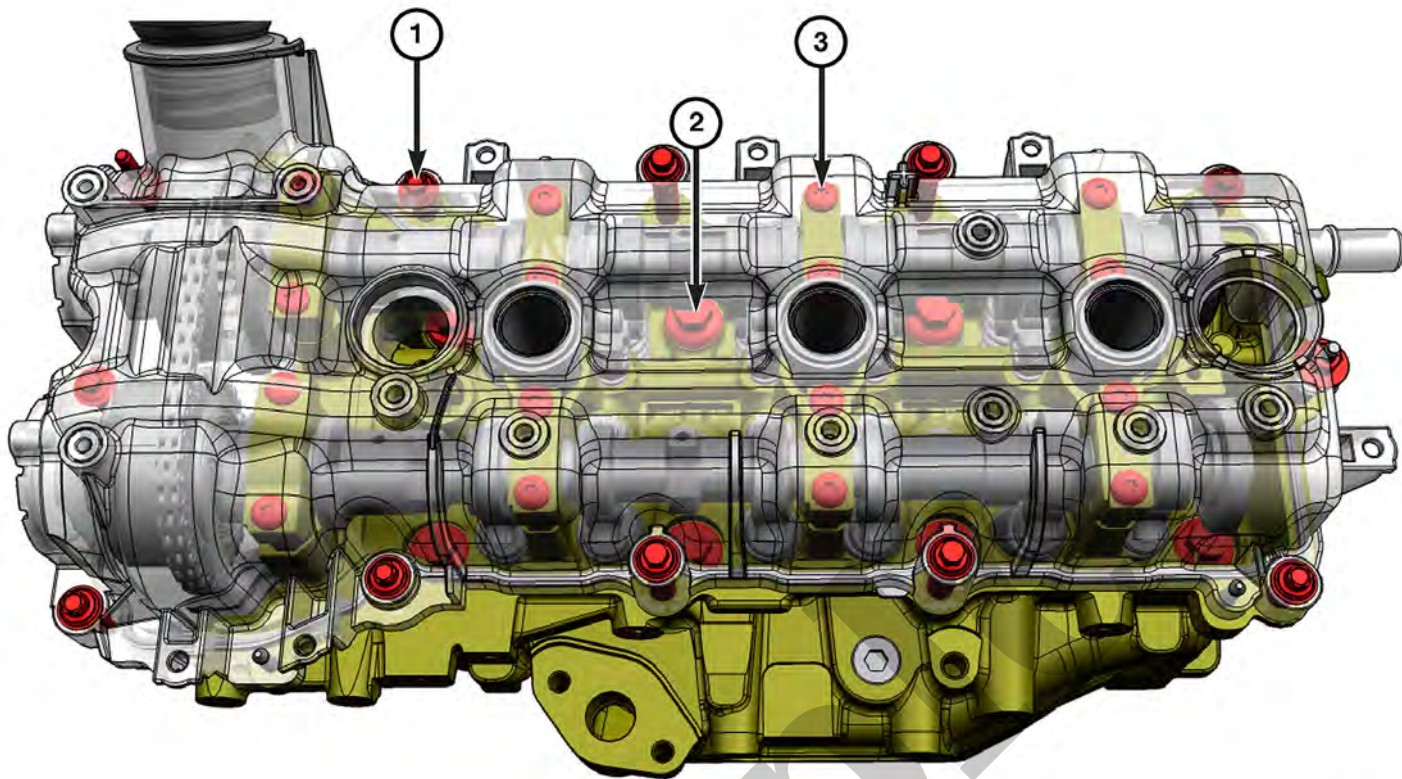
14. Install the rocker arms and camshafts (Refer to Engine/Cylinder Head/CAMSHAFT, Engine/Removal and Installation)(Refer To List 10).

CAUTION

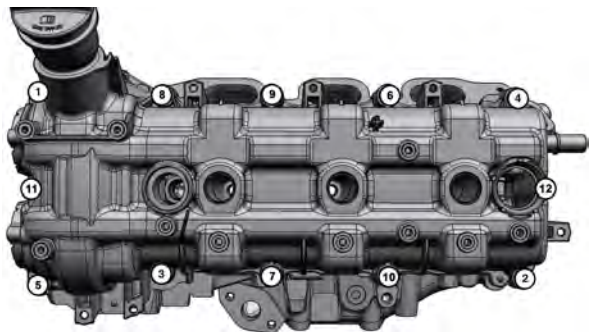
Do not rotate the camshafts more than a few degrees independently of the crankshaft. Valve to piston contact could occur resulting in possible valve damage. If the camshafts need to be rotated more than a few degrees, first move the pistons away from the cylinder heads by rotating the crankshaft counterclockwise to a position 30° before-top-dead-center. Once the camshafts are returned to their top-dead-center position, rotate the crankshaft clockwise to return the crankshaft to top-dead-center.

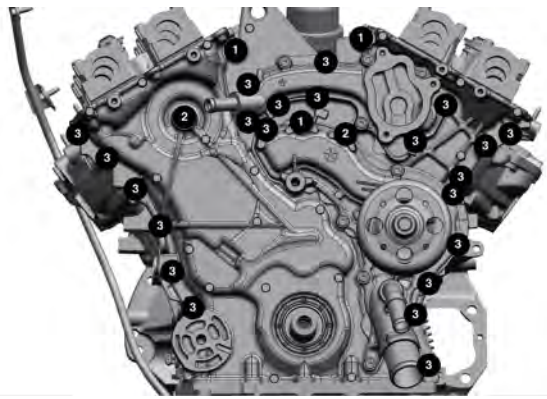
15. Remove the Tensioner Pin

Pins, Tensioner

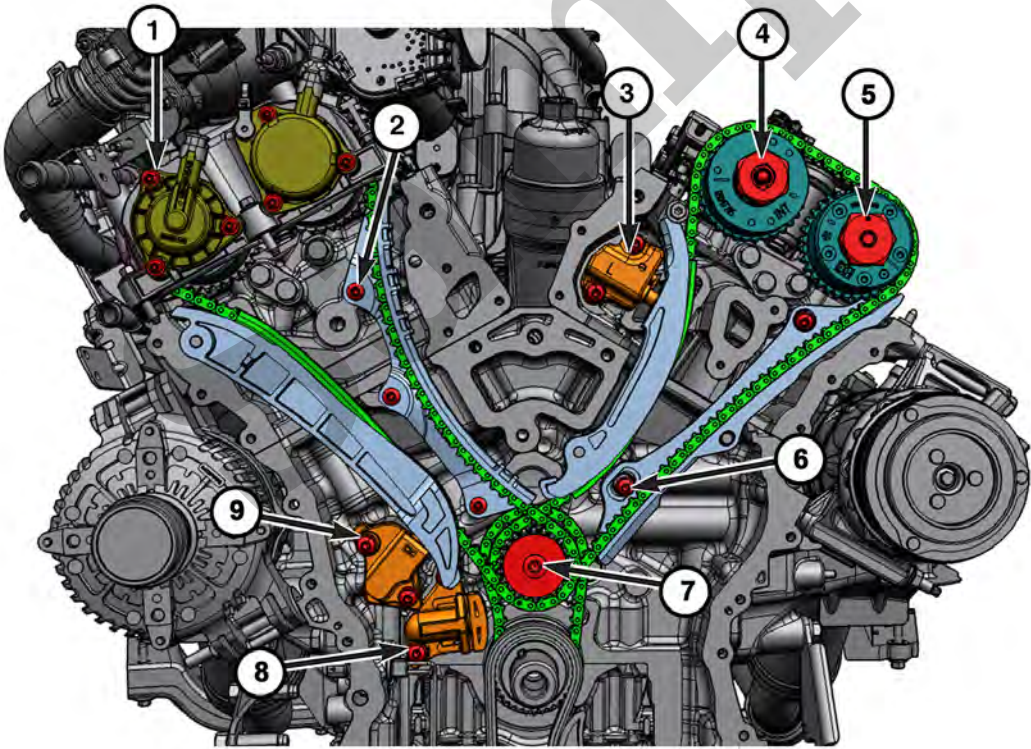


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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Cylinder Head Cover M6 Bolts	12 N·m (9 Ft. Lbs.)	<p>Tightening Sequence - Left</p>  <p>Tightening Sequence - Right</p>

	Engine Timing Cover M8 Bolt Engine Timing Cover M10 Bolts	25 N·m (18 Ft. Lbs.) 55 N·m (41 Ft. Lbs.)	 <div data-bbox="750 582 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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Right Cylinder Head

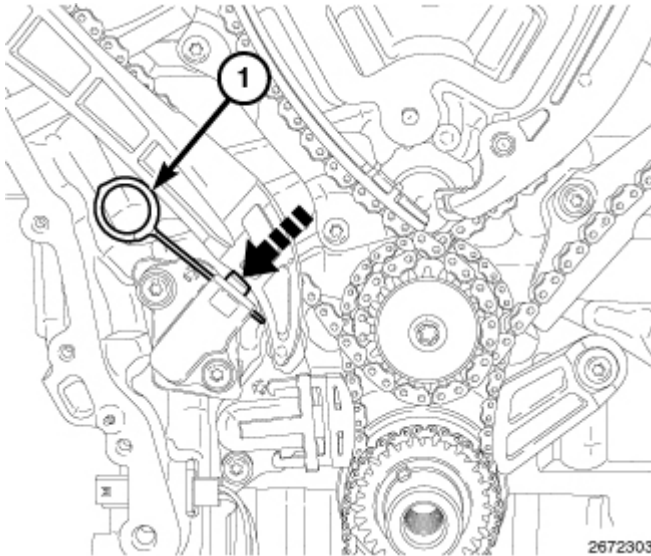
RIGHT CYLINDER HEAD

REMOVAL

1. Perform the fuel pressure release procedure ([Refer to Engine/Fuel System/Standard Procedure](#))([Refer To List 1](#)) .
2. Disconnect and isolate the negative battery cable(s) ([Refer to Electrical/Battery System/Standard Procedure](#)).
3. Remove the upper and lower intake manifolds and insulator ([Refer to Engine/Air Intake System/MANIFOLD, Intake/Removal and Installation](#))([Refer To List 2](#)).
4. Remove the generator fasteners and position the generator aside ([Refer to Electrical/Charging/GENERATOR/Removal and Installation](#)).
5. Raise and support the vehicle ([Refer to Vehicle Quick Reference/Hoisting - Standard Procedure](#)).
6. Drain the engine oil ([Refer to Engine/Lubrication/Standard Procedure](#))([Refer To List 3](#)).
7. Remove the right side catalytic converter and position aside ([Refer to Exhaust System/CONVERTER, Catalytic/Removal and Installation](#)).

Always reinstall timing chains so that they maintain the same direction of rotation. Inverting a previously run chain on a previously run sprocket will result in excessive wear to both the chain and sprocket.

15. Mark the direction of rotation on the timing chain using a paint pen or equivalent to aid in reassembly.



1 - Tensioner Pin Tool

CAUTION

When the timing chains are removed and the cylinder heads are still installed, DO NOT rotate the camshafts or crankshaft without first locating the proper crankshaft position. Failure to do so will result in valve or piston damage.

16. Reset the RH cam chain tensioner by pushing back the tensioner piston and installing Tensioner Pin

Pins, Tensioner