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2009 JEEP Grand Cherokee SRT-8 OEM Service and Repair Workshop Manual

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1 - Head Gasket
2 - Locating Dowls
3 - Identifier

WARNING

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

NOTE

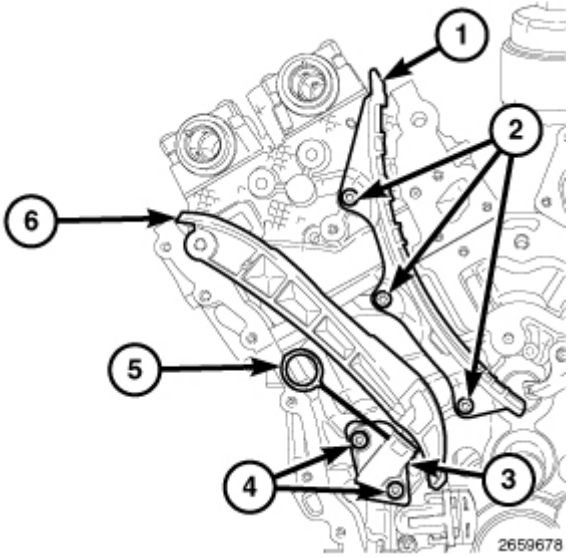
The head gasket crimps the locating dowels and the dowels may pull out of the engine block when the head gasket is removed.

24. Remove the cylinder head and gasket. Discard the gasket.

CAUTION

Do not lay the cylinder head on its gasket sealing surface, due to the design of the cylinder head gasket, any distortion to the cylinder head sealing surface may prevent the gasket from properly sealing resulting in leaks.

7. Install the eight cylinder head bolts finger tight. The cylinder head bolts must be tightened in the sequence shown in the torque table below.

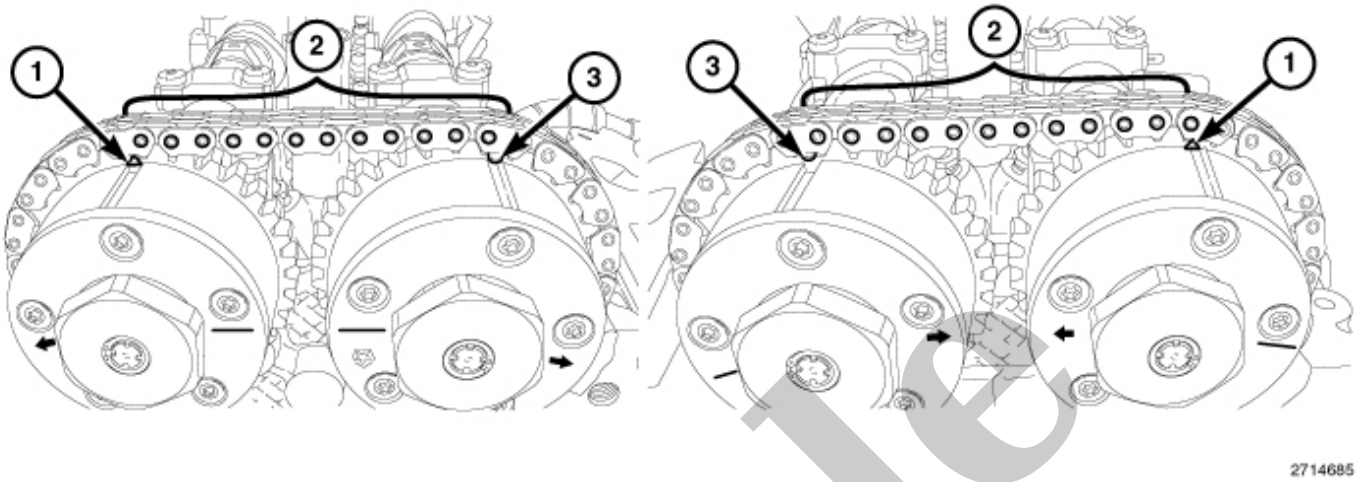


1 - RH Timing Chain Guide	4 - Chain Tensioner Bolts
2 - Chain Guide Bolts	5 - Tensioner Pin Tool
3 - Timing Chain Tensioner	6 - Tensioner Arm

8. Install the RH timing chain guide with three bolts and tighten the chain guide bolts to the proper torque specification in the torque table below.
9. Install the RH timing chain tensioner to the engine block with two bolts and tighten the chain tensioner bolts to the proper torque specification in the torque table below.
10. Reset the RH timing chain tensioner by pushing back the tensioner piston and installing Tensioner Pin

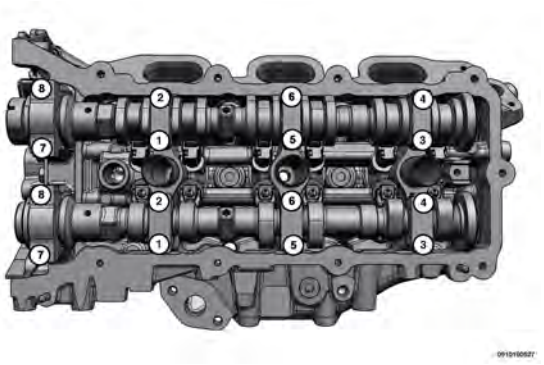
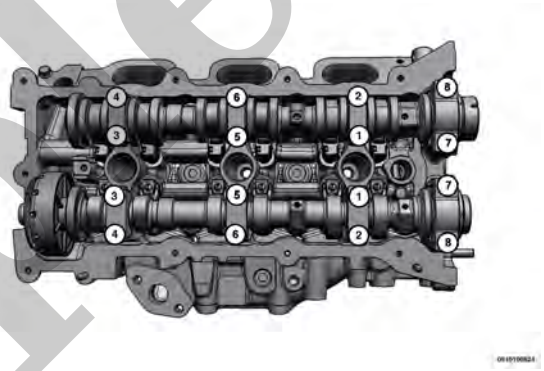
Pins, Tensioner

phaser arrows should point toward each other and be parallel to the valve cover sealing surface. The right side cam phaser arrows should point away from each other and the scribe lines should be parallel to the valve cover sealing surface.



1 - Triangle Marking
2 - Twelve Chain Pins
3 - Circle Marking

18. There should be 12 chain pins between the exhaust cam phaser triangle marking and the intake cam phaser circle marking.
19. If the engine timing is not correct, (Refer to Engine/Valve Timing/CHAIN and SPROCKETS, Timing/Removal and Installation)(Refer To List 14).
20. Install the engine timing cover and cylinder head covers (Refer to Engine/Valve Timing/COVER(S), Engine Timing/Removal and Installation)(Refer To List 7).
21. Install the bank 1 rear Variable Valve Lift (VVL) solenoid.
22. Install the wire harness to the right cylinder head and securely tighten the fasteners.
23. Install the spark plugs (Refer to Engine/Ignition Control/SPARK PLUG/Removal and Installation)(Refer To List 5).
24. Connect the oil temperature sensor wire harness connector.
25. Connect the ignition coil capacitor wire harness connector.

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

- 09 - Engine, 2.0L / Ignition Control / SPARK PLUG / Removal and Installation
- 09 - Engine, 3.6L / Ignition Control / SPARK PLUG / Removal and Installation
- 09 - Engine, 5.7L / Ignition Control / SPARK PLUG / Removal and Installation

List 6

- 09 - Engine, 2.0L / Valve Timing / SOLENOID, Valve Timing / Removal and Installation
- 09 - Engine, 3.6L / Valve Timing / SOLENOID, Valve Timing / Removal and Installation
- 09 - Engine, 5.7L / Valve Timing / SOLENOID, Valve Timing / Removal and Installation

List 7

- 09 - Engine, 2.0L / Valve Timing / COVER(S), Engine Timing / Removal and Installation
- 09 - Engine, 3.6L / Valve Timing / COVER(S), Engine Timing / Removal and Installation
- 09 - Engine, 5.7L / Valve Timing / COVER(S), Engine Timing / Removal and Installation

List 8

- 09 - Engine, 2.0L / Valve Timing / Standard Procedure
- 09 - Engine, 3.6L / Valve Timing / Standard Procedure
- 09 - Engine, 5.7L / Valve Timing / Standard Procedure

List 9

- 09 - Engine, 2.0L / Cylinder Head / CAMSHAFT, Engine / Removal and Installation
- 09 - Engine, 3.6L / Cylinder Head / CAMSHAFT, Engine / Removal and Installation

List 10

- 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

List 11

- 09 - Engine, 2.0L / Cylinder Head / LIFTER(S), Hydraulic / Removal and Installation
- 09 - Engine, 3.6L / Cylinder Head / LIFTER(S), Hydraulic / Removal and Installation

List 12

- 09 - Engine, 2.0L / Technical Specifications
- 09 - Engine, 3.6L / Technical Specifications
- 09 - Engine, 5.7L / Technical Specifications

List 13

- 09 - Engine, 2.0L / Standard Procedure
- 09 - Engine, 3.6L / Standard Procedure
- 09 - Engine, 5.7L / Standard Procedure

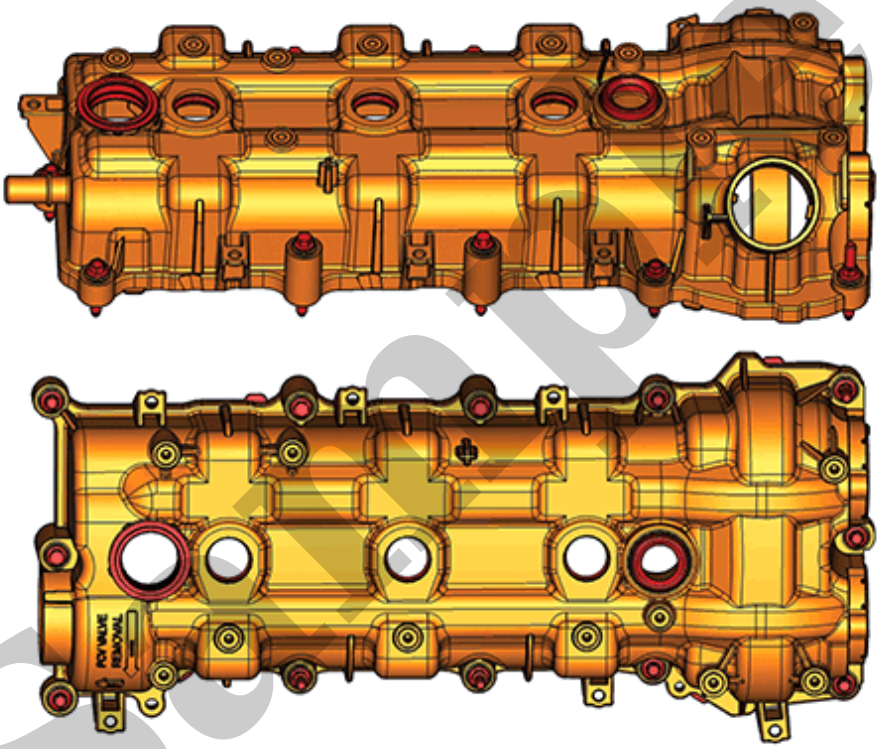
List 14

- 09 - Engine, 2.0L / Valve Timing / CHAIN and SPROCKETS, Timing / Removal and Installation

YOUR CURRENT VEHICLE

Cylinder Head Cover

CYLINDER HEAD COVER

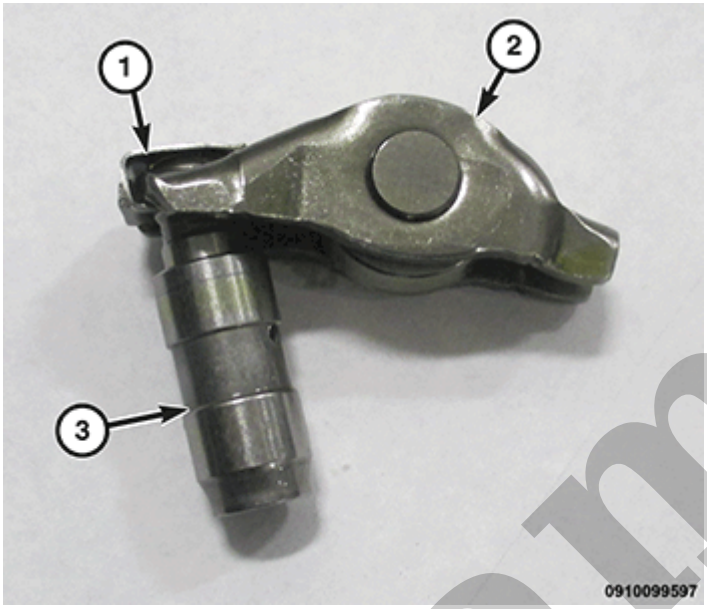


The cylinder head covers are made of a carbon and fiberglass composite.

- The cylinder head covers are not interchangeable from side-to-side.
- The cylinder head covers are sealed with a press-in-place gasket that is designed to isolate the cover from the cylinder head for improved Noise Vibration and Harshness (NVH).
- There are two dowel pins on the outboard side of the cover flange to locate the cover to holes in the cylinder head.
- Room Temperature Vulcanizing silicone (RTV) is used to seal the T-joint at the timing cover, cylinder head and cylinder head cover.

Rocker Arm

ROCKER ARM



1 - Retaining Clip
2 - Rocker Arm
3 - Hydraulic Lifter

The exhaust roller rocker arms are stamped steel with an integral roller bearing. The exhaust rocker arms are attached to the hydraulic lifters with a retaining clip.

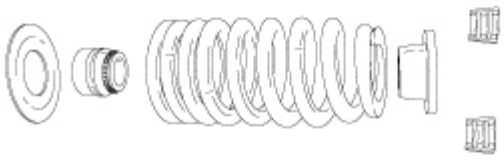
NOTE

The exhaust rocker arm and exhaust hydraulic lifter should not be unclipped during diagnosis and handling.

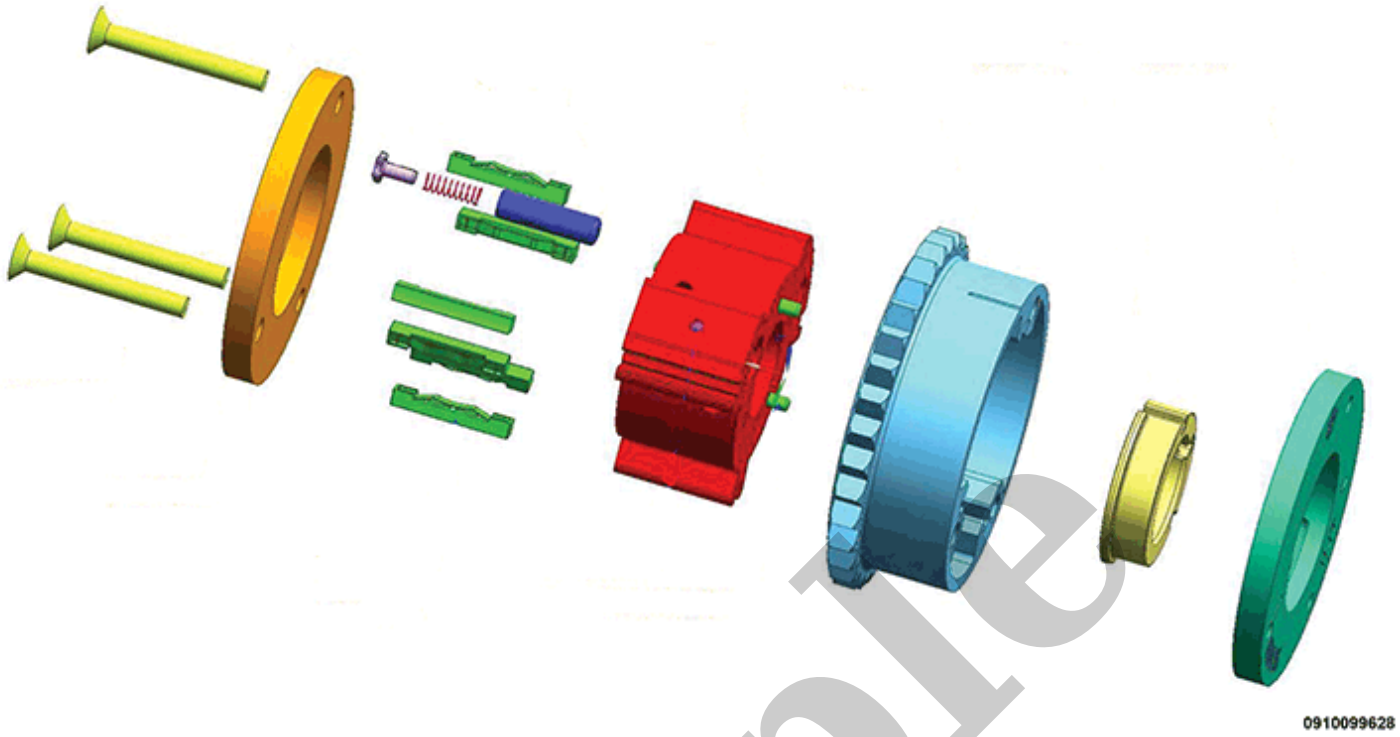
YOUR CURRENT VEHICLE

Valve Spring

VALVE SPRING



The valve springs are a beehive design and made from high strength chrome silicon steel. The springs are common for intake and exhaust applications. Valve guide seals are rubber overmolded on a steel support cylinder with a garter spring at the seal lip. The seals are not integrated with the valve spring seat. The valve spring seat is a flat steel washer. The steel valve spring retainers are designed for use with beehive springs and the valve spring retainer locks are a three bead Butt type design.



Intake Phaser

The engine is equipped with Variable Valve Timing (VVT). This system adjusts the timing of all four camshafts independently using solenoids and oil control valves to direct oil pressure into the camshaft phaser assemblies. The four phasers are located on the front of the camshafts, behind the VVT solenoids, inside of the engine timing cover.

- The camshaft phaser assembly advances and/or retards camshaft timing to improve engine performance, mid-range torque, idle quality, fuel economy, and reduce emissions.
- The exhaust phasers are identified with EXH and the intake phasers are identified with INT.
- The exhaust phaser has a clockspring, the intake phaser does not.
- The camshaft sprockets are integrated with the camshaft phaser and are serviced as an assembly. Do not attempt to disassemble the phasers, they are not serviceable.
- Phasers are interchangeable between the right and left cylinder heads, but should be installed in the same location as removed.